

# 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18)

Data File Documentation

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# Executive Summary

The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is the third follow-up data collection of individuals who earned a bachelor's degree in the 2007–08 academic year. Conducted by the National Center for Education Statistics (NCES) at the U.S. Department of Education, B&B:08/18 gathers information about the employment, education, and other experiences of these individuals 10 years after baccalaureate receipt. This data file documentation details the methods used to collect, process, and analyze data from a survey of the baccalaureate recipients conducted in the 2018–19 academic year as well as from administrative data sources, and it provides users with guidance on how to analyze these nationally representative data.

## Sampling Design

The B&B:08 cohort was sampled from the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) sampling frame. NPSAS:08 was a nationally representative survey of students attending Title IV eligible postsecondary institutions in the 50 States, the District of Columbia, and Puerto Rico. NPSAS:08 sample members were enrolled in postsecondary education at all levels, excluding those currently enrolled in high school or exclusively enrolled in a high school equivalency program. Among the group of students eligible for NPSAS:08, students were also identified as potentially eligible for the B&B:08 cohort if their records indicated they had earned or were expected to earn a bachelor's degree in the 2007–08 academic year.

Of the potentially eligible B&B:08 cohort members identified in NPSAS:08, the first follow-up data collection, B&B:08/09, confirmed 2007–08 baccalaureate recipients. Eligibility for the B&B:08 cohort was based on completing all bachelor's degree requirements in the 2007–08 academic year and receiving a bachelor's degree no later than June 30, 2009. This data collection included transcripts from the institutions where sample members earned their bachelor's degrees.

The second follow-up, B&B:08/12, contacted sample members again during the 2012–13 academic year. The survey focused on respondents' experiences since the first follow-up survey.

The third follow-up, B&B:08/18, contacted sample members during the 2018–19 academic year. Eligibility was reviewed before and after each data collection round.

The eligible sample after the B&B:08/12 data collection consisted of 17,110 individuals. After the B&B:08/18 survey, 50 individuals were deemed ineligible; thus, the eligible sample for B&B:08/18 included 17,070 individuals.<sup>1</sup>

## Survey Design, Data Collection, Outcomes, and Evaluation

The B&B:08/18 survey focused on key outcomes over the 10 years following the sample members' baccalaureate degree completion. The survey was designed to gather information about a range of topics including postbaccalaureate education, student loan debt and repayment, employment, teaching experiences (for current and former kindergarten through 12th-grade teachers), and demographic characteristics such as current marital status and household financial status. Survey items were developed in consultation with members of a Technical Review Panel. Preliminary versions of the survey items, including a résumé collection, were tested in a field-test survey administered in 2017. A facsimile of the final full-scale survey instrument is included as an appendix to this report.

The B&B:08/18 survey was available by both web-based instrument and telephone interview. In addition to the full survey, two shortened versions were developed for nonresponse conversion: an abbreviated survey and a mini survey. The *abbreviated* survey consisted of a subset of items from the full survey, including information for up to three employers and one job title as well as education experiences, debt and repayment, and background information. The *mini* survey was an even shorter version of the abbreviated survey that included only items critical to determining B&B:08/18 response status. The mini survey was also made available as a paper survey. Data collection staff were trained to encourage participation and to record accurately sample members' responses. Supervisors monitored telephone interviews and convened regular meetings to improve the quality and efficacy of data collection continuously. Staff who were tasked with tracing the location of respondents used various national databases to update sample members' contact information when needed.

To assess respondent burden and instrument performance, survey items were evaluated based on how quickly they were completed, the percentage of B&B:08/18 respondents who did not respond to each item, and consistency between the distribution of responses for telephone respondents and web respondents. Coder forms—survey items for which respondents started typing a response and then

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<sup>1</sup> All sample sizes in this report are rounded to the nearest 10. Calculations are based on unrounded values.



selected an option from a predicted list—were evaluated based on the proportion of respondents who identified a response from the predicted list.

The B&B:08/18 survey data collection began in July 2018 and continued through March 2019. Overall, 16,420 B&B:08/18 sample members were located, and 14,670 (86 percent of the B&B:08/18 sample of 17,110) were deemed B&B:08/18 respondents. Sample members were considered a B&B:08/18 respondent if they completed either a full, abbreviated, or mini survey. Some partial survey completers were considered B&B:08/18 respondents even if they did not complete the entire survey but completed at least the portion of the Employment section where they reported all their employers.

Among B&B:08/18 respondents, 95 percent completed the survey on the Web (this includes smartphones and other mobile devices), 4 percent completed it by telephone, and 0.4 percent completed by paper. The average completion time for the full survey was 27 minutes for web respondents and 41 minutes for telephone respondents, with substantially shorter completion times for the abbreviated (which averaged 13 minutes) and mini surveys (which averaged 6 minutes). In addition to completing the survey, sample members were asked to upload their current résumés to the study website. Approximately 4,230 résumés were collected, representing 29 percent of B&B:08/18 respondents.

## Administrative Data Sources

Administrative records were also collected for B&B:08/18 to supplement the survey data. The U.S. Department of Education’s Central Processing System (CPS) provided demographic and enrollment information for 730 sample members who applied for federal student aid in the academic year 2017–18 and 630 sample members who applied in 2018–19 (4 percent of the B&B:08/18 sample of 17,110 for both years). The U.S. Department of Education’s National Student Loan Data System (NSLDS) provided historical information about disbursement of federal student loans and grants as well as debt and repayment outcomes for all sample members. The information obtained from NSLDS yielded student loan data for 13,430 sample members (78 percent) and Title IV grant data for 8,890 sample members (52 percent). The Veterans Benefits Administration data system provided information regarding 970 sample members’ service status (6 percent). Census tract data were also obtained to provide regional characteristics of the individual’s reported residence at the time of the survey.

Sample members were asked to identify the high school from which they graduated and any schools at which they taught after receiving their 2007–08 bachelor’s

degrees. Restricted-use data users can match these high school identification codes to NCES datasets of elementary and secondary schools such as the Common Core of Data (CCD) and the Private School Universe Survey (PSS). These data can be used to measure school-level characteristics. Both CCD and PSS have public-use and restricted-use data available.

## Data File Processing and Preparation

The B&B:08/18 restricted-use files include analysis (derived) variables along with source data from the B&B:08/18 survey, previous surveys of the B&B:08 cohort, and administrative data sources. The analysis variables are also available in DataLab, a web-based analysis tool for NCES and other federal data. Users may access DataLab at <https://nces.ed.gov/datalab>.

To protect the confidentiality of sample member information and to minimize disclosure risks, B&B:08/18 data were subject to data swapping, an Institute of Education Sciences Disclosure Review Board-approved perturbation procedure. All respondents were eligible for swapping. Perturbation was carried out under specific, targeted, but undisclosed, swap rates. This process preserved the central tendency estimates but may increase nonsampling error slightly. An extensive data quality check was carried out to assess and limit the impact of swapping. To construct the analysis dataset, data from the B&B:08/18 survey and administrative data sources were edited, recoded, upcoded, and combined to make analysis variables. The resulting variables were extensively reviewed for quality and accuracy. Details about variable construction and sources are available on the restricted-use files and in DataLab.

Missing values in the analysis dataset were imputed for most variables using a weighted sequential hot deck (stochastic) process that replaced missing values with valid values from other respondents (Cox 1980; Iannacchione 1982).

## Weighting and Variance Estimation

Because the B&B:08 cohort is a subset of the NPSAS:08 sample, statisticians derived the weights for analyzing the B&B:08/18 data from the NPSAS:08 student design weights and follow-up data collection design weights. These design weights were adjusted to account for subsampling and nonresponse and were also calibrated to weighted estimates obtained from NPSAS:08 and population estimates.

# Acknowledgments

The authors acknowledge and thank the college graduates who participated in the 2008/18 Baccalaureate and Beyond Longitudinal Study. This study would not have been possible without your willingness to share your time and unique experiences with us.

We would also like to express sincere gratitude to members of the Technical Review Panel. Thank you for contributing your time and expertise to help develop this multi-dimensional study.

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# Chapter 1. Overview of B&B:08/18

This data file documentation details the methods used for the 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) conducted by RTI International on behalf of the U.S. Department of Education's National Center for Education Statistics within the Institute of Education Sciences. It is the third nationally representative follow-up of baccalaureate degree recipients during the 2007–08 academic year, as identified during the 2007–08 National Postsecondary Student Aid Study (NPSAS:08). B&B:08/18 gathers information about the employment, education, and other experiences of these individuals during the 10 years after baccalaureate receipt. Included in this data file documentation is information regarding the collection, processing, and analysis of data collected during a survey of the sample members in the 2018–19 academic year, as well as administrative data. It also provides users with guidance on how to analyze these nationally representative data.

The body of this data file documentation covers the development of B&B:08/18 from its conception through its final data and report products. For a quick start guide to accessing and using the data products, see appendix A. Chapter 1 describes the background and purpose of B&B, reviews the study design, and provides the schedule of major B&B:08/18 activities and products. Chapter 2 describes sampling for the B&B:08 cohort. Chapter 3 describes the data collection process from survey design, to contacting, to survey outcomes (e.g., timing and nonresponse). Chapter 4 outlines the administrative data sources, matching processes, and matching results for B&B:08/18 sample member data. Chapter 5 describes the processing of data files, including the approaches used to ensure data quality and to minimize the risk of disclosing confidential information. Chapter 6 describes the creation of analysis weights, nonresponse bias analysis, and how to estimate variance. Appendix B provides a list of acronyms and abbreviations used throughout the report.

The remaining appendices provide supplementary information about B&B:08/18. Appendix C presents the B&B:08/18 Field-Test Methodological Memo. Appendix D lists the names and affiliations of B&B:08/18 Technical Review Panel (TRP) members. Appendix E consists of facsimiles of the data collection instruments for the B&B:08/18 survey. Appendix F describes the training of interview data collection staff. Appendix G displays the materials used for data collection and contacting. Appendix H introduces the statistical method of event history analysis and describes how it can be used with the B&B, specifically B&B:08/18 data.

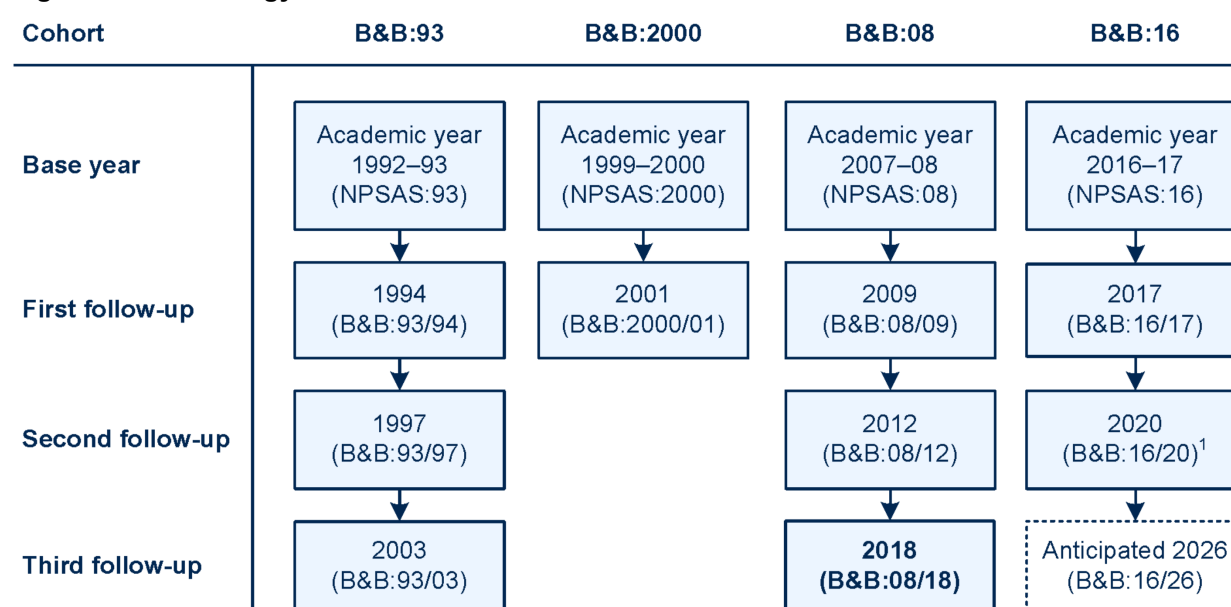
Appendix I reports item response rates and the results of imputation on analysis variables. Appendix J lists the analysis variable names and labels for B&B:08/18. Appendix K reports the unit-level nonresponse bias analysis and item-level nonresponse bias analysis for analysis variables with response rates less than 85 percent. Appendix L presents design effects for selected variables.

## 1.1 Background and Purpose

The B&B study is designed to provide policymakers and researchers with accurate information about postsecondary education and its impact on later life experiences. The legislation authorizing the B&B study is the Higher Education Opportunity Act of 2008, 20 U.S.C. § 1015(a)(k) and the Education Sciences Reform Act of 2002, 20 U.S.C. §§ 9543.

The B&B study has followed four cohorts of baccalaureate degree recipients. Each cohort is identified through the B&B base-year collection, NPSAS. The B&B follow-up rounds are conducted approximately 1, 4, and 10 years after graduation. The study of the first cohort, B&B:93, followed 1992–93 baccalaureate recipients through 2003. The second cohort, B&B:2000, was surveyed once in 2001. B&B:08/18 is the third follow-up of the third cohort, B&B:08. The most recent cohort, B&B:16, was surveyed in 2017 and again in 2020. The B&B:16 cohort will potentially be surveyed for a third time in 2026. Figure 1 shows the configuration of base-year and follow-up collections conducted for each of the four B&B cohorts to date. More information about the B&B studies is available at <https://nces.ed.gov/surveys/b&b>.

**Figure 1. Chronology of B&B studies: 1993–2020**



<sup>1</sup> At the time of publication of this data file documentation, B&B:16/20 was still in production and not yet published.  
NOTE: B&B = Baccalaureate and Beyond Longitudinal Study; NPSAS = National Postsecondary Student Aid Study.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) and 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Primary outcomes measured in B&B include postbaccalaureate education, employment experiences, and student loan debt and repayment. B&B also includes a special focus on those who have been employed as kindergarten through 12th-grade (K–12) teachers. Other important topics include the time it took for the respondent to earn a bachelor’s degree from initial enrollment, family formation, voting and other civic activities, and financial well-being.

The B&B:08/18 survey introduced some new items. Additional information about student loan repayment were collected (ever prepay, ever default, awareness of and participation in income-driven repayment plan). The employment section included new items to collect information about negotiations for salary and benefits. For the first time in a B&B survey, teachers were asked about school leadership and union representation. Additionally, respondents were asked to provide the high school they attended, the date of their last marital status change (in addition to marital status at the time of survey completion) and were asked about their sexual orientation and gender identity. However, most outcomes and many specific measures have been repeated for all four cohorts. Thus, in many instances, results can be compared across two or more cohorts of bachelor’s degree recipients (see, for example, Staklis and Bentz 2016; Staklis and Skomsvold 2014; Woo and Matthews 2012).



## 1.2 Overview of Study Design

To be an eligible member of the B&B:08 cohort, NPSAS sample members must have completed a bachelor's degree at a Title IV eligible postsecondary institution<sup>1</sup> in the 50 States of America, the District of Columbia, or Puerto Rico between July 1, 2007, and June 30, 2008. Among the B&B:08 cohort, seven percent had previously earned a separate bachelor's degree before the 2007–08 academic year (Woo, Green, and Matthews 2012, p. 4 note 1).

As detailed in chapter 2, sample members were first invited to participate in the NPSAS:08 base-year survey in 2008. They were contacted again about 1 year later and 4 years later to participate in the first and second follow-up surveys, respectively. The third follow-up survey, B&B:08/18, was administered to sample members between July 2018 and March 2019.

As mentioned previously, B&B:08 is the third cohort of baccalaureate recipients identified through NPSAS; it succeeds B&B:93 and B&B:2000. The B&B:08 cohort represents the same population as prior B&B cohorts, with two exceptions. First, B&B:93 and B&B:2000 excluded graduates of institutions that only offered correspondence courses,<sup>2</sup> whereas B&B:08 includes graduates of such institutions if the institutions were otherwise eligible for inclusion. Second, B&B:93 included graduates of institutions that were not eligible to participate in Title IV aid programs, whereas B&B:2000 and B&B:08 are limited to graduates of Title IV eligible institutions.

The data collection for B&B:08/18 consisted of a survey and matched administrative records. It incorporated administrative data about sample members from the U.S. Department of Education's Central Processing System (CPS) and National Student Loan Data System (NSLDS) and from the Veterans Benefits Administration (VBA). These data sources are described in greater detail in chapter 4. It also used census tract data to provide regional characteristics of the sample members' reported residence at the time of the survey. Two NCES universe surveys of U.S. elementary and secondary schools were also used: the Common Core of Data (CCD) for public schools and the Private School Universe Survey (PSS) for private schools. CCD and PSS data were used to describe school characteristics for sample members who

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<sup>1</sup> A Title IV eligible institution is an institution that has a written program participation agreement with the U.S. Secretary of Education that allows the institution to participate in any of the Title IV federal student financial assistance programs other than the State Student Incentive Grant and the National Early Intervention Scholarship and Partnership programs.

<sup>2</sup> Correspondence courses are typically distance learning courses completed through print materials and are generally for career or personal development purposes that may or may not be for degree-credit.

graduated from U.S. high schools and to describe characteristics of the workplaces of sample members who taught in U.S. elementary and secondary schools.

## 1.3 Schedule and Products

Table 1 shows the schedule for the major activities of the B&B:08/18 full-scale data collection and products. Field-test activities are outlined in appendix C.

**Table 1. Schedule for the major activities of B&B:08/18: 2018–21**

Activity	Start date	End date
Data collection		
Contact information updates	March 12, 2018	March 25, 2019
Web-based survey	July 12, 2018	March 25, 2019
Outbound telephone interviewing	July 26, 2018	March 25, 2019
Nonresponse conversion efforts	October 15, 2018	March 25, 2019
Data processing	March 26, 2019	January, 2021
First Look reporting preparation	March 26, 2019	October, 2020
DataLab and restricted-use file preparation	March 26, 2019	March, 2021

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

In addition to this data file documentation, *Baccalaureate and Beyond (B&B:08/18): A First Look at the Employment and Educational Experiences of College Graduates, 10 Years Later* is available on the NCES website at <https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2021241>.

B&B data files and associated codebooks are available to researchers who have obtained a restricted-use data license from NCES. To apply for a restricted-use data license, visit the NCES website at <https://nces.ed.gov/statprog/instruct.asp>. Further information on the process for obtaining a restricted-use data license is available in the *NCES Restricted-Use Data Procedures Manual* at <https://nces.ed.gov/statprog/rudman>.

The public may use NCES web tools in the DataLab application, found at <https://nces.ed.gov/datalab>, to review and analyze B&B:08/18 restricted-use data without a restricted-use license. Within DataLab, PowerStats can produce summary statistics and complex tables, as well as estimate regression models. It permits analysis without disclosing micro-level data to the user and suppresses or flags any estimates that fail to meet NCES reporting standards. DataLab also contains the Tables Library, which houses thousands of published analysis tables sortable by topic, publication, and source.

## Chapter 2. Sampling Design

The B&B:08 cohort is designed to study individuals who completed a bachelor's degree at a Title IV eligible postsecondary institution in the 50 States of America, the District of Columbia, or Puerto Rico between July 1, 2007, and June 30, 2008. This chapter describes the B&B:08 cohort's universe and the sample design implemented across NPSAS:08, B&B:08/09, and B&B:08/12 to evaluate eligibility for the B&B:08 cohort through B&B:08/18.

Identification of the B&B:08/18 sample required a multistage process that began with the NPSAS:08 sample of institutions, followed by selection of students within those institutions. Each follow-up data collection involved an additional stage of sampling, which utilized follow-up data to deem sample members ineligible and exclude them from the cohort. Procedures and methods were developed and then refined in consultation with a TRP composed of nationally recognized experts in higher education, NCES staff, and representatives of other federal agencies.<sup>3</sup>

### 2.1 B&B:08 Cohort Universe

The universe for the B&B:08 cohort is composed of the subset of the NPSAS:08 student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008. The NPSAS:08 student universe is described below and requires enrollment at an eligible institution. The definition of the NPSAS:08 institution universe is also presented below.

#### 2.1.1 NPSAS:08 Institution Universe

An eligible institution for NPSAS:08 was required to meet certain criteria during the 2007–08 academic year. They must have

- been eligible to distribute Title IV funds;
- offered an educational program designed for persons who had completed at least a high school education;

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<sup>3</sup> See appendix D for a complete list of TRP participants and their affiliations.

- offered at least one academic, occupational, or vocational program of study lasting at least 3 months or 300 clock hours<sup>4</sup>;
- offered courses that were open to persons other than the employees or members of the company or group (e.g., union) that administers the institution;
- been in the 50 States of America, the District of Columbia, or Puerto Rico; and
- not been a U.S. service academy.

Institutions that provided only vocational, recreational, or remedial courses or only in-house courses for their own employees were excluded. U.S. service academies (the U.S. Air Force Academy, the U.S. Coast Guard Academy, the U.S. Military Academy, the U.S. Merchant Marine Academy, and the U.S. Naval Academy) were also excluded because of the academies' unique funding base.

These institution eligibility conditions are consistent with previous NPSAS administrations with two exceptions. First, requiring eligibility to distribute Title IV aid was implemented in NPSAS:2000 and carried through subsequent collections.<sup>5</sup> Second, NPSAS collections prior to NPSAS:08 excluded institutions that offered only correspondence courses. Beginning with NPSAS:08, collections included such institutions if they were eligible to distribute Title IV student aid.

### **2.1.2 NPSAS:08 Student Universe**

The NPSAS:08 student universe consisted of all eligible students who were enrolled at any time between July 1, 2007, and June 30, 2008, at eligible institutions (see section 2.1.1 above) and who were

- enrolled in either an academic program, at least one course for credit that could be applied toward fulfilling the requirements for an academic degree, or an occupational or vocational program that required at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award;
- not currently enrolled in high school; and

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<sup>4</sup> Clock hours reflect the actual hours of class attendance. Title IV Regulations require clock hour measurement for Title IV if: 1) the school's accrediting agency requires it; 2) School must measure student progress in clock hours when receiving federal or state approval or licensure to offer the program; or 3) completion of clock hours is a requirement for graduates to apply for licensure or the authorization to practice the occupation that the student is intending to practice.

<sup>5</sup> An indicator of Title IV eligibility has been added to the analysis files for prior NPSAS collections to facilitate comparable analyses.

- not solely enrolled in a high school equivalency program.

## 2.2 NPSAS:08 Institution and Student Samples

Because the B&B:08 cohort is a subset of the NPSAS:08 sample, the NPSAS:08 sampling process constituted the first steps in the B&B:08 sampling design. The first NPSAS:08 sampling stage selected institutions, and the second stage selected students from within the sampled institutions. The design is described below.

### 2.2.1 NPSAS:08 Institution Sample

The NPSAS:08 institution universe required characteristics of institutions during the 2007–08 academic year. However, to conduct the study during that academic year, sampling needed to be conducted much earlier. Thus, the first stage of the NPSAS:08 sample design constructed an institution sampling frame from the 2004–05 Integrated Postsecondary Education Data System (IPEDS:2004–05) Institutional Characteristics (IC), Fall Enrollment, and Completions files. The original sample was drawn from these files. Then, when available, the IPEDS:2005–06 IC, Fall Enrollment, and Completions files were used to freshen the sampling frame; approximately 10 newly eligible institutions were added to ensure the frame was representative of NPSAS-eligible institutions in the 2007–08 academic year. The final NPSAS:08 institution sample included 1,960 institutions and was selected from 46 institution strata based on state, control and level of institution, and proportion of bachelor's degrees awarded in education.<sup>6</sup> Table 2 shows the size of the NPSAS:08 institution universe, institution sampling rates, and the number of institutions sampled, by control and level of institution.

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<sup>6</sup> The proportion of bachelor's degrees awarded in education was used to ensure a sufficient sample of these students since this is an important analysis domain for B&B.

**Table 2. NPSAS:08 size of institution universe, sampling rate, and number of institutions sampled, by control and level of institution: 2007–08**

Control and level of institution <sup>1</sup>	Size of universe	Sampling rate <sup>2</sup>	Number of institutions sampled
<b>Total</b>	<b>6,777</b>	<b>0.29</b>	<b>1,960</b>
Public			
Less-than-2-year	247	0.09	20
2-year	1,184	0.38	450
4-year, non-doctorate-granting	341	0.58	200
4-year, doctorate-granting	290	1.00	290
Private nonprofit			
Less-than-4-year	326	0.06	20
4-year, non-doctorate-granting	1,017	0.36	370
4-year, doctorate-granting	591	0.44	260
Private for-profit			
Less-than-2-year	1,476	0.07	100
2-year or more	1,305	0.20	260

<sup>1</sup> Control and level of institution were based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> The sampling rates reported here are summary rates. For more information on the NPSAS:08 sampling design, see the *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (Cominole et al. 2010).

NOTE: Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Of the 1,960 institutions sampled,<sup>7</sup> about 1,940 were eligible to participate in NPSAS:08. Table 3 shows the number of institutions sampled, the number of eligible institutions, and the number and percentages (unweighted and weighted) of eligible institutions providing enrollment lists, by control and level of institution.

<sup>7</sup> All sample sizes in this report are rounded to the nearest 10. Calculations are based on unrounded values. As a result, reported percentages may differ somewhat from those that would result from the reported rounded numbers.

**Table 3. Number of NPSAS:08 sampled and eligible institutions and percentage of institutions providing enrollment lists, by control and level of institution: 2007–08**

Control and level of institution <sup>1</sup>	Sampled institutions	Eligible institutions	Institutions providing enrollment lists		
			Number	Unweighted percent	Weighted percent <sup>2</sup>
<b>Total</b>	<b>1,960</b>	<b>1,940</b>	<b>1,730</b>	<b>89.0</b>	<b>90.1</b>
Control of institution					
Public	960	960	880	91.9	91.2
Private nonprofit	650	640	560	87.4	86.7
Private for-profit	350	340	290	83.6	88.2
Level of institution					
Less-than-2-year	130	120	100	82.6	83.2
2-year	570	560	510	89.7	90.7
4-year, non-doctorate-granting	700	700	630	89.7	91.9
4-year, doctorate-granting	560	560	500	88.8	88.6
Control and level of institution					
Public					
Less-than-2-year	20	20	20	90.9	93.2
2-year	450	450	410	91.7	91.2
4-year, non-doctorate-granting	200	200	190	94.4	95.4
4-year, doctorate-granting	290	290	260	90.7	89.2
Private nonprofit					
Less-than-4-year	20	20	20	84.2	84.7
4-year, non-doctorate-granting	370	370	320	88.2	87.9
4-year, doctorate-granting	260	260	230	86.5	85.9
Private for-profit					
Less-than-2-year	100	90	70	80.4	81.0
2-year or more	260	250	210	84.8	90.2

<sup>1</sup> Control and level of institution were based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

## 2.2.2 NPSAS:08 Student Sample

The second stage of the NPSAS:08 sample design was the selection of a sample of students from the sampled institutions. Each eligible sampled institution was asked to provide a complete list of students enrolled from July 1, 2007, through April 30, 2008,<sup>8</sup> who satisfied all student NPSAS:08 eligibility conditions. These lists included information to conduct matching to administrative records, classify students by

<sup>8</sup> To not delay data collection, enrollment lists covered the period of July 1, 2007, through April 30, 2008. The date of April 30 was selected to include virtually all students enrolled prior to the summer term.

sampling strata, and locate students to conduct the student survey. Specifically, the data items requested were as follows:

- name;
- date of birth;
- Social Security number (SSN);
- student ID number (if different from SSN);
- student level (undergraduate, master's, doctoral, other graduate, first-professional<sup>9</sup>);
- Classification of Instructional Programs (CIP) code or major; and
- locating information (local and permanent street address, phone number, and school and home e-mail address).

Sample members were sorted into 20 strata so that over- or undersampling could occur for those specific subgroups of students. NPSAS:08 oversampled potential baccalaureate recipients to allow a sufficient sample size for the B&B:08 cohort and stratified them separately from other undergraduate students. Business majors make up a high proportion of baccalaureate recipients. Therefore, to ensure that the sample did not consist largely of business majors, they were undersampled among potential baccalaureate recipients. Additionally, science, technology, engineering, and mathematics (STEM) majors, National Science and Mathematics Access to Retain Talent (SMART) Grant recipients, and Academic Competitiveness Grant (ACG) recipients were oversampled to obtain enough students in these important subgroups for analysis. Further, within institutions that awarded proportionally higher numbers of bachelor's degrees in education, baccalaureate recipients were oversampled to ensure sufficient sample sizes of prospective K–12 teachers for analysis. The 20 strata were defined as follows:

1. in-state potential baccalaureate recipients who were business majors;
2. out-of-state potential baccalaureate recipients who were business majors;
3. in-state potential baccalaureate recipients who were STEM majors and SMART Grant recipients;
4. out-of-state potential baccalaureate recipients who were STEM majors and SMART Grant recipients;

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<sup>9</sup> A first-professional student is a student who is enrolled in one of the following degree programs: chiropractic, dentistry, law, medicine, optometry, osteopathic medicine, pharmacy, podiatry, ministry or divinity, or veterinary medicine.



5. in-state potential baccalaureate recipients who were STEM majors and not SMART Grant recipients;
6. out-of-state potential baccalaureate recipients who were STEM majors and not SMART Grant recipients;
7. in-state potential baccalaureate recipients in all other majors who were SMART Grant recipients;
8. out-of-state potential baccalaureate recipients in all other majors who were SMART Grant recipients;
9. in-state potential baccalaureate recipients in all other majors who were not SMART Grant recipients;
10. out-of-state potential baccalaureate recipients in all other majors who were not SMART Grant recipients;
11. in-state other undergraduate students who were SMART Grant recipients;
12. out-of-state other undergraduate students who were SMART Grant recipients;
13. in-state other undergraduate students who were ACG recipients;
14. out-of-state other undergraduate students who were ACG recipients;
15. in-state other undergraduate students who were neither SMART Grant nor ACG recipients;
16. out-of-state other undergraduate students who were neither SMART Grant nor ACG recipients;
17. master's degree students;
18. doctoral degree students;
19. other graduate students; and
20. first-professional students.

Initial student sampling rates were calculated for each institution list, using sampling rates designed to approximately equal probabilities of selection within institution-by-student sampling strata. The sample of 137,800 students was then selected via stratified systematic sampling. For more detailed information regarding the NPSAS:08 institution and student sample designs, see section 2.1 of the *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (Cominole et al. 2010).

### 2.2.3 NPSAS:08 Study Members

The NPSAS:08 sampling procedures resulted in the selection of 137,800 students, but 5,000 were determined to be ineligible either during the survey or from institution records (table 4). Upon completion of data collection, 96 percent of the NPSAS-eligible students were determined to have sufficient data to meet the definition of a study member (or study respondent).<sup>10</sup> Study members were defined as any eligible sample member for whom, at a minimum, the following data were available from any source:

- student type (undergraduate or graduate/first-professional);
- date of birth (or age);
- sex; and
- at least 8 of the following 15 variables:
  - dependency status,
  - marital status,
  - any dependents,
  - income,
  - expected family contribution,
  - degree program,
  - class level,
  - baccalaureate status (whether student expected to complete bachelor's degree in 2007–08),
  - months enrolled,
  - tuition,
  - received federal aid,
  - received nonfederal aid,
  - student budget,
  - race, and
  - parent education.

Table 4 shows the number of students sampled, the number of eligible students, and the unweighted and weighted rates of study membership, by control and level of their sampled institution.

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<sup>10</sup> The term *study member* was introduced in NPSAS:12 to refer to sample members for whom there was sufficient data across all sources to support the collection's analytic objectives. It is used here in lieu of the term *study respondent*, as employed in the NPSAS:08 documentation, to facilitate comparison with NPSAS:16 and the B&B:16 cohorts.

**Table 4. Number of sampled and eligible NPSAS:08 sample members and percentage of NPSAS:08 study members, by control and level of sampled institution: 2007–08**

Control and level of sampled institution <sup>1</sup>	Sampled students	Eligible students	NPSAS:08 study members	
			Unweighted percent of eligible	Weighted percent of eligible <sup>2</sup>
<b>Total</b>	<b>137,800</b>	<b>132,800</b>	<b>96.2</b>	<b>95.7</b>
Control of institution				
Public	87,470	84,240	95.3	94.9
Private nonprofit	32,760	31,950	97.7	97.3
Private for-profit	17,570	16,610	97.6	98.5
Level of institution				
Less-than-2-year	8,820	7,950	95.0	96.7
2-year	43,460	40,770	93.3	92.5
4-year, non-doctorate-granting	37,930	37,140	97.8	97.6
4-year, doctorate-granting	47,590	46,940	97.6	97.6
Control and level of institution				
Public				
Less-than-2-year	1,730	1,480	90.0	88.9
2-year	39,340	37,010	92.8	92.2
4-year, non-doctorate-granting	16,120	15,850	98.0	98.1
4-year, doctorate-granting	30,280	29,910	97.3	97.4
Private nonprofit				
Less-than-4-year	2,080	1,790	97.0	97.7
4-year, non-doctorate-granting	14,200	13,930	97.3	96.8
4-year, doctorate-granting	16,480	16,230	98.0	97.8
Private for-profit				
Less-than-2-year	6,610	6,050	96.1	97.6
2-year or more	10,960	10,560	98.5	98.7

<sup>1</sup> Control and level of sampled institution were based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: A NPSAS:08 study member was defined as any eligible sample member for whom sufficient data were obtained from any source. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

## 2.3 First Follow-up Sampling (B&B:08/09)

Data collected during NPSAS:08 were utilized during preparation for the first follow-up, B&B:08/09, to identify potential B&B:08 cohort members. Identification and subsequent sampling procedures are described below.

### 2.3.1 B&B:08 Cohort Eligibility

NPSAS:08 sample members to be included in the B&B:08 cohort were identified through three mechanisms in the following order: (1) the student identified as having received a bachelor's degree during the 2007–08 academic year in the NPSAS:08

student survey; (2) student records provided by the institution identified the student as a baccalaureate recipient; or (3) the institution identified the student as a potential baccalaureate recipient on the enrollment list. If one source did not confirm eligibility, the subsequent source was considered. Through these mechanisms, 25,050 NPSAS:08 sample members were identified as potential members of the B&B:08 cohort. Table 5 shows the number and distribution of the potential cohort members, by source.

**Table 5. Number and percentage of potential B&B:08 cohort sample members, by source: 2009**

Source	Number	Percent
<b>Total</b>	<b>25,050</b>	<b>100</b>
Bachelor's degree confirmed in NPSAS:08 survey	18,000	71.9
Bachelor's degree confirmed in institution records	4,630	18.5
Potential bachelor's degree recipient in enrollment list	2,420	9.7

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) and 2008/09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

### 2.3.2 B&B:08 Cohort Sampling Design

Because NPSAS:08 sampling occurred much earlier than the 2007–08 academic year of interest for the cohort, some individuals' eligibility statuses remained in question at the time of the B&B:08/09 sampling efforts. Therefore, the primary goal of the B&B:08/09 sample design was to maximize the likelihood of sampling eligible students for whom baccalaureate receipt could be confirmed.

All 18,000 NPSAS:08 survey respondents who identified themselves as bachelor's degree recipients were included in the B&B:08 cohort sample. An additional 5,150 NPSAS:08 survey nonrespondents were determined to be eligible based on administrative data. The 5,150 NPSAS:08 survey nonrespondents were stratified by their NPSAS:08 study membership status, and B&B eligibility status from extant data sources (transcripts from the baccalaureate degree-granting institution, NSC status, and institution records status). From this set, 500 NPSAS:08 survey nonrespondents were subsampled for an initial B&B:08/09 sample total of 18,500. Table 6 shows the distribution of the potential baccalaureate recipients who were NPSAS:08 survey nonrespondents and the subsample size for each stratum.

**Table 6. Number, subsample size, and percentage of NPSAS:08 survey nonrespondents potentially eligible for the B&B:08 cohort, by NPSAS:08 study membership and data source availability: 2009**

NPSAS:08 study membership	Data source availability			NPSAS:08 survey nonrespondents potentially eligible for the B&B:08 cohort		
	Transcript	NSC	Institution records	Number	Subsample size	Percent
<b>Total</b>	<b>†</b>	<b>†</b>	<b>†</b>	<b>5,150</b>	<b>500</b>	<b>9.7</b>
Yes	Yes	Yes	Yes	1,570	180	11.3
Yes	Yes	Yes	No	350	40	11.3
Yes	Yes	No	Yes	1,510	170	11.3
Yes	Yes	No	No	500	50	9.9
Yes	No	Yes	Yes	120	10	5.1
Yes	No	Yes	No	60	#	5.4
Yes	No	No	Yes	370	20	5.1
Yes	No	No	No	250	10	5.1
No	Yes	Yes	Yes	60	#	5.5
No	Yes	Yes	No	80	#	5.1
No	Yes	No	Yes	80	#	5.3
No	Yes	No	No	120	10	5.2
No	No	Yes	Yes <sup>1</sup>	10	#	#
No	No	Yes	No <sup>1</sup>	20	#	#
No	No	No	Yes <sup>1</sup>	20	#	#
No	No	No	No <sup>1,2</sup>	50	#	#

† Not applicable.

# Rounds to zero.

<sup>1</sup> Students who were not NPSAS:08 study members and did not have transcripts, but who were potentially eligible based on institutional enrollment data reported to the National Student Clearinghouse (NSC), institution records, or the enrollment list, were combined into one stratum for sampling purposes.<sup>2</sup> NPSAS:08 survey nonrespondents who did not have any data sources available were identified as potential bachelor's degree recipients by the NPSAS institution on the enrollment list submitted for sampling.NOTE: NSC contains information on students' institutions attended, enrollment dates, and degree completions. For more information on NSC participation, visit <https://www.studentclearinghouse.org>. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) and 2008/09 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/09).

Because the B&B:08/09 survey data collection was supplemented with a postsecondary transcript collection, an analysis weight was created for each collection as well as a joint analysis weight. A B&B:08/09 *survey respondent*<sup>11</sup> was defined as any sample member who completed the full or abbreviated B&B:08/09 survey. (Partial survey completers were considered B&B:08/09 respondents if they completed at least the first two sections of the survey.) Survey respondents were assigned analysis weight WTA000. A *student transcript respondent* was defined as any sample member who had a transcript provided by their NPSAS:08 institution. Transcript respondents were assigned analysis weight WTB000. A *combined survey and*

<sup>11</sup> Throughout this data file documentation, the term *survey* refers to any administration of questions to sample members, and *interview* specifically refers to administration of the questions by a telephone interviewer. The term *survey respondent* is used here in lieu of the term *interview respondent*, as employed in documentation for prior B&B:08 cohort data collections, to maintain consistency.

*transcript respondent* was both a survey respondent and a transcript respondent. Combined survey and transcript respondents were assigned analysis weight WTC000.

Table 7 shows details of the B&B:08 cohort sample through the B&B:08/09 data collection, including the total number of sample members, the number of eligible sample members after excluding those identified to be ineligible during data collection, and the unweighted and weighted response rates, by control of institution, for the survey, transcripts, and the combined survey and transcript respondent definitions. See the *2008/09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09) Data File Documentation* for additional details on B&B:08/09 sampling (Wine et al. 2013).

**Table 7. Number of sampled and eligible B&B:08/09 sample members and number and percentage of B&B:08/09 respondents, by respondent definition and control of baccalaureate-granting institution: 2009**

Respondent definition and control of baccalaureate-granting institution <sup>1</sup>	Sample members	Eligible sample members	B&B:08/09 respondents		
			Number	Unweighted percent of eligible	Weighted percent of eligible <sup>2</sup>
Survey respondents <sup>3</sup>					
All respondents	18,500	17,160	15,050	87.7	78.3
Public	10,810	9,910	8,680	87.5	79.1
Private nonprofit	6,750	6,360	5,610	88.2	77.9
Private for-profit	940	890	760	85.5	69.6
Student transcript respondents <sup>4</sup>					
All respondents	18,500	17,160	16,070	93.6	92.3
Public	10,810	9,910	9,360	94.4	93.0
Private nonprofit	6,750	6,360	5,860	92.1	90.4
Private for-profit	940	890	860	96.3	96.3
Combined survey and transcript respondents <sup>3,4</sup>					
All respondents	18,500	17,060	14,010	82.2	73.1
Public	10,810	9,840	8,150	82.8	74.4
Private nonprofit	6,750	6,330	5,140	81.2	71.2
Private for-profit	940	890	730	82.1	68.3

<sup>1</sup> Control and level of baccalaureate-granting institution were based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

<sup>3</sup> A B&B:08/09 survey respondent was defined as any sample member who completed the full or abbreviated B&B:08/09 survey. (Partial survey completers were considered B&B:08/09 survey respondents if they completed at least the first two sections of the survey.)

<sup>4</sup> A student transcript respondent was defined as any sample member who had a transcript provided by their baccalaureate-granting institution.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09).

## 2.4 Second Follow-up Sampling (B&B:08/12)

The B&B:08/12 sample consisted of all B&B:08/09 eligible respondents and all B&B:08/09 nonrespondents, totaling 17,160 individuals. During the B&B:08/12 data collection, an additional 50 individuals were identified as either deceased or ineligible; thus, the eligible B&B:08/12 sample totaled 17,110.

There were three types of analysis weights created for B&B:08/12, reflecting various patterns of response to data collection rounds. A *bookend respondent* was defined as any NPSAS:08 study member who had completed the full or abbreviated B&B:08/12 survey. (Partial survey completers were considered bookend respondents if they provided employer-level information [e.g., dates employed, earnings, and hours worked] for at least one employer.) Bookend respondents were assigned the analysis weight WTD000. A *panel respondent* refers to a sample member who was both a bookend respondent and a B&B:08/09 survey respondent (see section 2.3.2). Panel respondents were assigned the analysis weight WTE000. A *transcript panel respondent* was a panel respondent who also had a transcript provided by the NPSAS:08 institution. Transcript panel respondents were assigned the analysis weight WTF000.

Table 8 shows the number of sampled, eligible, and responding individuals, along with the unweighted and weighted response rates, by control of the NPSAS:08 institution for each respondent definition. See the *2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12) Data File Documentation* for additional details on B&B:08/12 sampling (Cominole, Shepherd, and Siegel 2015).

**Table 8. Number of sampled and eligible B&B:08/12 sample members and number and percentage of B&B:08/12 respondents, by respondent definition and control of baccalaureate-granting institution: 2012**

Respondent definition and control of baccalaureate-granting institution <sup>1</sup>	Sample members	Eligible sample members	B&B:08/12 respondents		
			Number	Unweighted percent of eligible	Weighted percent of eligible <sup>2</sup>
Bookend respondents <sup>3</sup>					
All respondents	17,160	17,110	14,560	85.1	77.1
Public	9,910	9,880	8,450	85.5	78.3
Private nonprofit	6,360	6,340	5,390	84.9	74.5
Private for-profit	890	890	720	80.7	78.1
Panel respondents <sup>3,4</sup>					
All respondents	17,160	17,110	13,490	78.8	68.2
Public	9,910	9,880	7,820	79.1	69.7
Private nonprofit	6,360	6,340	5,020	79.1	66.4
Private for-profit	890	890	660	73.8	60.6
Transcript panel respondents <sup>3,5</sup>					
All respondents	17,160	17,010 <sup>6</sup>	12,570	73.9	64.1
Public	9,910	9,810	7,350	74.9	65.7
Private nonprofit	6,360	6,310	4,590	72.8	61.8
Private for-profit	890	880	630	71.4	59.6

<sup>1</sup> Control and level of baccalaureate-granting institution were based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

<sup>3</sup> A bookend respondent was defined as any NPSAS:08 study member who had completed the full or abbreviated B&B:08/12 survey. (Partial survey completers were considered respondents if they provided employer-level information [e.g., dates employed, earnings, and hours worked] for at least one employer.)

<sup>4</sup> A panel respondent refers to a sample member who was both a bookend respondent and a B&B:08/09 survey respondent. A B&B:08/09 survey respondent was defined as any sample member who completed the full or abbreviated B&B:08/09 survey. (Partial B&B:08/09 survey completers were considered B&B:08/09 survey respondents if they completed at least the first two sections of the survey.)

<sup>5</sup> A transcript panel respondent was a panel respondent who also had a transcript provided by the NPSAS:08 institution.

<sup>6</sup> The number of eligible students for the transcript panel respondent definition differs from the counts for the bookend and panel definitions due to perturbation procedures.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

## 2.5 Third Follow-up Sampling (B&B:08/18)

Prior to the B&B:08/18 data collection, the B&B:08/18 sample consisted of all eligible B&B:08/12 respondents and all B&B:08/12 nonrespondents, totaling 17,110 individuals. During data collection, approximately 50 individuals were identified as either deceased or ineligible. Therefore, the *eligible sample* for B&B:08/18 consists of 17,070 individuals.

Of the eligible sample, 14,670 individuals (86 percent) were considered B&B:08/18 respondents. These individuals were NPSAS:08 study members who completed either a full, abbreviated, or mini B&B:08/18 survey. (See section 3.2.4 for more



information on survey types.) Partial B&B:08/18 survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers. Table 9 shows the number of individuals sampled, the number of eligible individuals, and the unweighted and weighted response rates, by control of the baccalaureate-granting institution. Information regarding additional respondent definitions and the associated weights is presented in section 6.1.

**Table 9. Number of sampled and eligible B&B:08/18 sample members and number and percentage of B&B:08/18 respondents, by control of baccalaureate-granting institution: 2018**

Control of baccalaureate-granting institution <sup>2</sup>	Sample members	Eligible sample members	B&B:08/18 respondents <sup>1</sup>		
			Number	Unweighted percent of eligible	Weighted percent of eligible <sup>3</sup>
<b>Total</b>	<b>17,110</b>	<b>17,070</b>	<b>14,670</b>	<b>86.0</b>	<b>78.9</b>
Public	9,880	9,860	8,520	86.4	79.9
Private nonprofit	6,340	6,330	5,460	86.3	78.1
Private for-profit	890	880	690	78.7	70.3

<sup>1</sup> A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers.

<sup>2</sup> Control of baccalaureate-granting institution was based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>3</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Chapter 3. Survey and Data Collection Design, Outcomes and Evaluation

This chapter describes selected aspects of the B&B:08/18 survey, beginning with development of data elements and an overview of data collection systems. It then details the process of locating, tracing, and contacting sample members, including staffing and managing the various phases of data collection. Next, it describes the processes used to ensure quality throughout the data collection. It presents the results of efforts to locate and gain participation of sample members. Finally, it presents evaluations of several aspects of the survey's functionality, including the time required to complete the survey by section, the completion rates of predictive coding forms, and response rates for specific items.

### 3.1 Survey Design and Data Collection Systems

This section first outlines how data elements were selected and refined for the survey. Next, it summarizes the structure of survey forms and items and then describes how the survey utilized predictive coding systems, or “coder forms,” to help respondents assign a standardized code to items such as the postsecondary institutions they attended and the occupations they held. It concludes by describing the systems used to facilitate data collection, record responses, and measure interviewer quality.

The B&B:08/18 survey was designed to collect and update data elements such as postsecondary enrollment and employment information, as well as key demographic information for sample members. It incorporated longstanding items from past B&B surveys with a focus on sample members' workforce participation, income and debt repayment, and entry into and persistence through graduate school programs. In addition to these recurring items, the survey included the following new data elements:

- missed student loan payments;
- default on federal and private student loans;
- participation in income-driven repayment programs;
- salary and benefits negotiation;
- receipt of unemployment compensation or disability benefits;

- teachers' support from school leadership;
- teachers' union representation;
- sexual orientation; and
- gender identity.

Survey items associated with these new data elements were evaluated through cognitive testing and administered in the B&B:08/18 field test survey (see appendix C). The items were further developed and refined with input from the study's TRP—composed of nationally recognized experts in higher education, NCES staff, and representatives of other federal agencies. For a list of TRP members and their affiliations, see appendix D.

The survey consisted of seven total sections—five key content areas, the Résumé Collection, and the Incentive Offering. A brief overview of data elements in each content area section follows:

**Postbaccalaureate Education.** Items in the Postbaccalaureate Education section collected information about any postsecondary enrollment after respondents earned their bachelor's degrees. For B&B:08/12 survey respondents, these items covered the time frame since beginning the B&B:08/12 survey. For B&B:08/12 nonrespondents, the items covered the time frame since earning their bachelor's degree. Data elements collected about degree and certificate programs included the institution attended, dates of enrollment, degree type, major or field of study, degree completion and award dates, online program enrollment and coursetaking, and financial aid sources. Postbaccalaureate Education questions also asked for information about nondegree coursework and receipt of vocational or technical certificates and diplomas.

**Debt and Repayment.** The Debt and Repayment items asked about total loan amounts borrowed since bachelor's degree completion, repayment statuses, private loan amounts, and monthly payments when applicable. This section also collected information on prepaying or missing payments on both federal and private student loans in the last 12 months, ever defaulting on a student loan, and enrollment in income-driven repayment programs.

**Employment.** The Employment items asked about paid employment since the B&B:08/12 survey date. This section collected information on full-time and part-time employment, graduate assistantships, and self-employment. Those who had been employed at any time since completing their bachelor's degrees were asked a series of questions about each of their employers, including name, employment dates, starting and ending earnings and hours worked per week. This section also

asked respondents for additional details about specific employers (up to three), including occupation, employer type, industry, benefits, autonomy and flexibility of employer, and job satisfaction. Finally, Employment items asked respondents about job searches and activities while not working, salary and benefits negotiation, and other career-related items.

**Teaching.** The Teaching items identified K–12 teachers and asked about their current and past teaching experience. Much of the section consisted of questions for respondents who had taught at the K–12 level since they were last surveyed. These questions included the name of the school, certification type, grades and subjects taught, and content area certifications. This section included questions about experiences as a K–12 teacher, level of satisfaction with specific aspects of teaching, plans for staying in teaching and for moving into other education-related positions, and awareness of teacher loan forgiveness programs. New teachers were asked to report their perceived level of preparation for teaching. Former teachers were asked about their reasons for leaving teaching, and teachers who changed schools were asked about reasons for the move to a different school.

**Background.** The Background items asked for demographic details such as citizenship, military status, sex, gender identity, and sexual orientation. Additional data elements included the number of dependents; when respondents became financially responsible for each dependent; monthly expenses including those for childcare, rent or mortgage payments, vehicle payments, and credit cards; annual income for calendar year 2017; and retirement account contributions. For respondents with a spouse or partner, this section also collected information on the spouse’s or partner’s level of education, employment status, 2017 annual income, and enrollment during the 2018–19 academic year; the amount the spouse or partner received in and owed on federal student loans; and the spouse’s or partner’s monthly student loan payment amount. The section also asked respondents about their volunteer and voting activity, their level of financial stress, and how they were affected by the cost of education.

For more information on the Résumé Collection and Incentive Offering survey sections, see section 3.2.5 and section 3.2.4, respectively. A facsimile of the full survey is available in appendix E.

### 3.1.1 *Survey Mode of Administration*

The B&B:08/18 survey was a multimodal instrument designed for the Web and telephone. Web survey mode was further categorized by device type, web nonmobile and web mobile. Nonmobile devices include desktops or laptops, compared to

mobile devices such as a smartphone or tablet. To distinguish web nonmobile respondents from web mobile respondents, the survey instrument recorded the rendering of the survey (e.g., how the instrument displayed on the respondent's browser) and parsed the user agent string to obtain information about device type, browser name, and touch-screen capability. In all modes, respondents were routed through the survey based on information they reported earlier in the B&B:08/18 survey or prior survey rounds. A mini survey, described in more detail in section 3.2.4, was also developed for paper administration.

As described above, the survey was sectioned by content area. The web-based survey instrument consisted of forms and items. A *form* is a “screen” or “page” that can include one or more items. An *item* is a single response option (e.g., checkbox) or set of response options (e.g., radio-button list). Survey forms displayed question wording and response options (items), question-specific help text, and navigation buttons. The submit button must be clicked to advance to the next form. To minimize the effects survey mode may have on responses, the following features were included to provide web respondents with the assistance otherwise provided by a trained telephone interviewer:

- help text on every form to define key terms and clarify question intent;
- pop-up messages to correct responses that were out of the valid range or in an incorrect format;
- pop-up messages to encourage responses to critical questions left unanswered; and
- pop-up messages prompting respondents to provide a response when they left three consecutive forms unanswered.

Respondents were able to provide survey responses in any mode they preferred. If a respondent exited the survey without completing it (i.e., broke off), they were able to continue the survey in any mode, exactly where they left off. For the purposes of this data file documentation, the mode of completion assigned to a B&B:08/18 respondent is the mode associated with their final session. For survey response results by mode of completion, see section 3.4.2.

### 3.1.2 Survey Response Coding Systems

Predictive coding systems, or “coder forms,” were used to help respondents assign a code to standardized data elements such as postbaccalaureate institutions, majors for postbaccalaureate education, zip codes of employers and primary residence, occupations, and K–12 schools. For each coder form, respondents entered their

answer as a text string. As respondents typed, a keyword search of an underlying database returned a list of possible matches that were displayed in a dropdown menu for respondents to select. For example, if a respondent described the field of study for a graduate degree program as “data science,” the form would search the underlying database for a possible match, and “coding” would consist of selecting the intended major from a drop-down menu, such as Computational Science (30.3001), Information Science/Studies (11.0401), or Management Science, General (52.1301). (Section 3.5.1 presents an analysis of each coder form’s coding rate.) If the respondent did not code the text string, the instrument would record it (e.g., “data science”) for processing during data editing. Section 5.2 presents an explanation of how the data editing team assigned codes to text strings that the respondent (or telephone interviewer) did not code. Following are brief descriptions of the five coder forms and the underlying databases for each:

- The postbaccalaureate institution coder form (applicable to all postbaccalaureate institutions attended) was linked to the complete set of institutions contained in IPEDS:2015–16 (<https://nces.ed.gov/ipeds>). As respondents typed in their institution’s name, this coder form helped assign an IPEDS ID. For institutions not found in the database, the instrument saved any original text entered and prompted respondents (or telephone interviewers) to provide the control and level of the institution, as well as the city and state in which the institution was located.
- The major or field of study coder form used the 2010 CIP taxonomy developed by NCES (<https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=56>) to assign a CIP code to each reported degree program. For any major or field of study not found in the CIP database, the instrument saved any entered text strings and asked respondents (or telephone interviewers) to select a general area of study and a specific discipline within that area.
- The employer and primary residence zip code coder forms were built from the ZIPList5 Max database (<https://zipinfo.com/products/z5max/z5max.htm>). The instrument searched the database using the zip code or city and state entered by the respondent (or telephone interviewer). Entered strings were saved for any zip codes not found in the database.
- The occupation coder form linked respondents’ occupation titles to occupation codes using Version 22.0 of the Occupational Information Network-Standard Occupational Classification (O\*NET-SOC) database (<https://onetonline.org>), which utilizes the 2010 SOC taxonomy

(<https://www.bls.gov/soc/2010/home.htm>). For any occupation titles not found in the database, the instrument saved the entered text string and asked respondents (or telephone interviewers) to provide a general area, specific area, and a detailed classification for the occupation. Respondents who were not able to code their occupation from the returned results were also asked to briefly describe their job duties.

- The K–12 school and high school coder forms were linked to all schools available through PSS for private K–12 schools (<https://nces.ed.gov/surveys/pss>) and CCD for public K–12 schools (<https://nces.ed.gov/ccd>). This coder form assigned an NCES school ID to respondents' high schools and all schools where respondents taught K–12. For schools not identified by the K–12 coder form, the survey recorded the school name as a text string and asked respondents (or telephone interviewers) to also provide the school control, district or county name, and the highest and lowest grade levels offered at the school.

### 3.1.3 *Survey Design Systems and Data Collection Systems*

The B&B:08/18 data collection systems were used to develop the survey instrument, contact sample members, automate e-mail and text reminders, report data collection progress, and evaluate interviewer performance.

The B&B:08/18 survey instrument was created and developed for review, testing, and subsequent modifications using a proprietary web-based system, Hatteras. All instrument design specifications were stored in a Structured Query Language (SQL) database via the survey editor interface. When published to the web server, the survey forms were dynamically rendered so that the content of each form, question routing, and valid ranges reflected all previous responses. Likewise, the survey's appearance was automatically adjusted to fit the screen size of the respondent's computer, mobile phone, or other device. Both self-administered web surveys (nonmobile and mobile) and telephone interviews used the same Hatteras survey instrument to collect data.

The proprietary case management system used by telephone interviewers, the computer-assisted telephone interviewing case management system (CATI-CMS), managed all sample member locating information and all activity related to outbound and inbound calls. Any contact updates, including new telephone numbers, were added to CATI-CMS as they were identified via batch tracing services or intensive tracing methods. See section 3.2.3 for more information on tracing operations. All new information was immediately available for use in e-mail, text, or mail reminders.

For the purposes of data collection, an individual sample member and all their associated contact and locating information is called a *case*.

The CATI-CMS also facilitated telephone interviews by assigning cases to interviewers by prior contact status (e.g., cases that had been recently contacted or had never been contacted), best day and time to call, and previously scheduled appointments. Sample members who had previously refused to participate were placed into a separate queue to be contacted by telephone interviewers who had been specifically trained in refusal conversion techniques designed to encourage sample members to complete the survey after a refusal. The system also automatically ordered cases to call by prioritizing the sample members most likely to respond. Telephone numbers were reprioritized based on new contact information as it became available.

Similarly, all e-mail and texting applications delivered personalized, automated reminders by incorporating the latest contacting and survey progress updates. Data collection activities were monitored via real-time reports as well as daily reporting of survey completion, response, timing, and trend analysis.

A proprietary quality evaluation system facilitated interviewer performance monitoring. Protocols for evaluating interviewer performance were used in real time while an interview was being performed or through recordings after the survey had been administered. The quality evaluation system supported all phases of telephone interviewer quality monitoring including selecting interviews, observing interviewers' work, evaluating interviewer performance, providing feedback, and analyzing performance data across interviewers to identify cross-cutting instrument or performance issues.

## 3.2 Survey Data Collection

The B&B:08/18 data collection study website and help desk offered information and support to sample members. Sample members could complete the survey independently on the Web, over the telephone with a trained interviewer, or, in some cases, by completing a paper survey and returning it by mail. Interviewers completed extensive training on interviewing processes and protocols; staff were also trained on locating, tracing, and contacting procedures to ensure efficiency and consistency.

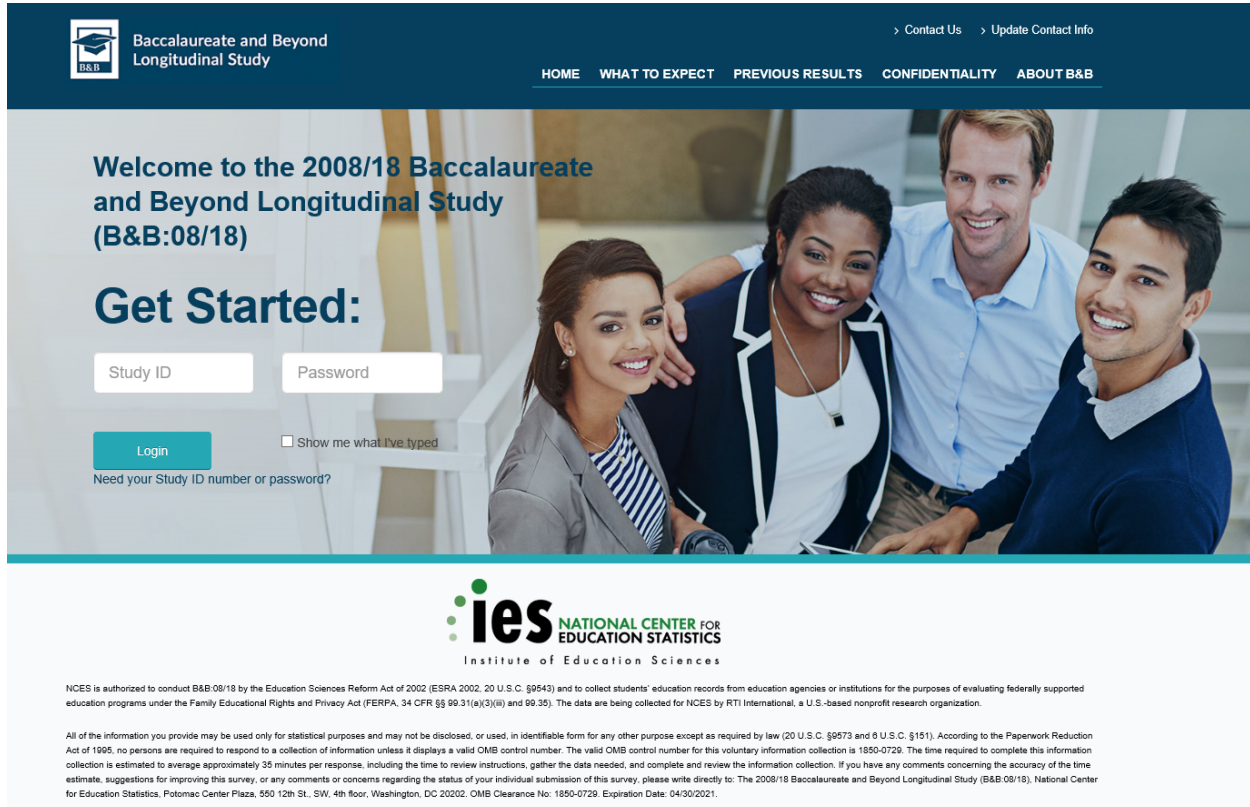
### 3.2.1 Study Website and Help Desk

Communications with sample members included a link to the B&B:08/18 website, which provided general information about the study, details about the study sponsor,



how the data would be used, answers to frequently asked questions (FAQs), information security, and selected findings from previous B&B data collections. The website also included contact information for the study help desk and project staff at RTI and links to the main NCES and RTI websites. Sample members could log in to the secure section of the website to complete the survey. Figure 2 shows a screenshot of the B&B:08/18 website home page.

**Figure 2. Home page for B&B:08/18 website: 2018**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

The website—designed according to NCES web policies—used a three-tier security approach to protect all collected data. The first tier of protection provided secure logins, with a unique ID and a unique strong password to sample members before data collection began. The second tier of security protected any data entered on the website with Secure Sockets Layer (SSL) technology, allowing only encrypted data to be transmitted over the Internet. The third tier of security stored survey responses in a secured SQL Server database housed on a machine that was separate from the web server.

B&B:08/18 telephone interviewers also served as help-desk staff and responded to sample members' questions related to technical issues or completing the web survey. If technical difficulties prevented sample members from completing the web survey, the interviewers were available as help-desk staff to respond to question, solve technical issues, or complete a telephone interview. For each call received, staff confirmed contact information for the sample member for security purposes and recorded a description of the problem and resolution in a shared database. Two common types of help-desk incidents were requests to retrieve the ID or password and requests to complete the survey over the telephone. To minimize the need for telephone log-in assistance, a link on the website allowed sample members to indicate they needed log-in information. After sample members entered a few pieces of identifying information, their ID and password were automatically sent to them via e-mail.

### **3.2.2 Training of Interview Data Collection Staff**

Before B&B:08/18 data collection, all data collection staff completed a general training program that covered telephone interviewing techniques (e.g., proper enunciation and pace of speech), contacting procedures, an overview of the systems used to conduct their work, confidentiality procedures, and sample member rights. To best serve sample members and ensure collection of high-quality data, the data collection team consisted of various positions, each serving specific roles.

**Telephone interviewers** were the primary point of contact with sample members and functioned as help-desk agents. All interviewers who worked on B&B:08/18 had previously worked on the B&B:16/17 data collection. Their responsibilities included conducting telephone interviews, responding to sample members' concerns, providing technical assistance, and averting or converting refusals by using strategies outlined in training. The interviewer training provided an overview of B&B:08/18 and confidentiality procedures; a review of the survey instrument, including training and practice with each coder form; practice with CATI-CMS; guidance on providing technical support; and professional interviewing techniques, including refusal conversion. A subset of interviewers was further trained in refusal conversion techniques. Training materials (see appendix F) contained an interviewing manual, guidelines for survey administration, and answers to FAQs. To ensure interviewers could provide appropriate and accurate responses to B&B:08/18 FAQs, project staff certified them for work on B&B:08/18 after observing and approving performance during a mock interview.

**Quality control supervisors** monitored interviewer performance and production, provided guidance to interviewers, and helped troubleshoot problems. The

supervisors also attended interviewer trainings to assist interviewers and facilitate future trainings.

**Quality experts** monitored live and recorded interviews and provided constructive feedback and coaching to interviewers. Quality experts attended interviewer training to learn survey basics and interviewing conventions. In addition, they were trained for general monitoring responsibilities, including the use of quality evaluation system (see section 3.1.3). Quality experts were given an interviewing manual, a copy of the telephone interviewing screens, and a copy of the survey, including help text.

**Tracing staff** completed a 16-hour program on tracing procedures led by tracing managers in RTP's Call Center Services. Tracers then had an additional 2-hour, project-specific training, including an overview of B&B:08/18, review of B&B:08/18 FAQs, and information about tracing techniques most appropriate for locating B&B:08 cohort members.

### 3.2.3 *Tracing Contact Information and Locating Sample Members*

To achieve a high rate of response, data collection staff implemented several procedures to identify sample members' updated contact information (tracing) and confirm the contact information was accurate (locating). Prior to data collection, an e-mail and postcard were sent to sample members requesting that they provide up-to-date contact information. Batch tracing services were also utilized to update contact information. If all methods of contact proved ineffective in locating a sample member, intensive tracing was conducted.

Tracing efforts were considered successful if a match produced contact information for the sample member that was not previously known to data collection staff. A sample member was then deemed *located* if at any point during data collection, contact information was confirmed to be accurate for the individual. Thus, a sample member was only considered *not located* if no contact information was ever verified as accurate for the individual. Descriptions of tracing, locating, and contacting efforts are described below. The results of these efforts are presented in section 3.4.1.

**Contact updates.** Approximately 4 months before the beginning of data collection, data collection staff utilized the last-known e-mail and mailing address to request that sample members update their contact information. An e-mail and postcard were sent with a link to a web instrument where information could be updated. The postcards also contained a section that could be completed and returned. Sample members could submit this information through the end of data collection.

**Batch tracing.** Also prior to data collection, known contact information for sample members was sent to LexisNexis to access the U.S. Postal Service (USPS) National Change of Address (NCOA) database, LexisNexis's Single Best Address search, and NSLDS. The NCOA database contains change-of-address records submitted to USPS over the last 3 years, and Single Best Address can search multiple data sources using progressive search logic to match to the most current address available. Matched records were compared with last known addresses, and any new or updated addresses for sample members were loaded into CATI-CMS.

Cases sent to NCOA were also matched to PhoneAppend to update all telephone numbers. When known telephone numbers were not helpful in locating sample members, their names, street addresses, and zip codes were submitted to LexisNexis's Single Best Phone and/or Premium Phone telephone number lookup services.

**CATI locating.** If a sample member logged in to the survey via the Web, they were considered located and no further tracing was conducted. When no log-in occurred, telephone interviewers attempted to conduct an interview over the telephone. They called the number with the best likelihood of reaching the sample member, as determined by the CATI-CMS. If the interviewer could not reach the sample member at that number, the interviewer attempted to gather locating information from the contact who answered the call. If this approach was unsuccessful, the interviewer used other phone numbers available for the sample member. Only when all phone numbers proved inaccurate for the sample member was intensive tracing operations (TOPS) initiated.

**Intensive tracing.** If all phone locating methods were exhausted, and no other telephone number was available, cases were sent to TOPS and rendered unavailable to interviewers for contacting. Intensive tracing used a two-tiered approach using both public domain and proprietary databases to identify updated contact information.

The first tier of intensive tracing, known as TOPS-1, identified sample members in consumer databases (e.g., LexisNexis, Experian, and Accurant) using SSNs. If this search resulted in an updated telephone number, TOPS sent the case back to the case management system for interviewer follow-up. If the search resulted only in a new address, tracers used directory assistance searches to locate a telephone number. This approach minimized the effort required to locate cases through intensive training and the time that cases were unavailable to telephone interviewers.

Cases unable to be located through TOPS-1 efforts were sent to the second tier of intensive tracing, TOPS-2. Each case was thoroughly reviewed, and next steps were determined based on leads developed from prior tracing and contacting activities. Tracing staff again used consumer databases SSN search to seek current contact information for a sample member or other contacts who could provide a lead to the sample member. On a case-by-case basis, additional online searching methods were used to find up-to-date contact information.

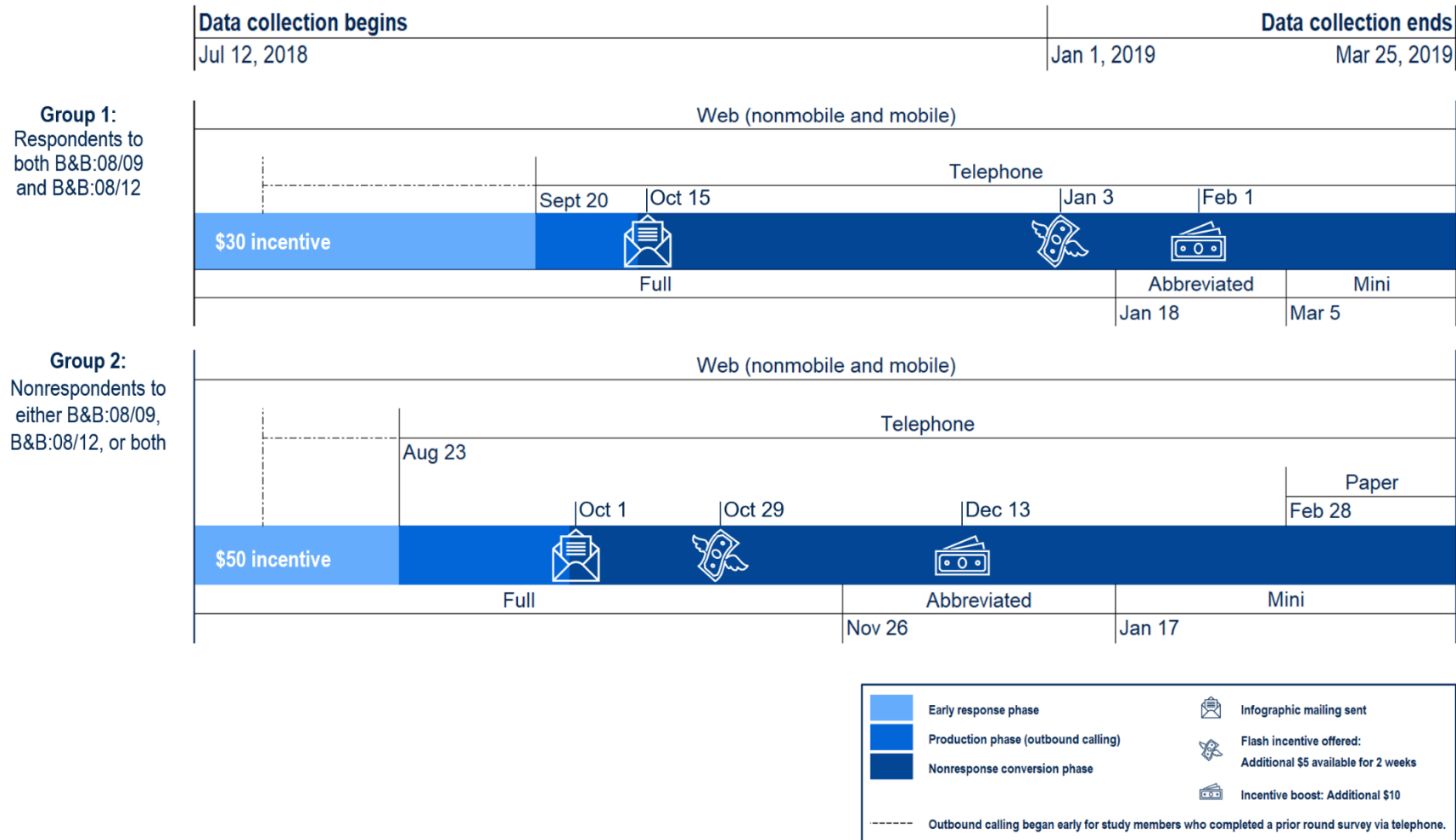
### **3.2.4 Survey Data Collection Phases, Types, and Activities**

The B&B:08/18 survey data collection took place from July 12, 2018, through March 25, 2019. The three-phase process and associated activities included various communication methods, survey modes, and incentive offers. The design was focused on encouraging participation from two groups of sample members. The two data collection groups were

- **Group 1:** Sample members who responded to both the B&B:08/09 and the B&B:08/12 survey; and
- **Group 2:** Sample members who did not respond to either the B&B:08/09 survey, the B&B:08/12 survey, or both.

Figure 3 displays a timeline of survey data collection activities by data collection group, and the sections below provide more detail regarding the data collection phases and outreach efforts depicted in the figure. For survey response results by data collection phase, see section 3.4.2.

**Figure 3. Timeline of survey data collection activities, by data collection group: 2018–2019**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Early response phase.** To begin data collection, project staff utilized the last known addresses and e-mail addresses to announce the B&B:08/18 survey and invite the B&B:08 cohort to complete it. A notification mailing that included a \$2 prepaid incentive was mailed to each sample member. The mailing contained a cover letter that notified sample members of the start of data collection, the incentive eligible respondents would receive upon completion of the survey, and their unique log-in ID and password for the web survey. The brochure provided information about the purpose of B&B, confidentiality and security measures, and contact information for help-desk and project staff. After the sample member was located, later e-mails also included a personalized link to the survey, allowing sample members to begin the survey immediately without entering their ID and password.

Sample members were periodically mailed reminders to complete the study, including postcards, letters, and an infographic. Reminder e-mails also went out regularly throughout data collection. Similarly, text message reminders with a link to the survey were sent to sample members' cell phone numbers. See appendix G for copies of the mailing, e-mail, and text message materials sent to sample members.

During the early response phase, sample members were encouraged to complete the web survey, and help-desk staff were available to answer any questions. No outbound telephone contacting efforts were implemented during this phase. For sample members in either data collection group who had completed the NPSAS:08, B&B:08/09, or B&B:08/12 survey via telephone, the early response phase lasted 2 weeks. For sample members who had completed a self-administered survey during prior rounds, the early response phase lasted longer: 10 weeks for group 1 and 6 weeks for group 2.

**Production phase.** If sample members did not complete the B&B:08/18 survey during the early response phase, when that phase ended, the production phase began. For this second phase, outbound calling began in addition to the early response phase efforts, and continued until the end of data collection, March 25, 2019. Until the sample member agreed to participate in the survey, interviewers used these calls to locate sample members, answer questions about the study, and e-mail sample members' IDs and passwords. If the sample member agreed to participate, the interviewer encouraged the sample member to complete the interview immediately over the telephone. If the sample member preferred to complete the web survey, interviewers followed up with them by telephone 8 days later if they had not yet completed.

**Nonresponse conversion phase.** To further encourage participation from sample members who had not yet responded to the B&B:08/18 survey, data collection staff

implemented a nonresponse conversion phase. This phase marked the offering of three shortened versions of the survey to request key data elements and convert nonrespondents into survey respondents.

First, the **abbreviated survey** (averaged 13 minutes) was offered to all remaining nonrespondents. It included a subset of items from the full survey, collecting information for up to three employers and one job title, along with basic information about the sample members' education experiences, debt and repayment, and background information.

Subsequently, the **mini survey** (averaged 6 minutes), was offered to remaining nonrespondents. The mini survey contained a subset of items from the abbreviated survey that collected summary information over the past 6 years.

Finally, nonrespondents in group 2 were mailed a **paper version** of the mini survey with an addressed postage-paid envelope to return the completed survey. This paper survey was sent on February 28, 2019.

**Flash incentives and incentive boosts.** At the beginning of data collection, the letters and e-mails inviting sample members to participate in the survey offered a base incentive amount. Group 1 was initially offered a base incentive of \$30, and group 2 was offered a base incentive of \$50. In addition to the nonresponse conversion phase, incentive increases were offered throughout data collection to encourage participation.

Five-dollar "flash incentives" were offered first. This additional incentive amount was awarded to individuals who completed the survey within 2 weeks after the offer was made. For group 1, the flash incentive began on January 3, 2019, for a total incentive of \$35. Similarly, for group 2, the flash incentive began on October 29, 2018, for a total incentive of \$55. Later, \$10 incentive increases, "incentive boosts," were offered and awarded to individuals who completed the (full, abbreviated, or mini) survey by the end of data collection. The incentive boost was offered to group 1 starting on February 1, 2019, which raised their incentive amount from \$30 to \$40. Similarly, the incentive boost was offered to group 2 on December 13, 2018, which raised their incentive amount from \$50 to \$60.

### 3.2.5 *Résumé Collection*

In addition to the survey items, respondents were also asked to provide their résumé. Objectives of the résumé collection included the ability to internally evaluate alignment between employment history as reported via résumé and survey data, improve imputations, and ultimately reduce respondent burden. Respondents taking



the survey online could immediately upload the résumé at the conclusion of the survey. This option was available during all phases of data collection. Respondents who completed the survey over the phone were asked if they would be willing to upload a résumé later, and an e-mail was sent to the respondents after the interview with instructions. Each respondent who uploaded a résumé received an additional \$5 incentive. For résumé collection results, see section 3.6. Note that the résumés were used for internal purposes only and are not available in the B&B:08/18 products.

## 3.3 Data Collection Quality Control

This section describes the quality control procedures employed throughout data collection. These procedures consisted of monitoring interviews, holding quality review meetings, and conducting debriefings with project staff during and after data collection.

### 3.3.1 Interview Monitoring

Telephone interviewers were regularly monitored during B&B:08/18 data collection to meet the following data quality objectives:

- identify difficult items in the survey;
- reduce the number of interviewer errors;
- improve interviewer performance through reinforcement of effective strategies; and
- assess the quality of the data collected.

As quality experts monitored interviewer interactions with sample members, they recorded feedback on standardized forms that covered such topics as interviewer professionalism, question administration, conversational interviewing, and familiarity with the survey instrument. Quality review meetings frequently incorporated issues identified during monitoring to improve the overall quality of telephone interviews. Segments of interviews recorded and stored in the CATI-CMS were used as training aids during project trainings and quality meetings.

### 3.3.2 Quality Review Meetings

Supervisors reinforced concepts from interview training sessions in biweekly quality review meetings, reminding interviewers of proper administration of the survey and other topics as needed. Supervisors encouraged trainees to ask questions, which

helped identify training topics for subsequent quality meetings. During B&B:08/18, some of the topics covered during quality meetings follow:

- use of help text within the survey;
- clarification of questions and item responses in the survey;
- proper administration of specific survey questions;
- successful refusal conversion techniques;
- guidelines for providing detailed sample member-level comments in the CATI-CMS;
- strategies for gaining cooperation from sample members and other contacts;
- data security protocols;
- help for sample members with the résumé upload option; and
- study progress and outline of activity schedules.

After each quality review meeting, notes were disseminated to data collection staff via an online portal. The notes provided guidance on the topics discussed at each meeting and were posted in a cumulative format, so that staff had an updated and searchable document containing all quality meeting notes compiled over the course of the project.

### **3.3.3 Debriefings**

At both the midpoint and the end of data collection, supervisors debriefed interviewers regarding their experiences during the study. Data collection staff offered feedback to project leaders through an anonymous online survey and in-person meetings. Topics of the survey and debriefing discussions included interviewer training, interviewer support and monitoring, systems for locating and contacting sample members, procedure for gaining sample member cooperation, and B&B:08/18 survey design and administration. Feedback from interviewers and supervisory staff will be used to inform the planning and implementation of future B&B surveys.

For example, in response to feedback from prior data collections, B&B:08/18 training included more active experiences with the systems and the survey instrument. B&B:08/18 interviewers reported that they appreciated these hands-on activities conducted during training. They also expressed clear benefits from reviewing refusal conversion strategies and FAQs in the quality meetings, such as the ability to gain cooperation from reluctant sample members.

In addition, interviewers reported that the resources provided in the survey, such as help text and conversion text, were helpful in successfully administering the survey by telephone. They also reported that reviewing study progress and the timing of activities helped them tailor their introductions to sample members. Finally, interviewers provided feedback on how the flow of the abbreviated survey and the mini survey could be improved for future studies.

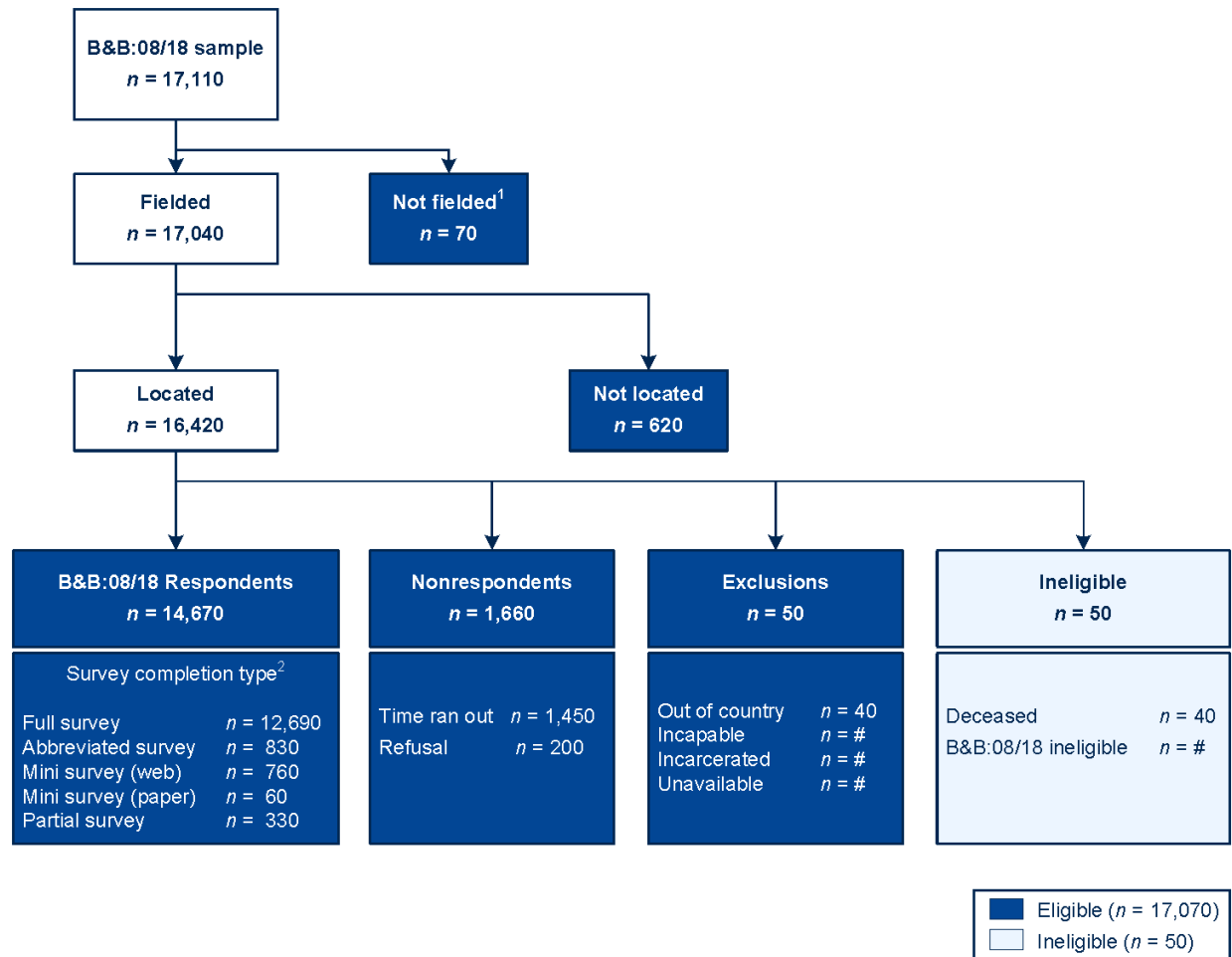
## 3.4 Survey Data Collection Outcomes

This section summarizes results of fielding (i.e., locating, contacting, and surveying) the full B&B:08/18 sample of 17,110 individuals. Prior to data collection, staff decided that, given the very low likelihood of response to the B&B:08/18 survey, all 70 NPSAS:08 nonstudy members (see section 2.2.3) would be classified as eligible B&B:08/18 nonrespondents and would not be fielded. That is, there are no fielding results for this group. Thus, the fielded sample totaled 17,040.<sup>12</sup> Through contact updates in the survey, batch locating services, and TOPS-1 and -2, 16,420 sample members (96 percent) were located. Of those located, 50 were deemed ineligible, 50 were otherwise excluded from further data collection efforts (e.g., identified to be out of the country or incarcerated), and 14,670 were considered B&B:08/18 respondents (90 percent; 86 percent of the eligible sample of 17,070 individuals). B&B:08/18 respondents completed either a full, abbreviated, or mini survey. (See section 3.2.4 for more information on survey types.) *Partial survey completers* were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers. Figure 4 breaks down the B&B:08/18 sample by fielding, locating, respondent, and eligibility status.

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<sup>12</sup> The fielded sample of 17,040 is used as the denominator for all rates in this chapter unless otherwise specified.

**Figure 4. B&B:08/18 sample member locating and surveying results: 2018**



<sup>1</sup> Prior to data collection, all NPSAS:08 nonstudy members were classified as eligible B&B:08/18 nonrespondents and were not fielded. That is, there are no locating, contacting, or surveying results for sampled B&B:08-eligible students who were determined to not have sufficient data to meet the definition of a NPSAS study respondent.

<sup>2</sup> As a nonresponse conversion technique near the end of data collection, sample members were invited to complete shortened versions of the survey: the abbreviated and mini surveys. A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers.

# Rounds to zero.

NOTE: Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 3.4.1 Sample Member Tracing and Locating Results

Data collection staff employed several batch-tracing, intensive tracing, and contacting efforts to identify updated contact information and locate sample members. See section 3.2.3 for details about tracing and locating activities.

**Contact update results.** A total of 5,660 B&B:08/18 sample members (33 percent) responded to a request for updated contact information prior to the start of data collection. Of those who provided updated contact information, 99 percent went on

to be considered B&B:08/18 respondents. Of those who did not provide updated contact information, 95 percent were successfully located through other efforts, and 80 percent were deemed B&B:08/18 respondents.

**Batch tracing results.** Prior to data collection, known contact information was sent to several batch tracing sources (NCOA, Single Best Address, NSLDS, Single Best Phone, and PhoneAppend) to match any updated mailing addresses or phone numbers. See section 3.2.4 for batch tracing details. Of these batch tracing sources, the Single Best Address search had the highest match rate of sent records, at nearly 100 percent, while the NCOA search had the lowest match rate at 15 percent. The match rates for B&B:08/18 records sent to batch tracing source are shown below in table 10.

**Table 10. Number of cases sent, and number and percentage matched to batch tracing sources: 2018**

Tracing source	Number sent	Number matched	Percent matched
National Change of Address (NCOA)	16,960	2,590	15.3
PhoneAppend	16,960	9,110	53.7
Single Best Address	16,780	16,730	99.7
National Student Loan Data System (NSLDS)	17,040	10,160	59.6
Single Best Phone	1,180	980	83.5
Premium Phone	1,040	390	37.2

NOTE: Number of cases sent to each source varies based on the timing of the matching procedure and the need for additional contact information. Match rate includes instances when a sample member's record was confirmed or when new information was provided. For Premium Phone, match rate includes only instances when new information was provided. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Intensive tracing results.** After exhausting all known contact information and batch tracing services, 740 sample members (4 percent) were still not located and were flagged for intensive tracing. Updated contact information was identified for 730 of them, and 390 were eventually located. Of those, 180 (24 percent of those sent to TOPS) became B&B:08/18 respondents. In addition to the 350 cases not located during TOPS, 270 were still in an active CATI locating status, had not yet been sent to TOPS, and were never located. These account for the 620 sample member cases not located.

### 3.4.2 Unit Response Rates

Overall, 16,420 fielded sample members (96 percent) were located, though 40 were found to be deceased or otherwise excluded. Ultimately, 14,670 (86 percent; 90 percent of those located) were considered B&B:08/18 respondents. A sample member is considered a B&B:08/18 respondent if they completed the full,

abbreviated, or mini survey. Some sample members were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers.; this group is referred to as partial survey completers, or “partials.” These results are shown in table 11.

**Table 11. Number and percentage of fielded sample members located and considered B&B:08/18 respondents, by data collection group and control of baccalaureate-granting institution: 2018**

Data collection group and control of baccalaureate-granting institution	Fielded <sup>1</sup>	Located <sup>2</sup>		B&B:08/18 respondents <sup>3</sup>		
		Number	Percent of fielded	Number	Percent of located	Percent of fielded
<b>Total</b>	<b>17,040</b>	<b>16,380</b>	<b>96.1</b>	<b>14,670</b>	<b>89.6</b>	<b>86.1</b>
Data collection group <sup>4</sup>						
Group 1	13,490	13,210	97.9	12,390	93.8	91.8
Group 2	3,550	3,170	89.3	2,290	72.1	64.4
Control of baccalaureate-granting institution						
Public	9,840	9,480	96.4	8,520	89.9	86.6
Private nonprofit	6,320	6,080	96.2	5,460	89.8	86.4
Private for-profit	890	820	92.4	690	84.6	78.2

<sup>1</sup> The fielded sample excludes 70 nonstudy members from the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) who were considered part of the eligible B&B:08/18 sample but were not fielded.

<sup>2</sup> Sample members were considered located if, at any point during data collection, contact information was confirmed to be accurate for the individual. For the purposes of response rates, located counts exclude 40 located sample members found to be deceased.

<sup>3</sup> A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers.

<sup>4</sup> Data collection activities were determined by the sample member’s assigned data collection group. Group 1 consisted of sample members who responded to both the B&B:08/09 and the B&B:08/12 survey, and group 2 consisted of sample members who did not respond to either the B&B:08/09 survey, the B&B:08/12 survey, or both.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Survey response results by data collection phase.** Data collection was broken out by three phases (early response, production, and nonresponse conversion) which employed varied communication methods, survey modes, and incentive offers. See section 3.2.4 for details. Sixty percent of respondents completed the survey during the early response phase, 16 percent completed during the production phase, and the remaining 25 percent completed during the nonresponse conversion phase (table 12).

**Table 12. Number and percentage of B&B:08/18 respondents, by survey data collection phase, data collection group, and control of baccalaureate-granting institution: 2018**

Data collection group and control of baccalaureate-granting institution	Respondents	Survey data collection phase					
		Early response		Production		Nonresponse conversion	
		Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>14,340</b>	<b>8,560</b>	<b>59.7</b>	<b>2,250</b>	<b>15.7</b>	<b>3,540</b>	<b>24.7</b>
Data collection group <sup>1</sup>							
Group 1	12,120	7,710	63.7	2,250	18.5	2,160	17.8
Group 2	2,230	850	37.9	#	#	1,380	62.1
Control of baccalaureate-granting institution							
Public	8,320	5,030	60.5	1,240	14.9	2,050	24.6
Private nonprofit	5,350	3,170	59.3	880	16.5	1,300	24.2
Private for-profit	680	360	52.6	130	18.6	200	28.8

<sup>1</sup> Data collection activities were determined by the sample member's assigned data collection group. Group 1 consisted of sample members who responded to both the B&B:08/09 and the B&B:08/12 survey, and group 2 consisted of sample members who did not respond to either the B&B:08/09 survey, the B&B:08/12 survey, or both.

# Rounds to zero.

NOTE: A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers. This table excludes all 330 partial survey completers. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Survey response results by survey type.** All sample members were offered a full survey, but over the course of data collection, nonrespondents were offered two shortened versions of the survey as a nonresponse conversion technique (see section 3.2.4). Of all 14,670 respondents, 87 percent completed a full survey; 6 percent completed an abbreviated survey; 6 percent completed a mini survey; and 2 percent were partials. These completion percentages include telephone interviews, self-administered web surveys, and self-administered paper surveys. See below for response rates across survey types by prior-round response status and control of institution.

**Table 13. Number and percentage of B&B:08/18 respondents, by completion status, survey type, data collection group, and control of baccalaureate-granting institution: 2018**

Data collection group and control of baccalaureate-granting institution	Respondents	Partial completion		Completed survey					
		Number	Percent	Full		Abbreviated		Mini <sup>1</sup>	
				Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>14,670</b>	<b>330</b>	<b>2.2</b>	<b>12,690</b>	<b>86.5</b>	<b>830</b>	<b>5.7</b>	<b>820</b>	<b>5.6</b>
Data collection group <sup>2</sup>									
Group 1	12,390	270	2.2	11,110	89.7	530	4.3	470	3.8
Group 2	2,290	60	2.5	1,580	69.3	300	13.0	350	15.1
Control of institution									
Public	8,520	200	2.3	7,380	86.6	480	5.6	460	5.4
Private nonprofit	5,460	110	2.1	4,720	86.5	310	5.6	320	5.8
Private for-profit	690	20	2.4	590	85.3	40	6.3	40	5.9

<sup>1</sup> Sixty of the 820 mini survey respondents completed the survey via paper mailing.

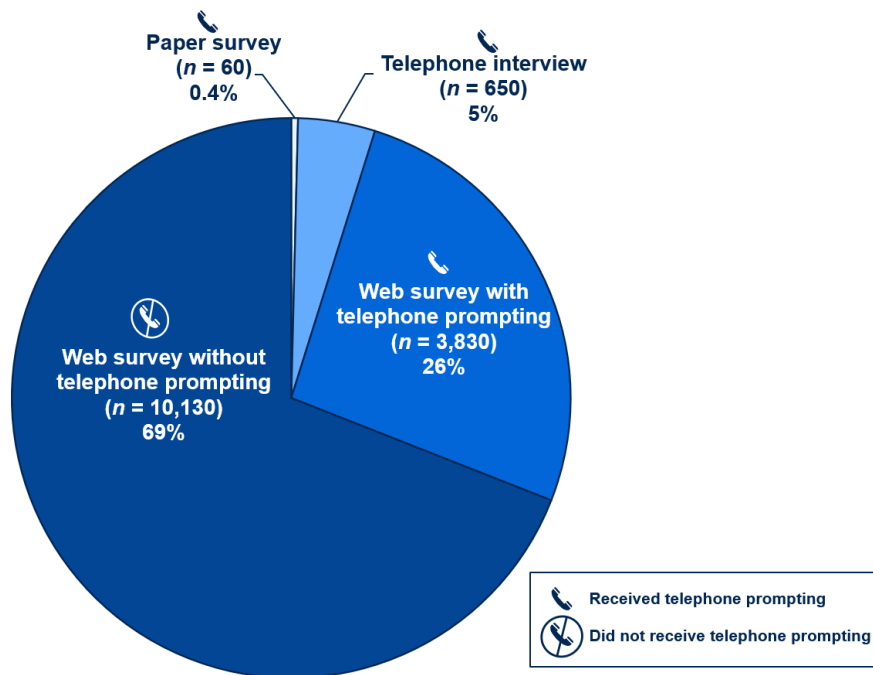
<sup>2</sup> Data collection activities were determined by the sample member's assigned data collection group. Group 1 consisted of sample members who responded to both the B&B:08/09 and the B&B:08/12 survey, and group 2 consisted of sample members who did not respond to either the B&B:08/09 survey, the B&B:08/12 survey, or both.

NOTE: A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Survey response results by mode of completion.** For the purposes of this data file documentation, the mode of completion assigned to a B&B:08/18 respondent (web nonmobile, web mobile, telephone, or paper) is the mode associated with their final session. See section 3.1.1 for more information on the modes of administration. Ninety-five percent of respondents completed the survey on the Web (figure 5). Specifically, 26 percent of all respondents completed the web survey only after receiving telephone prompts.



**Figure 5. Number and percentage of B&B:08/18 respondents, by mode of completion: 2018**

NOTE: A B&B:08/18 respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 3.4.3 Survey Timing Burden

This section reports how long B&B:08/18 respondents took to complete specific sections of the survey, by mode of completion, survey type, and selected respondent characteristics. It presents relevant results by number of employers and K–12 teacher status, and it describes completion times for survey forms (e.g., distinct screens with one or more questions/items), with the highest average completion times. (A facsimile containing all survey items can be found in Appendix E.)

The survey instrument recorded the elapsed time respondents took to complete each form. The completion time for a section equals the sum of completion times for all the forms in that section, and the total survey completion time equals the sum of completion times for all forms in the entire survey except for the résumé completion section.

Most B&B:08/18 respondents (83 percent) completed the survey in one session. When respondents broke off and continued the survey in a new session, they began on the last unanswered form they saw in their previous session. When a respondent

broke off, the timing for the last unanswered form could not be measured. In this situation, the completion time for that form was imputed to the median time other respondents (who did not break off on that form) spent completing the same form. Imputing form-level timing values made it possible to estimate the total survey completion time for respondents who completed the survey in multiple sessions.

The following timing analyses are conducted for 13,280 B&B:08/18 respondents. This includes respondents who completed the survey on the web or by telephone, and excludes partials, paper survey completers, cases with more than two break-offs, and total time outliers.<sup>13</sup> See details in table 14.

**Table 14. Number and percentage of B&B:08/18 respondents, by inclusion in timing analyses and survey type: 2018**

Inclusion in timing analyses and survey type	Number	Percent
<b>Total</b>	<b>14,670</b>	<b>100.0</b>
Total surveys included in timing analyses <sup>1</sup>	13,280	90.5
Completed full survey	11,710	79.8
Completed abbreviated survey	810	5.5
Completed mini survey	750	5.1
Surveys excluded from timing analyses	1,400	9.5
Partial survey completers <sup>2</sup>	330	2.2
Paper (mini) survey completers	60	0.4
Respondent completed the survey in three or more sessions <sup>3</sup>	860	5.8
Total survey time outliers <sup>4</sup>	150	1.0

<sup>1</sup> As a nonresponse conversion technique near the end of data collection, sample members were invited to complete shortened versions of the survey: the abbreviated and mini surveys. The mini survey was offered both as a web survey and a paper survey.

<sup>2</sup> A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers.

<sup>3</sup> When respondents broke off and continued the survey in a new session, they began on the last unanswered form they saw in their previous session. When a respondent broke off, the timing for the last unanswered form could not be measured. In this situation, the completion time for that form was imputed to the median time other respondents (who did not break off on that form) spent completing the same form. Respondents with at least two imputed timing values (three or more sessions) were excluded from timing analyses.

<sup>4</sup> To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977).

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

<sup>13</sup> The distribution of total survey times had considerably more large values than would be expected if the values followed a symmetric distribution such as the normal distribution, or bell curve. To detect unexpectedly large and small total time values, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). This statistical method adjusts the values to make the distribution more similar to a normal distribution. Next, respondents with transformed survey times that were greater than the 75th percentile of the distribution plus 1.5 times the interquartile range or less than the 25th percentile times 1.5 the interquartile range were omitted from all timing analyses (Tukey 1977). (The interquartile range equals the 75th percentile value of the distribution minus the 25th percentile value.)

Surveys administered by telephone are often associated with longer completion times since interviewers read every item aloud and discuss response options with the sample member. Web nonmobile and web mobile respondents were analyzed separately. Overall, the full survey took an average of 27.8 minutes to complete (table 15). Telephone interviews took an average of 40.8 minutes to complete, significantly the highest timing burden compared with both web nonmobile ( $t = 18.06, p < .0001$ ) and web mobile surveys ( $t = 17.16, p < .0001$ ).<sup>14</sup> Web nonmobile and web mobile surveys were completed in an average of 27.2 and 27.6 minutes, respectively.

As a nonresponse conversion technique near the end of data collection, sample members were invited to complete shortened versions of the survey: the abbreviated and mini surveys. The abbreviated survey took an average of 12.8 minutes to complete, and the mini survey took an average of 6.3 minutes to complete. The streamlined subset of items in the mini survey resulted in closely aligned timing burdens across modes of administration compared with the full and abbreviated surveys.

The average completion time by section ranged from 0.5 minutes for the Incentive Offering section to 13.1 minutes for the Employment section, which was nearly half of the average time to complete the full survey. The Employment section collected 6 years of employment history in a looping format where the same set of data elements is collected for each employer and job (up to three) over the specified period.

See additional detail regarding overall timing and section timing by mode of completion in table 15.

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<sup>14</sup> Due to unequal variances across group, difference-of-means tests use Satterthwaite (1946) approximation to estimate effective degrees of freedom.

**Table 15. Number of B&B:08/18 respondents to the full survey and average time to complete in minutes, by mode of completion and survey type and section: 2018**

Survey type and section	Mode of completion							
	Overall		Web nonmobile <sup>1</sup>		Web mobile <sup>1</sup>		Telephone	
	Number	Average (minutes)	Number	Average (minutes)	Number	Average (minutes)	Number	Average (minutes)
Total full survey <sup>2</sup>	11,700	27.76	7,770	27.16	3,520	27.57	410	40.79
Postbaccalaureate Education	11,710	2.49	7,780	2.43	3,530	2.45	410	3.99
Debt and Repayment	11,710	0.89	7,780	0.88	3,530	0.88	410	1.17
Employment	11,710	13.13	7,780	12.94	3,530	12.86	410	19.10
Teaching	11,710	0.86	7,780	0.77	3,530	0.98	410	1.45
Background	11,710	8.33	7,780	8.13	3,530	8.37	410	11.66
Incentive Offering <sup>2</sup>	11,700	0.49	7,770	0.21	3,520	0.87	410	2.50
Total abbreviated survey	810	12.83	440	12.62	270	12.38	100	14.97
Total mini survey	750	6.28	320	6.32	310	5.90	120	7.22

<sup>1</sup> Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet).

<sup>2</sup> Approximately 20 respondents who responded to the full web survey did not complete the Incentive Offering section. These respondents were excluded from the average completion time for the full survey and the average completion time for the Incentive Offering section.

NOTE: A B&B:08/18 respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Total survey time excludes the time associated with the Résumé Collection section. A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Timing by number of employers.** The survey collected employment history over the 6 years since the B&B:08/12 survey period (for both B&B:08/12 survey respondents and nonrespondents). The full survey collected more information about employers than the abbreviated or mini surveys, including basic information about all employers, detailed information about up to three jobs, and information about each nonworking period. The same set of questions was asked for each employer; therefore, the respondent's number of employers affected the burden associated with completing this section. Full survey respondents reported an average of two employers since 2012. Completing the Employment section when reporting two employers (13.9 minutes) took significantly longer than reporting one employer (8.6 minutes;  $t = -39.2, p < .0001$ ), and reporting three employers (18.6 minutes) took significantly longer than reporting two employers ( $t = -20.0, p < .0001$ ). Table 16 shows the average time to complete the Employment section for full survey respondents by mode of completion and number of employers.

**Table 16. Number of B&B:08/18 respondents to the full survey and average time to complete the Employment section in minutes, by mode of completion and number of employers: 2018**

Number of employers <sup>2</sup>	Mode of completion							
	Overall		Web nonmobile <sup>1</sup>		Web mobile <sup>1</sup>		Telephone	
	Number	Average (minutes)	Number	Average (minutes)	Number	Average (minutes)	Number	Average (minutes)
<b>Total</b>	<b>11,710</b>	<b>13.13</b>	<b>7,780</b>	<b>12.94</b>	<b>3,530</b>	<b>12.86</b>	<b>410</b>	<b>19.10</b>
None	270	1.53	130	1.37	110	1.57	20	2.25
One	4,690	8.62	3,010	8.40	1,540	8.70	140	12.39
Two	3,740	13.93	2,470	13.42	1,140	14.45	120	19.16
Three	1,860	18.56	1,310	17.79	490	19.26	60	29.41
Four or more	1,160	22.84	850	22.00	250	23.65	60	32.23

<sup>1</sup> Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet).

<sup>2</sup> Number of employers includes only employers reported in the survey between the B&B:08/12 survey period and the B&B:08/18 survey completion date.

NOTE: A B&B:08/18 respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Timing by K–12 teacher status.** B&B:08/18 respondents were classified according to any K–12 classroom teaching experience reported in the B&B:08/18 and prior-round surveys. There are four K–12 teacher status groups.

**New teachers** reported K–12 teaching for the first time in the B&B:08/18 survey and had not reported K–12 teaching in prior-round surveys.

**Stayers** indicated they were currently employed as K–12 teachers at the time of the B&B:08/18 survey and had reported K–12 teaching in a prior-round survey.

**Leavers** had reported K–12 teaching in a prior round of the study, but reported they were not employed as K–12 teachers at the time of the B&B:08/18 survey.

**Nonteachers** never reported K–12 teaching in a prior-round survey and did not indicate K–12 teaching in the B&B:08/18 survey.

The teaching status determine respondents’ routing and survey items in the Teaching section. (Note that the teaching section items can be found in Appendix E.) For example, stayers received items about reasons they remained in the teaching profession, leavers were asked about reasons for leaving teaching, and nonteachers saw a maximum of two forms. Given this survey design, respondents’ levels of burden varied according to their teacher status.

Teachers took an average of 4.6 minutes to complete the Teaching section, significantly longer than nonteachers, who took an average of 0.3 minutes to answer the Teaching questions ( $t = -49.86, p < .0001$ ). New teachers were asked questions about their first teaching position and took an average of 7.0 minutes to complete, which was significantly longer than the stayers (5.3 minutes;  $t = 7.82, p < .0001$ ) and leavers (2.3 minutes;  $t = 22.7, p < .0001$ ).

Table 17 shows the average time to complete the Teaching section by mode of completion and K–12 teacher status.

**Table 17. Number of B&B:08/18 respondents to the full survey and average time to complete the Teaching section in minutes, by mode of completion and K–12 teacher status: 2018**

K–12 teacher status <sup>2</sup>	Mode of completion							
	Overall		Web nonmobile <sup>1</sup>		Web mobile <sup>1</sup>		Telephone	
	Number	Average (minutes)	Number	Average (minutes)	Number	Average (minutes)	Number	Average (minutes)
<b>Total</b>	<b>11,710</b>	<b>0.86</b>	<b>7,780</b>	<b>0.77</b>	<b>3,530</b>	<b>0.98</b>	<b>410</b>	<b>1.45</b>
All teachers	1,560	4.61	930	4.41	580	4.57	50	8.42
New	380	6.96	220	6.70	130	6.59	20	11.98
Stayers	610	5.29	350	5.16	250	5.19	20	10.14
Leavers	570	2.32	360	2.28	190	2.37	20	2.82
Nonteachers	10,150	0.28	6,850	0.28	2,950	0.27	360	0.39

<sup>1</sup> Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet).

<sup>2</sup> “New” teachers reported K–12 teaching for the first time in the B&B:08/18 survey and had not reported K–12 teaching in a prior-round survey. “Stayers” indicated they were currently employed as K–12 teachers at the time of the B&B:08/18 survey and had reported K–12 teaching in a prior-round survey. “Leavers” had reported K–12 teaching in a prior-round survey, but reported they were not employed as K–12 teachers at the time of the B&B:08/18 survey. “Nonteachers” never reported K–12 teaching in prior-round surveys and did not indicate K–12 teaching in the B&B:08/18 survey.

NOTE: A B&B:08/18 respondent’s mode of completion (web, telephone, or paper) is the mode associated with their final session. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Timing of individual forms.** Although respondent burden varied across the subgroups of respondents described above, evaluating the most time-consuming forms offers insight into the survey’s performance. Because coder forms required respondents to interact with the predictive text functionality of the question (see section 3.1.2 for descriptions of the coder forms), which is more involved than selecting a response option or typing in an open-ended response, form-level timing analyses separated coder form completion times from other form types. The average and median completion times for all coders and the noncoder forms with the 10 highest average completion times are displayed in table 18 below.

Three of the eight coder forms took respondents an average of 50 seconds or more to complete. The longest coder form, the *Occupation* coder form (B18DOCCEX[01]) took an average of 91.2 seconds to complete.<sup>15</sup> The second longest coder form in the survey was *Major/field of study at postbaccalaureate institution* (B18CMAJ[01]) with an average of 59.5 seconds. The third longest coder form to complete was *Employer’s*

<sup>15</sup> For timing analyses, when a form was administered multiple times to a respondent (e.g., the *Occupation* coder was administered once per employer) the respondent’s completion time for the form was calculated as the average completion time (i.e., the number of seconds the respondent took to complete all administrations of the form divided by the number of administrations). These forms are referenced by the form name of the first administration with the number in brackets to signify the reliance on all such forms, not only the first (e.g., B18DOCCEX[01]).

*zip code* (B18DEMPZIP[01]), which took an average of 52.2 seconds. The same coder form also collected *Primary residence zip code* (B18FDISTNC) and took respondents significantly less time to provide an answer, 14.1 seconds on average ( $t = 63.5$ ,  $p < .0001$ ). This difference shows it may have been more cognitively burdensome to remember and report the zip code of an employer than the zip code of a current primary residence.

The noncoder forms that took the longest to complete relied on recall of detailed information from months or years before the survey was administered. The three longest noncoder forms each displayed a list of items with scaled response options. For example, the noncoder form with the highest timing burden, *Level of satisfaction with job* (B18DJSAT[01]), took respondents an average of 70.3 seconds to answer. The form listed eight items about satisfaction with the employer with a five-point Likert scale response option for each item. Then, *Starting hours and salary of job* (B18DEMPLOYA[01]) took an average of 67.0 seconds to report using a combination of text boxes and radio buttons, and *Months employed at job* (B18DWKMON[01]) took an average of 59.2 seconds for respondents to select all months employed at an employer on a calendar selection grid.



**Table 18. Number of B&B:08/18 respondents and mean and median completion time for forms with the highest mean completion times in seconds, by form: 2018**

Form	Form description	Form type	Number of administrations	Completion time (seconds)	
				Mean	Median
Coder forms					
B18DOCCEX[01] <sup>1</sup>	Occupation	Coder	12,170	91.18	60.67
B18CMAJ[01]	Major/field of study at postbaccalaureate institution	Coder	3,960	59.53	33.54
B18DEMPZIP[01] <sup>1</sup>	Employer's zip code	Coder	12,240	52.16	33.92
B18ESCHNAM[01]	Other K–12 school where taught	Coder	460	42.65	23.38
B18EJBSL	K–12 school where taught	Coder	1,250	39.13	20.47
B18CSCH[01]	Postbaccalaureate institution attended	Coder	2,610	37.89	20.78
B18FHSCDR <sup>1,2</sup>	High school where graduated	Coder	12,950	32.71	15.96
B18FDISTNC <sup>1,2</sup>	Primary residence zip code	Coder	13,270	14.13	11.11
Noncoder forms					
B18DJSAT[01]	Level of satisfaction with job	Likert	11,380	70.32	55.19
B18DEMPLOYA[01] <sup>1</sup>	Starting hours and salary of job	Textbox/Radio buttons	12,230	67.02	43.88
B18DWKMON[01] <sup>1</sup>	Months employed at job	Calendar selection	1,800	59.19	40.47
B18ETHNKINFL	Influences on whether to pursue teaching career	Likert	480	46.80	35.52
B18DCHNG[01]	Reasons no longer employed by employer	Likert	6,630	46.47	37.14
B18DEMPLOYC[01] <sup>1</sup>	Current/ending hours and salary at job	Checkbox/Textbox/ Radio buttons	12,230	44.27	30.31
B18CLOANAMT	Total amount borrowed in student loans	Textbox/Checkbox	2,280	43.19	22.23
B18DSTART[01] <sup>1</sup>	Start date with employer	Month and year dropdowns	12,250	42.11	26.16
B18CFENR[01]	Date first attended postbaccalaureate institution	Month and year dropdowns	4,200	41.06	20.95
B18DJDUTY[01] <sup>1</sup>	Job duties	Textbox	2,230	38.77	25.36

<sup>1</sup> This item was included in the abbreviated survey.

<sup>2</sup> This item was included in the mini survey.

NOTE: When a form is administered multiple times to each respondent (e.g., the *Occupation* coder is administered once per employer) the respondent's completion time for the form is calculated as the average completion time (i.e., the number of seconds the respondent took to complete all administrations of the form divided by the number of administrations). These forms are referenced by the form name of the first administration with the number in brackets to signify the reliance on all such forms, not only the first, e.g., B18DOCCEX[01]. This table excludes forms associated with the Résumé Collection and Incentive Offering sections. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 3.4.4 Number of Calls to Sample Members

On average, interviewers made six calls per fielded sample member during the data collection period, though many calls did not result in contact with the sample member. Average call counts for completed cases varied by survey completion mode and are shown in table 19. Respondents who completed an interview by telephone required 10 calls on average, compared with 12 calls on average to respondents who completed the web mobile survey after telephone prompting.

**Table 19. Number of fielded B&B:08/18 sample members and number and average number of outgoing calls, by response status and mode of completion: 2018**

Response status and mode of completion	Fielded	Number of outgoing calls	Average number of outgoing calls per fielded sample member
<b>Total</b>	<b>17,040</b>	<b>104,200</b>	<b>6.1</b>
Respondent <sup>1</sup>	14,670	50,460	3.4
Web survey	13,960	42,430	3.0
Web nonmobile, with telephone contact	2,270	23,266	10.2
Web mobile, with telephone contact	1,560	19,170	12.3
Telephone survey	650	6,670	10.2
Paper survey	60	1,350	23.7
Nonrespondents and exclusions	2,370	53,740	22.7

<sup>1</sup> A sample member is considered a B&B:08/18 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered B&B:08/18 respondents if they completed at least the portion of the Employment section where they reported all their employers.

NOTE: Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding. Averages based on unrounded numbers. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 3.4.5 Refusal Conversion

For the purposes of data collection, a “refusal” is when a sample member refused to participate or when someone else refused on the sample member’s behalf. Sample members with a refusal were contacted by telephone interviewers specially trained in refusal conversion techniques designed to encourage sample members to complete the survey after a refusal. Overall, 560 sample members (3 percent of the full sample) had a refusal at some time during the B&B:08/18 data collection. Of those, 150 (27 percent) subsequently completed the survey.

## 3.5 Evaluation of Survey Items

The following sections provide various evaluations of survey systems and items. Specifically, the coder forms and conversion text functioned to provide high rates of completed data, and overall, few items had significant amounts of missing data. Only eight items had more than 10 percent nonresponse.

### 3.5.1 Instrument Coder Forms

As described in section 3.1.2, a predictive coding system compares a respondent’s open-ended response to an underlying database, and respondents are asked to select a response option from a list of possible matches. When the respondent selects an option from the list that matches their open-ended response, the response is said to be coded.

For each coder form, the coding rate equals the total number of open-ended responses coded divided by the total number of open-ended responses. The analysis of coding rates includes responses from all B&B:08/18 respondents who completed the survey via web (nonmobile or mobile) or telephone. The 60 paper survey completers were excluded since they were unable to interact with the coder database. For details about the reliability of coded responses, and the process of assigning codes to text strings not coded in the survey, including paper survey responses, see section 5.2.

Overall, respondents (and telephone interviewers) coded 88 percent of open-ended responses. The remaining text strings were not coded during the survey, typically because the coder database did not produce suitable results for the respondent. Coder forms in web nonmobile mode had a 91 percent coding rate (table 20). Web mobile and telephone surveys had coding rates of 82 percent and 86 percent, respectively. Coding rates ranged from a low of 84 percent when attempting to code the name of the respondent's K-12 school using the interactive coding program to a high of 97 percent when attempting to code the respondent's major using the interactive coding program. Table 20 shows a summary of the percent of responses coded, by mode of completion and coder form.

Coding rates were significantly higher ( $p < .0001$  unless otherwise specified) in web nonmobile mode than in telephone mode for all five coder forms (zip code,  $p < .001$ ). Similarly, coding rates were significantly higher in web nonmobile mode than in web mobile mode for major, K-12 school, zip code, and occupation ( $p < .001$ ) coder forms. These results are limited but suggest coding may be correlated with the amount of information presented on a form. Because of the larger screen on most nonmobile devices compared to mobile devices, web nonmobile respondents typically did not have to scroll through a list of options; rather, they could view the full list at once. Telephone respondents, who listened to the telephone interviewer read the options, must have considered each option one at a time and must have retained all the options in memory to compare them. However, the coding success rate for zip code was significantly lower in web mobile mode than in telephone mode, which seems to contradict this explanation.

**Table 20. Percentage of responses coded during the survey for B&B:08/18 respondents, by mode of completion and coder form: 2018**

Coder form	Overall	Mode of completion		
		Web nonmobile	Web mobile	Telephone
<b>Total</b>	<b>88.0</b>	<b>90.9</b>	<b>81.9</b>	<b>85.5</b>
Postsecondary institution	89.2	89.7	89.7	78.3
Major or field of study	96.9	97.9	95.2	91.7
Zip code	88.4	93.4	76.6	91.2
Occupation	88.2	88.8	87.1	84.6
K–12 school	83.6	85.1	82.3	71.7

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 3.5.2 Conversion Text

To minimize survey-item nonresponse (see section 3.5.3 for more on the extent of item nonresponse in the B&B:08/18 survey), the instrument displayed “conversion text” to encourage reluctant sample members to provide a response to the most critical survey forms of B&B:08/18. When a critical form was left missing and the respondent selected “Next” to move to the next form, conversion text was displayed. The text emphasized the importance of the question and encouraged respondents to provide an answer; however, the respondent could proceed through the survey without additional prompting for the unanswered form.

On average, a valid response was provided 64 percent of the time conversion text was displayed. Web nonmobile surveys accounted for 58 percent of conversion text triggered and 59 percent of the conversions. Telephone interviews made up 7 percent of triggered instances and 3 percent of converted instances. The 60 paper survey completers were excluded from conversion text analysis since the paper survey does not have this functionality.

Table 21 shows conversion text trigger and conversion rates by mode of completion. The conversion rates for these 12 forms ranged from 38 percent to 100 percent. The three forms, with conversion rates lower than 75 percent, asked respondents to provide the number of months employed at their first employer described (B18DWKMON01), their income in 2017 (B18FINCOM), and their spouse or partner's income in 2017 (B18FINCSP). The latter two forms about income each triggered conversion text more than 200 times.

**Table 21. Number of administered forms and percentage of conversion text triggered and converted to a valid response, by mode of completion and form: 2018**

Form	Form description	Mode of completion											
		Overall			Web nonmobile			Web mobile			Telephone		
		Number administered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Number administered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Number administered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Number administered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>
B18CPSTGRD <sup>3,4</sup>	Attended degree or certificate program since B&B:08/12 survey start date	14,620	0.1	100.0	9,380	0.1	100.0	4,580	0.1	100.0	650	0.3	100.0
B18DANYJOBS <sup>3</sup>	Employed since B&B:08/12 survey start date	13,850	0.2	100.0	9,050	0.3	100.0	4,270	0.2	100.0	540	0.2	100.0
B18DEMPZIP01 <sup>3</sup>	Employer 1: zip code	13,510	1.0	89.8	8,880	0.8	89.9	4,120	1.3	89.1	510	0.8	100.0
B18DSTART01 <sup>3</sup>	Employer 1: start date	13,510	0.6	75.6	8,880	0.5	80.9	4,120	0.6	76.9	510	1.8	44.4
B18DEND01 <sup>3</sup>	Employer 1: end date	13,510	0.9	88.7	8,880	0.9	90.4	4,120	0.9	83.3	510	1.0	100.0
B18DWKCONT01 <sup>3</sup>	Employer 1: period of at least one month not employed	13,430	0.2	93.6	8,830	0.2	100.0	4,100	0.3	81.8	510	0.6	100.0
B18DWKMON01 <sup>3</sup>	Employer 1: months employed between B&B:08/12 survey start date through March 2019	960	4.8	39.1	620	4.7	37.9	300	4.6	42.9	40	6.8	33.3
B18DSEARCH <sup>3,4</sup>	Currently looking for a job	14,620	0.2	96.6	9,380	0.2	94.7	4,580	0.2	100.0	650	0.2	100.0
B18ECURCRT	Currently certified as K–12 teacher	1,410	0.4	80.0	830	0.4	66.7	530	0.4	100.0	50	#	†
B18FCITZN	Citizenship status	230	0.4	100.0	170	#	†	50	2.0	100.0	10	#	†
B18FINCOM <sup>3,4</sup>	Respondent's income in 2017	14,620	3.8	51.1	9,380	3.4	51.9	4,580	4.2	55.7	650	7.3	27.1
B18FINCSP	Spouse's or partner's income in 2017	8,660	4.0	38.3	5,660	3.6	38.3	2,760	4.2	44.4	240	11.2	11.1

† Not applicable.

# Rounds to zero.

<sup>1</sup> Percent triggered is the number of times a missing response to a form triggered conversion text, divided by the number of times the form was administered.<sup>2</sup> Percent converted is the number of times a sample member provided a valid response after a missing form triggered conversion text, divided by the number of times conversion text was triggered.<sup>3</sup> This form was included in the abbreviated survey.<sup>4</sup> This form was included in the mini survey.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). This table excludes paper survey completers. A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Results are based on respondent behavior on the survey forms and may not align with processed data on the restricted-use files. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

Significance tests were conducted to determine differences in conversion rates among the modes of completion for each of the critical questions. Specifically, *Respondent's income in 2017* (B18FINCOM) had a significantly lower conversion rate in telephone interview mode than in both web nonmobile ( $p < .01$ ) and web mobile ( $p < .001$ ) modes of completion. Similarly, *Spouse's or partner's income in 2017* (B18FINCSP) also had a significantly lower conversion rate in telephone interview mode than in both web nonmobile ( $p < .01$ ) and web mobile ( $p < .01$ ) modes of administration.

Two additional items displayed conversion text, but in addition to a valid response option, a new response option of “don’t know” was displayed with the conversion text. Table 22 shows conversion rates for these two items: *Monthly daycare costs* (B18FCSTDYCR) and *Monthly rent or mortgage payment amount* (B18FMTGAMT). The conversion rates were 71 and 91 percent, respectively. B18FCSTDYCR had a significantly lower conversion rate in telephone interview mode than in web nonmobile mode ( $p < .0001$ ). The lower conversion rates of the telephone interview mode questions with and without a “don’t know” response option might be attributed to some respondents’ reluctance to share sensitive financial information with a telephone interviewer, which is consistent with studies of survey item sensitivity and nonresponse.<sup>16</sup>

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<sup>16</sup> Tourangeau & Yan (2007) and Kreuter et al. (2008).

**Table 22. Number of forms administered and percent where conversion text was triggered, responses were converted, and responses were converted to a “don’t know” response, by mode of completion and form: 2018**

Form	Form Description	Total				Web nonmobile			
		Adminis- tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “don’t know” response	Adminis- tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “don’t know” response
B18FCSTDYCR	Monthly daycare costs	5,630	3.5	91.4	21.3	3,440	3.1	92.5	20.8
B18FMTGAMT	Monthly rent or mortgage payment amount	11,280	1.9	70.9	10.3	7,530	1.7	72.1	11.6
Form	Form Description	Web mobile				Telephone			
		Adminis- tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “don’t know” response	Adminis- tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “don’t know” response
B18FCSTDYCR	Monthly daycare costs	2,030	4.2	96.4	23.8	170	4.2	14.3	#
B18FMTGAMT	Monthly rent or mortgage payment amount	3,390	2.2	76.7	9.6	360	3.1	18.2	#

# Rounds to zero.

<sup>1</sup> Percent triggered is the number of times a missing response to a form triggered conversion text, divided by the number of times the form was administered.<sup>2</sup> Percent converted is the number of times a sample member provided a response after a missing form triggered conversion text, divided by the number of times conversion text was triggered. It includes the percentage converted to a “don’t know” response.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). This table excludes paper survey completers. A respondent’s mode of completion (web, telephone, or paper) is the mode associated with their final session. A respondent’s mode of completion (web, telephone, or paper) is the mode associated with their final session. Results are based on respondent behavior on the survey forms and may not align with processed data on the restricted-use files. A “don’t know” response option, a checkbox labeled “Don’t know,” was displayed to the respondent only after conversion text was triggered. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

### 3.5.3 Survey-Item Nonresponse Rates

Rates of item nonresponse in the survey can identify burdensome survey items and facilitate a better understanding of respondents' experiences while completing the survey. Nonresponse rates were calculated for every B&B:08/18 survey item that was administered to at least 10 respondents who completed the full survey. Each rate was calculated by dividing the number of respondents missing a response for that item by the number of respondents to whom the item was administered.<sup>17</sup> An item may not be administered to a respondent for several reasons, such as the item does not apply or the item was not included in the abbreviated survey.

Table 23 shows item nonresponse rates for the eight items with more than 10 percent of missing data, overall and by mode of completion. They mostly pertained to open-ended questions regarding sexual orientation, gender identity, or finances, and one item asked respondents to provide a specific time frame for volunteer activities.

When asked about sexual orientation in a closed-ended question (i.e., whether they think of themselves as lesbian or gay, straight, bisexual, or another sexual orientation), 2 percent of respondents left the form blank, and 0.5 percent answered, "don't know." Those who answered "don't know" were asked to further describe their sexual orientation as an open-ended response (B18FLGBTQ\_DK), and among that group, 51 percent declined.

When asked to state their gender, 1.7 percent of respondents left the form blank, and 0.3 percent and 0.2 percent selected "genderqueer or gender nonconforming" and "a different identity," respectively. The respondents selecting either "genderqueer or gender nonconforming" or "a different identity" were prompted to further describe their gender as an open-ended response (B18FGENDERQR\_OTHER and B18FNOTSURE\_OTHER). Of them, 33 percent and 29 percent declined to provide a response, respectively.

Additionally, *Spouse's or partner's income ranges in 2017* (B18FINSRA) and *Respondent's income ranges in 2017* (B18FINEST) had a nonresponse rate greater than 25 percent.

When analyzing item nonresponse by mode, *Spouse's or partner's student loans: monthly payment* (B18FSPLNPY) had a significantly higher rate of nonresponse observed in

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<sup>17</sup> Some items were administered as part of a set on the same form, structured as a yes/no grid. If respondents selected "yes" to at least one item on a yes/no grid but left the remaining items on the grid missing, an "implied no" was recorded for each unchecked box (see table 29 in section 5.2 for more information). "Implied no" responses were not considered missing for the purposes of nonresponse rates due to the structure of the items.



telephone mode (27 percent) compared with both web nonmobile mode (14 percent) ( $p < .01$ ) and web mobile mode (14 percent) ( $p < .01$ ).

The item B18FVLAMT asked respondents to provide the time frame for the number of hours they reported volunteering. For example, if the respondent had reported 10 hours of volunteering, this item recorded whether it was 10 hours per year, per month, or per week, or if the 10 hours volunteered was a one-time event. For this item, the web mobile mode nonresponse rate (12 percent) was higher than those observed in either web nonmobile mode (10 percent;  $p < .05$ ) or telephone mode (6 percent;  $p < .05$ ). There were no statistically significant differences between modes for the remaining six items.

**Table 23. Number of B&B:08/18 respondents to the full survey administered an item and percentage of missing responses, by mode of completion and by item: 2018**

Item	Item description	Mode of completion							
		Overall		Web nonmobile		Web mobile		Telephone	
		Number Administered	Percent missing	Number Administered	Percent missing	Number Administered	Percent missing	Number Administered	Percent missing
B18FLGBTQ_DK	Sexual orientation: don't know: description	70	50.7	40	44.2	20	65.0	10	50.0
B18FGENDERQR_OTHER	Gender identity: genderqueer or gender nonconforming: description	40	33.3	30	30.0	10	44.4	#	#
B18FINSRA	Spouse's or partner's income ranges in 2017	210	31.7	120	32.2	60	27.0	20	41.7
B18FNOTSURE_OTHER	Gender identity: a different gender identity: description	20	28.6	20	40.0	10	#	#	#
B18FINEST	Respondent's income ranges in 2017	230	26.7	140	25.0	70	27.4	20	34.8
B18FSPLNPY	Spouse's or partner's student loans: monthly payment amount	2,600	14.3	1,660	13.8	870	14.3	60	27.4
B18CPRIVPEST	Estimated monthly private student loan payment	20	12.5	10	20.0	10	#	#	#
B18FVLAMT	Number of hours volunteered: time frame	5,330	10.1	3610	9.7	1530	11.7	200	5.9

# Rounds to zero.

NOTE: This table displays all non-loop items with more than 10 percent missing responses and does not include items administered to fewer than 10 respondents. This table excludes abbreviated and mini survey completers and partials. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A B&B:08/18 respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## 3.6 Résumé Collection Outcomes

The B&B:08/18 survey asked respondents to upload their résumés, a request not made in previous B&B surveys. Overall, 29 percent of B&B:08/18 respondents chose to upload their résumé, resulting in a total of 4,230 résumés received. Most résumés (70 percent) were received during the early response phase. Another 18 percent of résumés were uploaded during the production phase, and the remaining 13 percent were uploaded during the nonresponse conversion phase. Note that the résumés were used for internal purposes only and are not available with the B&B:08/18 products.

## Chapter 4. Administrative Records Matching

Administrative data is available for the B&B:08 cohort to supplement the survey data and reduce respondent burden. Table 24 identifies the administrative sources available for the B&B:08 cohort across all rounds of data collection and whether the data were new, refreshed to include updated data, or carried forward from the prior round.

**Table 24. Availability of administrative data sources for the B&B:08 cohort by data collection round: 2008–2018**

Data source	Data collection round			
	NPSAS:08	B&B:08/09	B&B:08/12	B&B:08/18
ACT/SAT	N	CO	CO	CO
Central Processing System (CPS)	N	R	R	R
Integrated Postsecondary Education Data System (IPEDS)	N	CO	R	CO
National Student Clearinghouse (NSC)	†	N	CO	CO
National Student Loan Data System (NSLDS)	N	R	R	R
Veterans Benefits Administration (VBA)	†	†	†	N

† Not applicable.

NOTE: N = new data source. CO = data carried over from prior round. R = data carried over from previous round and refreshed.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08); 2008/09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09); 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12); and 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

The refreshed administrative data sources for B&B:08/18 included CPS and NSLDS, both from the U.S. Department of Education’s Federal Student Aid (FSA), and one new source, VBA, was incorporated. This chapter provides details on the processes used to match these three sources and the outcomes.

For all administrative sources, upon receiving the data, several checks were performed to verify completeness and quality. File layouts were compared to input code to ensure files were accurately imported. If an external source provided the personally identifiable information from their database, this information was compared to sample members’ survey data to ensure correct matches. In the event the information did not match, the data were removed, and the sample member was not considered a match. Project staff examined basic summary statistics such as number of records and value ranges (e.g., dates and amounts) to check for potential outliers or abnormalities. Project staff followed up with providers for corrections or clarifications if necessary.

## 4.1 Central Processing System (CPS)

Each year, if applying for federal student aid, students are required to enter information about themselves and their family into the Free Application for Federal Student Aid (FAFSA) form. CPS then processes the FAFSA information and provides it to postsecondary institutions to determine students' eligibility for aid. CPS stores FAFSA completion data for one academic year at a time, requiring one match for each academic year of interest. A match signifies the sample member applied for federal student aid for that academic year.

CPS data were collected for the full B&B:08/18 sample for the 2017–18 and 2018–19 academic years. The 2017–18 data were collected in September 2018, and the 2018–19 data were collected in September 2019. These two latest CPS files are available on the B&B:08/18 restricted-use files (BB18CPS18\_DATAFILE and BB18CPS19DATAFILE). The sample member's SSN and first two letters of their last name were used to match CPS records. Data were transmitted from project staff to FSA using their SSL-encrypted website. Matched records were transmitted back to project staff using EdConnect, software provided by the U.S. Department of Education.

Table 25 summarizes the results of CPS matching for academic years 2017–18 and 2018–19 with the number of cases sent and matched. Four percent of sample members matched for each of the 2017–18 and 2018–19 academic years.

**Table 25. Number and percentage of cases sent to and matched to Central Processing System (CPS), by academic year: 2017–18 and 2018–19**

Academic year	Sample	Sent to CPS <sup>1</sup>		Matched to CPS	
		Number	Percent	Number	Percent of sent
2017–18	17,110	16,870	98.6	730	4.4
2018–19	17,110	16,860	98.5	630	3.7

<sup>1</sup> Records for sample members without Social Security numbers (SSNs) were not sent to CPS. Number of records sent varies since SSNs and names were regularly updated throughout B&B:08/18.  
NOTE: Matches signify the sample member applied for federal student aid for that academic year. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## 4.2 National Student Loan Data System (NSLDS)

In a cooperative effort, project staff and the U.S. Department of Education conducted a match between B&B:08/18 records and NSLDS to obtain Title IV grant and federal student loan-disbursement and outcome data. As with CPS, the match requires SSNs; thus, sample members missing SSNs were not included. All

NSLDS data transfers used a password-protected NCES system, transmitting over an encrypted SSL connection.

The NSLDS data are organized into many separate data files that contain complete Title IV grant and loan history for each sample member through the time of the match, October 2019. The NSLDS match yielded student loan data (at least one loan) for 13,430 sample members, or 78 percent of the sample. The match yielded Title IV grant matches (at least one grant) for 8,890 sample members, or 52 percent of sample members. Table 26 shows the NSLDS match rates for the full sample. See section 5.1 for more information on the 14 NSLDS data files available on the B&B:08/18 restricted-use files (BB18NSLDS\*\_DATAFILE).

**Table 26. Number and percentage of cases sent to and matched to the National Student Loan Data System (NSLDS): 2018**

NSLDS matching results	Number	Percent
<b>Total</b>	<b>17,110</b>	<b>100.0</b>
Sent to NSLDS <sup>1</sup>	16,860	98.5
NSLDS loans		
Matched	13,430	79.6
Did not match	3,430	20.4
NSLDS Title IV grants		
Matched	8,890	52.7
Did not match	7,970	47.3
Not sent to NSLDS	260	1.5

<sup>1</sup> Records for sample members without Social Security numbers were not sent to NSLDS.

NOTE: Matches signify the sample member ever received a federal student loan or Title IV grant. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## 4.3 Veterans Benefits Administration (VBA)

A file match was performed in February 2019 with VBA to identify veterans, amounts of federal veterans' education benefits, and any associated enrollment information. During data collection, a file containing SSN, name, and date of birth was provided to VBA for data matching. The match used SSN as the primary identifier, with the other information used to ensure a match to the proper person. As with NSLDS file matching, all data transmission used an NCES secure file transfer system. Federal veterans' education benefits information was obtained for approximately 970 (6 percent; table 27) of the sample. These source files are not available on the restricted-use files.

**Table 27. Number and percentage of cases sent to and matched to Veterans Benefits Administration (VBA): 2018**

<b>VBA matching results</b>	<b>Number</b>	<b>Percent</b>
<b>Total</b>	<b>17,110</b>	<b>100.0</b>
Sent	16,860	98.5
Matched	970	5.7
Did not match	15,890	94.3
Not sent	250	1.5

NOTE: Records for sample members without Social Security numbers were not sent to VBA. Matches signify that the sample member ever received federal veterans' benefits. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Chapter 5. Data File Processing and Preparation

B&B:08/18 unit-level data were compiled from surveys and matches to government and other administrative databases. These unit-level data, metadata, and instructions files are available to researchers as a set of restricted-use data files. The public can generate tables of estimates and simple regressions based upon restricted-use data via data analysis tools available to the public on the NCES DataLab website (<https://nces.ed.gov/datalab>). For assistance working with the B&B:08/18 restricted-use data and the publicly available DataLab tools, see appendix A. This chapter provides details on the contents of the restricted-use B&B:08/18 files, post-data collection editing of the survey data files, and creation of analysis variables.

### 5.1 Overview of the B&B:08/18 Files

Source and derived data for B&B:08/18 are contained in restricted-use files and documented in detail in the associated codebooks. The restricted-use files listed in table 28 are available to researchers who have applied for and received authorization from NCES to access those files. Researchers may obtain authorization by contacting the Institute of Education Sciences Data Security Office (see <https://nces.ed.gov/statprog/rudman>).

The primary analysis file (BB18DERIVED\_DATAFILE) for the B&B:08 cohort contains data for approximately 17,200 B&B:08 cohort members and more than 1,900 variables, 380 of which were created using data collected for B&B:08/18. VBA data were also used to create analysis variables, but the source files are not available as restricted-use data files. See section 5.5 for more information on the construction of the analysis variables.

**Table 28. B&B:08/18 restricted-use file names, descriptions, and file paths: 2018**

Restricted-use file	Description	File path
B&B:08/18 analysis (derived)	Contains the analytic variables derived from all data sources (as of March 2019) for the 17,200 eligible B&B:08 cohort members. <sup>1</sup> This file contains derived variables from each wave of the study, including the base year (NPSAS:08), the first follow-up (B&B:08/09), the transcript collection in 2009 (PETS:09), the second follow-up (B&B:08/12), and the final follow-up (B&B:08/18).	/DATA/DERIVED/BB18DERIVED_DATAFILE.CSV
B&B:08/18 student interview data	Contains interview source data collected from the 14,670 B&B:08/18 survey respondents.	/DATA/SOURCE/BB18INTERVIEW/BB18INTERVIEW_DATAFILE.CSV

See notes at end of table.



**Table 28. B&B:08/18 restricted-use file names, descriptions, and file paths: 2018—Continued**

<b>Restricted-use file</b>	<b>Description</b>	<b>File path</b>
CPS 2017–18 data	Contains data from CPS for the 660 B&B:08/18 survey respondents whose records matched to a 2017–18 FAFSA.	/DATA/SOURCE/BB18CPS18/BB18CPS18_DATAFILE.CSV
CPS 2018–19 data	Contains data from CPS for the 560 B&B:08/18 survey respondents whose records matched to a 2018–19 FAFSA.	/DATA/SOURCE/BB18CPS19/BB18CPS19_DATAFILE.CSV
Imputation flag	Contains a flag variable that corresponds to each B&B:08/18 derived variable (except those with no missingness) in the B&B:08/18 analysis file indicating its imputation status. This file contains one row for each of the 14,670 B&B:08/18 survey respondents.	/DATA/SOURCE/BB18FLAG/BB18FLAG_DATAFILE.CSV
B&B:08/18 institution	Contains 1,070 data for institutions collected in NPSAS:08 for the B&B:08 eligible cohort.	/DATA/SOURCE/BB18INSTITUTION/BB18INSTITUTION_DATAFILE.CSV
NSLDS loan	Contains loan data extracted from NSLDS for the B&B:08/18 survey respondents who ever received federal loans. This file has one record for each federal loan.	/DATA/SOURCE/BB18NSLDSLOAN/BB18NSLDSLOAN_DATAFILE.CSV
NSLDS loan delinquency	Contains payment delinquency data extracted from NSLDS for the B&B:08/18 survey respondents who were ever delinquent on federal loan payments. This is a historical file of loan delinquency status with separate records for each delinquency period by loan.	/DATA/SOURCE/BB18NSLDSDELINQ/BB18NSLDSDELINQ_DATAFILE.CSV
NSLDS loan deferment	Contains loan deferment data extracted from NSLDS for the B&B:08/18 survey respondents who ever deferred payment on federal loans. This is a historical file of loan deferrals with separate records for each deferment, deferment renewal, or deferment extension by loan.	/DATA/SOURCE/BB18NSLDSDEFER/BB18NSLDSDEFER_DATAFILE.CSV
NSLDS loan disbursement	Contains loan disbursement data extracted from NSLDS for the B&B:08/18 survey respondents who ever received federal loans. This is a historical file with separate records for each loan disbursement. There may be multiple disbursements per loan.	/DATA/SOURCE/BB18NSLDSLOANDIS/BB18NSLDSLOANDIS_DATAFILE.CSV
NSLDS loan forbearance	Contains loan forbearance data extracted from NSLDS for the B&B:08/18 survey respondents who ever had a forbearance on a federal loan. This is a historical file of forbearances with separate records for each forbearance, forbearance renewal, or forbearance extension by loan.	/DATA/SOURCE/BB18NSLDSFORBEAR/BB18NSLDSFORBEAR_DATAFILE.CSV
NSLDS Stafford loan default	Contains Stafford or Direct Loan default data extracted from NSLDS for the B&B:08/18 survey respondents who ever defaulted on a Stafford or Direct Loan. This is a historical file with separate records for each default occurrence on a Stafford or Direct Loan.	/DATA/SOURCE/BB18NSLDSSTAFFDEF/BB18NSLDSSTAFFDEF_DATAFILE.CSV
NSLDS non-Stafford loan default	Contains non-Stafford and non-Direct Loan default data extracted from NSLDS for the B&B:08/18 survey respondents who ever defaulted on a non-Stafford and non-Direct Loan. This file has one record for each defaulted non-Stafford and non-Direct Loan.	/DATA/SOURCE/BB18NSLDSNONSTAFFDEF/BB18NSLDSNONSTAFFDEF_DATAFILE.CSV
NSLDS outstanding interest balance	Contains outstanding interest balance data extracted from NSLDS for the B&B:08/18 survey respondents who ever received federal loans. This is a historical file with separate records for each reported outstanding interest balance update by loan.	/DATA/SOURCE/BB18NSLDSOIB/BB18NSLDSOIB_DATAFILE.CSV
NSLDS outstanding principal balance	Contains outstanding principal balance data extracted from NSLDS for the B&B:08/18 survey respondents who ever received federal loans. This is a historical file with separate records for each reported outstanding principal balance update by loan.	/DATA/SOURCE/BB18NSLDSOPB/BB18NSLDSOPB_DATAFILE.CSV
NSLDS loan repayment history	Contains loan payment history data extracted from NSLDS for the B&B:08/18 survey respondents who ever made a payment on federal loans. This is a historical file of payments with separate records for each loan payment by loan.	/DATA/SOURCE/BB18NSLDSRPMT/BB18NSLDSRPMTTHIS_DATAFILE.CSV
NSLDS loan repayment plan	Contains loan repayment plan data extracted from NSLDS for the B&B:08/18 survey respondents who ever had a reported federal loan repayment plan. This is a historical file of all repayment plans with separate records for each reported repayment plan.	/DATA/SOURCE/BB18NSLDSRPMTPLAN/BB18NSLDSRPMTPLAN_DATAFILE.CSV

See notes at end of table.

**Table 28. B&B:08/18 restricted-use file names, descriptions, and file paths: 2018—Continued**

Restricted-use file	Description	File path
NSLDS loan to IDR application data	Contains loan repayment plan data extracted from NSLDS for the B&B:08/18 survey respondents who ever applied for an IDR plan. This is a historical file with separate records for each loan repayment plan associated with an IDR plan application.	/DATA/SOURCE/BB18NSLDSLOANIDRAPPL/BB18NSLDSLOANIDRAPPL_DATAFILE.CSV
NSLDS IDR plan application data	Contains IDR application data extracted from NSLDS for the B&B:08/18 survey respondents who ever applied for an IDR plan. This is a historical file with separate records for each IDR plan application.	/DATA/SOURCE/BB18NSLDSIDRAPPL/BB18NSLDSIDRAPPL_DATAFILE.CSV
NSLDS award origin	Contains loan award data extracted from NSLDS for the B&B:08/18 survey respondents who ever received federal loans. This is a historical file of loan awards with one record for each award year per respondent.	/DATA/SOURCE/BB18NSLDSAWARD/BB18NSLDSAWARD_DATAFILE.CSV
B&B:08/18 weights	Contains all weight and variance estimation variables for the eleven weights available for the 17,200 eligible B&B:08 cohort members. <sup>1</sup>	/DATA/SOURCE/BB18WEIGHTS/BB18WEIGHTS_DATAFILE.CSV
B&B:08/18 weight history	Contains all intermediate weight adjustment factors as well as the final institution and student weights for the eleven weights available for the 17,200 eligible B&B:08 cohort members. <sup>1</sup>	/DATA/SOURCE/BB18WEIGHTH/BB18WEIGHTH_DATAFILE.CSV

<sup>1</sup> The final eligible sample for B&B:08/18 is 17,070 individuals. However, there were 17,200 B&B:08 cohort members that responded to any prior-round survey or for whom a transcript was received. Thus, they have valid values for prior round derived variables and are included on the derived variable file.

NOTES: CPS = Central Processing System; FAFSA = Free Application For Federal Student Aid; IDR = income-driven repayment; NPSAS = National Postsecondary Student Aid Study; NSLDS = National Student Loan Data System. Data from the 2009 transcript collection are also available on the restricted-use files in their original formats.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

In addition to the analysis variables, many historical files are available for the B&B:08 cohort. To estimate how outcomes vary with time, researchers may want to consider using event history analysis (EHA). EHA methods use more information than alternate methods do by explicitly modelling time, so the results are not driven by arbitrarily determined periods. In addition, EHA methods can accommodate factors that change over time, whereas many other methods treat these factors as unchanging. Appendix H introduces EHA and its application to B&B:08/18 data with minimal technical jargon and without formal statistical notation, formulas, or math beyond arithmetic and logarithms. The examples use simulated data and are designed to mimic the B&B:08/18 restricted-use data.

## 5.2 Post-Data Collection Survey Data Editing

During data collection, quality control checks were performed on all survey items to ensure the quality and accuracy of data. Survey item responses were processed into a data set to be delivered as a restricted-use file (BB18INTERVIEW\_DATAFILE).

Documentation for these variables includes question wording, response options, logical imputations, and administration descriptions (see the facsimile of the full-scale instrument in appendix E). Preparing this survey item data file was a multi-faceted process described in the steps below. This data file was also later used to construct analysis variables.

**Assigning missing data codes.** All missing data from the survey were assigned missing data codes to indicate why data were missing. Project staff defined gate-nest question relationships, in which “gate” questions must first be answered before dependent “nest” questions. Some values were missing due to appropriate question routing (e.g., a respondent with no dependents would not be administered a question about a dependent’s age). These values were assigned a missing data code of -3, item does not apply. If a value was missing because the respondent completed the abbreviated or mini survey and the item was excluded from those versions, the value was assigned a -7, “not included on survey.” Sometimes an item was not administered when, due to prior missing data, it was not possible to determine whether the item applied to the respondent; these items were assigned a value of -4.

Some items received a missing data code when they were administered, but the response could be inferred from other responses. For example, if a form displayed multiple items, each with yes/no checkboxes, and the respondent checked “yes” for at least one item but left all other items missing, it was assumed that the respondent intended for the missing items to be “no.” A value of -5, to indicate an “implied no” was assigned.

Assigning these codes during data collection served as a quality control check for the instrument operation, final data file quality, and documentation accuracy. For example, if an investigation revealed survey routing was not operating properly, an update was deployed to the survey and the item was assigned a -8 value signifying that the item was missing due to an instrument error.

Any final missing data codes were determined to be missing because the respondent did not provide an answer and were assigned a code of -9. See survey missing data codes and descriptions in table 29.

**Table 29. B&B:08/18 survey missing data codes and descriptions: 2018**

<b>B&amp;B:08/18 survey missing data code</b>	<b>Description</b>
-3	Item does not apply to the respondent.
-4	Gate was left blank and it cannot be determined if dependent nested items apply.
-5	Item left blank by respondents, but a positive response was provided for other items in the group. (When some grouped items with a response are positive, a “0” or “no” value is implied for other items in the group left blank.)
-7	Item not included in the abbreviated or mini survey, so respondent did not have an opportunity to provide an answer.
-8	Item is missing data due to an instrument error.
-9	Respondent saw item but did not provide an answer.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Applying logical recodes.** Logical recodes of values were performed when the value of missing items could be definitively determined (as opposed to implied) from answers to previous survey questions. For example, if a respondent answered “yes” to *Voted in 2016 presidential election* (B18FVTNEL), then the downstream item, *Registered to vote* (B18FVTREG), was skipped and logically recoded to “yes.”

**Sanitizing.** All open-ended responses collected in the survey were systematically reviewed since respondents can provide any information they choose so long as it fits within the character limit, sometimes including personally identifiable information. Any personally identifiable information provided in open-ended responses was “sanitized,” or removed from the text string. As an example, we carefully reviewed all entries provided for employer name and job title and removed any information that could identify an individual. All other text was left unchanged. All open-ended text strings released on the restricted-use datasets were sanitized.

**Coding.** Predictive coding systems, or “coder forms,” were used to help respondents assign a code to standardized data elements such as postbaccalaureate institutions, majors for postbaccalaureate education, zip codes of employers and primary residence, occupations, and K–12 schools. For each coder form, respondents entered their answer as a text string. As respondents typed, a keyword search of an underlying database returned a list of possible matches that were displayed in a dropdown menu for respondents to select. See section 3.1.2 for detailed coder form descriptions and examples and see section 3.5.1 for respondent coding rates.

When an item on a coder form was not coded in the survey but an open-ended response was provided, the responses were reviewed to assign a valid code. First, the open-ended responses were automatically processed to match them to a database code, based on an exact match or similar match to database code labels. The remaining uncoded responses were loaded into an application where staff searched the coder database and assigned a code when possible. For example, if the respondent typed “Education- math” into the open-ended form for major but did not select a CIP code, the text string would be compared to all CIP code labels. Though similar, the string is not an exact match to CIP code 13.1311, “Mathematics Teacher Education,” so the text would be loaded into an application for staff review. Then, upon review, staff could assign “Education-math” to CIP code 13.1311 based on the text’s similarity to “Mathematics Teacher Education.”

### 5.2.1 Upcoding

An item's upcode rate is the percentage of previously uncoded, open-ended text responses to that item that were able to be coded by project staff during data editing. Upcode rates ranged from 1 percent for the web nonmobile *Major* coder form to 21 percent for the web mobile *Zip code* coder form. Table 30 shows the upcode rates for coder forms, overall and by mode of completion.

**Table 30. Percentage of uncoded survey responses that were upcoded for B&B:08/18 respondents, by mode of completion and coder form: 2018**

Coder form	Overall	Mode of completion		
		Web nonmobile	Web mobile	Telephone
Postsecondary institution	2.1	1.4	2.6	9.4
Major	1.9	1.0	3.6	5.1
Zip code	9.7	5.1	20.9	3.5
Occupation	10.4	10.0	11.0	12.6
K–12 school	11.0	10.1	11.7	19.5

NOTE: A coder form's percent upcoded is the percentage of open-ended text responses left uncoded during the survey that were assigned a valid code by project staff during data editing. A B&B:08/18 respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 5.2.2 Recoding

In addition to upcoding, for quality control purposes, 10 percent of major and occupation codes assigned in the survey were randomly selected, reviewed, and “recoded” if necessary. The following subsections provide upcoding and recoding rates for each coder form by mode of completion. See section 3.1.2 for detailed coder form descriptions and examples and see section 3.5.1 for survey coding rates. The randomly selected codes were “recoded”; that is, staff “upcoded” the open-ended response and compared the result to the code assigned during the survey. The recoding process resulted in one of three outcomes: (1) the staff-assigned code *agreed* with the original selected in the survey, (2) staff *changed* the code from what was originally selected in the survey, or (3) the original text string provided by the respondent was too vague to code independently, or *uncodable*.

Overall, coding staff agreed with 92 percent of the major codes and 97 percent of the occupation codes selected for recoding. Table 31 shows the percentage of recodes where coding staff agreed with the survey response, changed the survey response, or determined that the open-ended response was uncodable for *Major* and *Occupation* coder forms. Staff agreed with 96 percent of the major codes selected in web nonmobile mode, compared with 86 percent of codes chosen in web mobile

mode ( $p < .0001$ ). They agreed with 97 percent of occupation codes selected in web nonmobile mode, versus 96 percent of codes chosen in web mobile mode ( $p < .05$ ). The *Occupation* coder showed no significant differences by mode in the rates at which text strings were too vague to code. *Major* coder text strings were classified as too vague at a significantly higher rate in telephone mode (10 percent) than in either web nonmobile mode (1 percent;  $p < .0001$ ) or web mobile mode (1 percent;  $p < .0001$ ).

**Table 31. Percentage of recoded survey responses for B&B:08/18 respondents, by recode outcome, mode of completion, and coder form: 2018**

Coder form	Recode agreed				Code changed				Uncodable			
	Overall	Mode of completion			Overall	Mode of completion			Overall	Mode of completion		
		Web nonmobile	Web mobile	Tele-phone		Web nonmobile	Web mobile	Tele-phone		Web nonmobile	Web mobile	Tele-phone
Major	92.4	96.0	86.2	81.7	6.3	3.2	12.6	8.3	1.3	0.8	1.2	10.0
Occupation	96.6	97.0	95.8	95.2	1.2	1.0	1.8	1.1	2.2	2.0	2.3	3.8

NOTE: Ten percent of codes assigned to the Major and Occupation coder forms during the survey were randomly selected for "recoding." The recoding process resulted in one of three outcomes: (1) the staff-assigned code agreed with the original selected in the survey, (2) staff changed the code from what was originally selected in the survey, or (3) the original text string provided by the respondent was too vague to code independently, or uncodable. A B&B:08/18 respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## 5.3 Data Perturbation

In addition to removing all direct personally identifiable information (e.g., names, addresses, SSNs, etc.) to prepare the data files for release, NCES performs a formal disclosure risk analysis. Every effort is made to protect sample members' identities, including performing data perturbation procedures (e.g., "swapping" case data for a small set of cases) on B&B:08/18 data to minimize disclosure risk. All records on all data files (e.g., surveys, institution records, and administrative records) were eligible for swapping.

To perturb the data, variables were selected first. Then, values of the selected variables were exchanged between records within carefully defined groups of respondents using specific, undisclosed swap rates. The swapping procedures, which the Disclosure Review Board reviewed and approved, preserved measures of central tendency but may have slightly increased nonsampling error. Correlations for a variety of variables were also evaluated before and after swapping to verify that the swapping did not affect overall data quality.

## 5.4 Statistical Imputations

Item-level missing data were imputed for most analysis variables included on the primary analysis file (BB18DERIVED\_DATAFILE) on the restricted-use files and available in DataLab. Variables in the source data files were not imputed. Analysis variables with missing data were imputed in accordance with mass imputation procedures described by Krotki, Black, and Creel (2005). First, missing data were filled in for cases where values could be deduced with certainty based upon logical or mathematical relationships among observed variables.<sup>18</sup> Then, the weighted sequential hot deck (WSHD) method was used to replace missing data by imputing plausible values from statistically selected cases with nonmissing values (Cox 1980; Iannacchione 1982).<sup>19</sup> Missing data were imputed separately for each survey section (e.g., Employment or Teaching).

The first stage in the imputation procedure was to determine the pattern and rate of item-level missing data across variables and respondents. Next, respondents were

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<sup>18</sup> An example of logical imputation follows: if a respondent has valid values for the total number of dependents and the number of dependent children but not the number of other dependents, the third value may be calculated as the difference of the first value minus the second value. Likewise, if a respondent has zero total dependents, it may be logically inferred that the student has zero dependent children.

<sup>19</sup> The term *hot deck* refers to an imputation method in which valid values in the current survey dataset are used to impute missing values. The term dates back to when a survey dataset was stored on a deck of computer punch cards; cards from the same dataset were hot or warm to the touch from recent processing.



pooled into homogeneous groups to ensure missing data were imputed from similar respondents. Groups were created using nonparametric classification, or regression trees (Breiman et al. 1984), from related variables with no missing data (including variables imputed in previous sections). The related variables used to create the groups varied depending on what was being imputed, but were generally based on demographic characteristics, characteristics of the NPSAS institution, and other variables related to the analysis variable to be imputed. Within these classes, the WSHD method was used to select donors. Substantively related variables were grouped into blocks, and blocks were imputed simultaneously for a respondent to maintain relationships between the variables. Variables or blocks with lower rates of missing data were imputed first so that they could be used to impute other analysis variables with higher levels of missingness in subsequent stages of imputation.

In the second stage of imputation, the missingness was reintroduced to one variable or block at a time, and the missing values were reimputed. This time, all other variables in the section imputed during the first stage were available in forming the imputation classes. On its own, the WSHD method may not preserve relationships between variables in the dataset. Thus, the WSHD method was implemented with the cyclic p-partition hot deck (Marker, Judkins, and Winglee 2002) technique (cycling), as discussed in Judkins (1997), which is more likely to produce plausible values and maintain variable relationships. For B&B:08/18, there were five iterations of imputation, which improved quality without significantly slowing down the imputation process.

To reduce error due to imputation, quality checks were performed throughout the imputation process. In particular, the distributions of the observed, imputed, and complete data were compared. Item response rates and distributions (observed and imputed) are shown in appendix I for all 127 imputed variables.

## 5.5 Analysis Variable Construction

The primary analysis file (BB18DERIVED\_DATAFILE) and NCES' online DataLab tool not only contain analytic variables created for B&B:08/18 (designated with the prefix "B3"), but they also contain analysis variables constructed for each prior round (i.e., NPSAS:08, B&B:08/09, PETS:09, and B&B:08/12). Analysts derived the analytic variables by examining data available from the various data sources, prioritizing the data sources on an item-by-item basis, and reconciling discrepancies within and between sources. In some cases, staff created derived variables by recoding values or combining items within or across sources. In other cases, they assigned the value from the available source with the highest priority. Further detail on variable derivation is available in

PowerStats on the “Get more info” tab for each variable and in the codebooks provided with the restricted-use files. A complete list of analysis variables is provided in appendix J.

Most, but not all, derived variables have undergone imputation to address item-level missingness (e.g., missing data that occurs when respondents to a survey round declined to provide a response). All imputed variables have a corresponding flag variable that indicates whether the value was reported or imputed. The flags are located on a separate restricted-use data file (BB18FLAG\_DATAFILE) and are denoted with a suffix of “\_F.” For more information on the imputation process, see section 5.4 above. When an item was not imputed, the missing data could potentially affect the representativeness of the variable’s weighted estimate (depending on the amount of missingness; small amounts of missingness would not appreciably affect the estimate). Missing data codes (table 32) differentiate reasons for missing data.

A second type of missingness occurs due to unit nonresponse, that is, when sample members did not respond to the data collection round in which that variable was constructed. In these cases, the representativeness of the variable’s weighted value is not affected because the analysis weights correct for unit nonresponse. To distinguish missing data for nonresponding sample members (i.e., unit-level missing) from item-level data that were not unimputed, a value of “-8” is used. This missing data code, “-8,” is new for B&B:08 cohort data and, specifically, the B&B:08/18 follow-up. As such, missing data from earlier rounds that were coded differently (e.g., using “-9”) may have been updated to “-8” if the data were missing due to unit nonresponse in the earlier round.

Table 32 provides descriptions for the missing data codes presented on the analysis file. As shown in the table, the definitions of missing data codes are largely consistent across variables; exceptions are noted. Users should refer to the codebooks provided with the restricted-use files for missing data code documentation, as well as for more detail on each variable’s derivation.<sup>20</sup>

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<sup>20</sup> To ensure missing data codes are not inadvertently analyzed as valid values, formatting programs provided on the restricted-use files convert missing data codes to the statistical software’s system value for missing. During this conversion, value labels may not be preserved. Instruction files are included on the restricted-use files to aid in the use of these programs.

**Table 32. B&B:08/18 analysis variable missing data codes and descriptions: 2018**

Missing data code	Item source	Description(s)	Exceptions
-1	IPEDS	Not classified	†
-1	Any survey	Respondent selected “don’t know” as a response	B3MARRDATE <sup>1</sup>
-2	IPEDS	Item does not apply	†
-3 <sup>2</sup>	Any data source	Item does not apply, i.e., the item was “skipped” or a “legitimate skip”	B3BADEPCHILD <sup>3</sup>
-6	Any data source	Value missing because the assigned value was not within the valid range for the item, i.e., “out of bounds”	†
-7 <sup>4</sup>	Any survey	Value missing because the respondent completed the abbreviated survey, in which this item was not administered	†
-8	Any data source	Variable not created for the nonrespondent (unit-level nonresponse)	B3BADEPCHILD <sup>3</sup>
-9	Any data source	Missing (item-level missingness)	†
-14	Transcripts	Multiple values possible	†
99999	Any data source	Foreign country (zip code items)	†

† Not applicable.

<sup>1</sup> B3MARRDATE uses -1 to identify widowed respondents.

<sup>2</sup> Labels may differ by variable for this value to provide more information about the respondents to whom the variable does not apply. For example, for the variable B2CURENRL, “Currently enrolled in 2012,” a respondent may have a value of -3, “No post-bachelor’s enrollment.”

<sup>3</sup> Because the item B3BADEPCHILD has valid negative values, the value “-3333” is used to denote “Item does not apply, i.e., the item was ‘skipped’.” and “-8888” is used to denote “Variable not created for the respondent (unit-level nonresponse).”

<sup>4</sup> This value only applies to the variable I1IPEDS, “First postsecondary institution IPEDS ID.” Most variables that use abbreviated survey items were imputed and thus do not need this missing data code.

NOTE: Missing data code descriptions vary across sources and variables and will not be used for all items for a given source. Users should refer to the codebook for each data file for appropriate value labels, descriptions, and additional information.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Chapter 6. Weighting and Variance Estimation

This chapter provides information about the weighting procedures and variance estimation for B&B:08/18. The use of weights is necessary to produce estimates that are representative of the target population of 2007–08 baccalaureate recipients (see section 2.1 for population details). When testing hypotheses (e.g., conducting  $t$  tests, regression analyses, etc.) with weighted data from a study with a complex sampling design, such as B&B:08/18, analysts should properly estimate variances using methods such as bootstrap replication and Taylor series linearization. Bootstrap replication is used in the publicly available tools in DataLab, and both methods are possible using the restricted-use files. Specifically, the restricted-use files include bootstrap replicate weights as well as primary sampling unit (PSU) and stratum identifiers, with and without the correction for assuming a finite population.

The development of statistical analysis weights for the B&B:08/18 sample is discussed in section 6.1. Section 6.2 discusses the weighted and unweighted response rates. Section 6.3 discusses the accuracy of B&B:08/18 estimates and the potential for nonresponse bias. Analysis procedures that can be used to produce unbiased estimates of sampling variances are discussed in section 6.4. This section further describes how the bootstrap replicate weights, PSU variables, and Taylor series strata were constructed. Also included in this section is a discussion of the design effects that measure the precision of survey estimates.

### 6.1 Analysis Weights

As of the B&B:08/12 release, the B&B:08 cohort had six analysis weights available (WTA000–WTF000), and five more were developed to analyze the B&B:08/18 data (WTG000–WTK000). Each B&B:08/18 weight allows for the creation of population estimates from a specific subsample of the B&B:08 cohort based on the group's response pattern to B&B:08/18 and prior collections.

Tables 33-A and 33-B provide analysis weights available as of B&B:08/12 and B&B:08/18, respectively. The tables include each weight's respondent description, sample size, and response pattern. Generally, a cross-sectional weight should be applied when analyzing participant data within one data collection (e.g., WTG000 for cross-tabulations of employment and enrollment as of B&B:08/18), and a longitudinal weight should be applied when analyzing respondent data across multiple years (e.g., WTH000 for trend analyses of employment status in 2008, 2012,

and 2018). The remainder of this section will only discuss the development of analysis weights WTA000–WTF000, the five weights developed for analyzing data from the B&B:08/18 data collection. For details on prior-round weight construction, see the respective data file documentation reports (*2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* [Cominole et al. 2010]; *2008/09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09) Data File Documentation* [Wine et al. 2013]; *2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12) Data File Documentation* [Cominole, Shepherd, and Siegel 2015]).

**Table 33-A. Respondent description, sample sizes and response pattern for analysis weights as of B&B:08/12: 2012**

Analysis weight	Respondent description	Sample size	Response pattern			
			NPSAS:08 study member	B&B:08/09	PETS:09 (transcript)	B&B:08/12
WTA000	Students who received a bachelor's degree in the 2007–08 academic year and responded to the 2009 follow-up survey	15,050	—	Yes	—	—
WTB000	Students who received a bachelor's degree in the 2007–08 academic year and for whom an undergraduate transcript was collected. Use this weight if you select only transcript variables	16,070	—	—	Yes	—
WTC000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the 2009 follow-up survey, and for whom an undergraduate transcript was collected	14,010	—	Yes	Yes	—
WTD000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2012 follow-up survey	14,560	Yes	—	—	Yes
WTE000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2009 and 2012 follow-up surveys	13,490	Yes	Yes	—	Yes
WTF000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2009 and 2012 follow-up surveys and for whom an undergraduate transcript was collected	12,570	Yes	Yes	Yes	Yes

— Response to this round does not factor into inclusion for the weight.

NOTE: NPSAS:08 = 2007–08 National Postsecondary Student Aid Study. PETS:09 = 2009 Postsecondary Education Transcript Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12).

**Table 33-B. Respondent description, sample sizes and response pattern for analysis weights created for B&B:08/18: 2018**

Analysis weight	Respondent description	Sample size	Response pattern				
			NPSAS:08 study member	B&B:08/09	PETS:09 (transcript)	B&B:08/12	B&B:08/18
WTG000	<b>B&amp;B:08/18 response:</b> Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2018 follow-up survey	14,670	Yes	—	—	—	Yes
WTH000	<b>B&amp;B:08/18 and B&amp;B:08/12 response:</b> Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2012 and 2018 follow-up surveys	13,270	Yes	—	—	Yes	Yes
WTI000	<b>B&amp;B:08/18 and transcript response:</b> Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08 and the 2018 follow-up survey, and for whom an undergraduate transcript was collected	13,670	Yes	—	Yes	—	Yes
WTJ000	<b>B&amp;B:08/18, B&amp;B:08/12, and transcript response:</b> Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, responded to the 2012 and 2018 follow-up surveys, and for whom an undergraduate transcript was collected	12,380	Yes	—	Yes	Yes	Yes
WTK000	<b>B&amp;B:08/18, B&amp;B:08/12, B&amp;B:08/09, and transcript response:</b> Students who received a bachelor's degree in the 2007–08 academic year, responded to all surveys (2007–08, 2009, 2012, 2018), and for whom an undergraduate transcript was collected	11,550	Yes	Yes	Yes	Yes	Yes

— Response to this round does not factor into inclusion for the weight.

NOTE: NPSAS:08 = 2007–08 National Postsecondary Student Aid Study. PETS:09 = 2009 Postsecondary Education Transcript Study.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Because the B&B:08/18 sample members are a subset of the NPSAS:08 sample,<sup>21</sup> all weights for analyzing the B&B:08 cohort were constructed from the NPSAS:08

<sup>21</sup> Chapter 2 details NPSAS:08 sampling and B&B:08/18 subsampling procedures.

weights. Specifically, the initial base weight for B&B:08/18 was calculated as the NPSAS:08 student design weight with a subsampling adjustment. Then, construction of each of the five B&B:08/18 weights adjusted the base weight to account for patterns of nonresponse. The weights were then poststratified (i.e., they were calibrated) to weighted NPSAS:08 estimates and population estimates from the IPEDS:2007–08 Completions file (C2008\_a).<sup>22</sup>

Using a weighting methodology described by Folsom and Singh (2000), all nonresponse and poststratification weighting adjustments were computed using the procedure WTADJUST in SUDAAN (RTI International 2012). The WTADJUST procedure is designed such that the sum of the unadjusted weights for all eligible sample members equals the sum of the adjusted weights for the respondents. It uses a constrained logistic model to predict the likelihood a sample member would respond, using bounds for adjustment factors and bounds on variance inflation.<sup>23</sup> These bounds control for extreme weight values and reduce the design effect due to unequal weighting. Weighting staff set the initial bounds before running WTADJUST, and the procedure determines the actual minimum and maximum adjustment factors within the bounds for model convergence. A key feature and advantage of this procedure is that the weight adjustments and weight trimming and smoothing are all accomplished in one step.

### 6.1.1 Initial Base Weight for B&B:08/18

As mentioned above, the B&B:08/18 initial base weight was derived from the NPSAS:08 weights. The weight components from NPSAS:08 compensated for the unequal probability of selection of institutions and students in the NPSAS:08 sample. These components were as follows:

1. institution sampling weight (WT1);
2. institution multiplicity adjustment (WT2);
3. institution poststratification adjustment (WT3);
4. institution nonresponse adjustment (WT4);
5. student sampling weight (WT5);
6. student multiplicity adjustment (WT6); and
7. student unknown eligibility adjustment (WT7).

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<sup>22</sup> IPEDS data files can be downloaded from the online IPEDS data center at <https://nces.ed.gov/ipeds/use-the-data>.

<sup>23</sup> The exact formula for the weight-adjustment factors calculated by the SUDAAN WTADJUST procedure can be found in the SUDAAN User's Manual (RTI International 2012).

Because the B&B:08 cohort initially included 500 NPSAS:08 survey nonrespondents, subsampled with probabilities proportional to the NPSAS:08 student weight, an additional adjustment (BB18WT1) was required for the B&B:08/18 base weight. The base weight was formed as the product of these eight adjustment factors. Specifically, for each sample member, the B&B:08/18 base weight was computed as

$$\text{B\&B:08/18 base weight} = \text{WT1} \times \text{WT2} \times \text{WT3} \times \text{WT4} \times \text{WT5} \times \text{WT6} \times \text{WT7} \times \text{BB18WT1}$$

### 6.1.2 *Nonresponse Adjustments*

The two main reasons that B&B:08/18 sample members did not respond to the survey or were nonrespondents were that they were never located or that they were located but did not complete the survey. Because the distributions of characteristics were statistically different between these two groups (i.e., not located and located but nonresponding) and these characteristics were likely predictors of both response status and survey outcomes, adjustments for them were constructed separately. The nonresponse adjustment model for sample members not located included the full B&B:08/18 eligible sample of 17,070 individuals. And a separate nonresponse model for located nonrespondents was conducted for each of the five new analysis weights. These models included all 16,380 sample members who were located and eligible for the 2018 survey.

All nonresponse adjustment models included predictor (independent) variables that were predictive of both response status and survey outcomes and were nonmissing for both respondents and nonrespondents. Also included were predictor variables used in the NPSAS:08 nonresponse adjustment models. The following variables were identified for inclusion:

- control of baccalaureate-granting institution (categorical, from NPSAS:08);
- region of baccalaureate-granting institution (categorical, from NPSAS:08);
- baccalaureate-granting institution total enrollment from IPEDS 2007–08 file (categorical, from NPSAS:08);
- age group as of December 31, 2007 (categorical, from NPSAS:08);
- veteran status (yes/no, from B&B:08/18);
- race/ethnicity (categorical, from NPSAS:08);
- sex (male/female/unknown, from NPSAS:08);
- SSN obtained from baccalaureate-granting institution enrollment list (yes/no, from NPSAS:08);



- Pell Grant amount received in 2007–08 (categorical, from NPSAS:08);
- Direct Loan amount received in 2007–08 (quartiles, from NPSAS:08);
- Parent PLUS Loan amount received in 2007–08 (quartiles, from NPSAS:08);
- federal aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- institution aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- state aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- any aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- baccalaureate degree major (categorical, from NPSAS:08);
- federal loan default status as of Oct. 31, 2019 (yes/no/not applicable, from B&B:08/18);
- percent of federal student loans that is still owed as of Oct. 31, 2019 (categorical, from B&B:08/18); and
- cumulative amount borrowed in federal student loans as of Oct. 31, 2019 (categorical, from B&B:08/18).

To identify significant interaction terms, the chi-square automatic interaction detection (CHAID) technique was performed (Kass 1980). CHAID is a hierarchical clustering algorithm that begins with all sample members included in the adjustment model, cycles over each predictor variable to identify the variable most predictive of response status, and then checks to see if there is a combination of categories such that the response rate is statistically different between the subgroups created by the combination of values. If a variable and combination of values are identified, the algorithm continues over each subgroup, attempting to identify another variable and another subgroup with significantly different response rates. The algorithm runs as long as significant differences among subgroups continue to be identified. Each set of variables identified is then defined as an interaction term to be included in the adjustment model.

To minimize the risk of nonconvergence due to small cell sizes, weighting staff allowed up to three-way interactions before stopping the algorithm. After the predictor variables and interaction terms were finalized, they were included in the weight adjustment models. However, any predictor variables or interaction terms that impeded convergence for the model were collapsed into other levels or dropped.

Before running SUDAAN's WTADJUST procedure as described above, weighting staff set an initial lower bound for the nonresponse adjustment factors at 1 but did

not set any upper limits. Once convergence of the model was achieved, weight adjustment bounds were tightened to reduce the magnitude of the weight adjustment factors and the unequal weighting effects (UWEs). The results of the nonresponse adjustment models follow.

**Not located nonresponse adjustment (BB18WT2).** Table 34 shows the final predictor variables used in the weight adjustment model for eligible sample members not located and the average weight adjustment factor resulting from each variable. To achieve model convergence, the final lower bound was 1 and the final upper bound was set to 15. The not located adjustment factor has the following characteristics:

- minimum: 1.00;
- median: 1.03; and
- maximum: 8.87.

**Table 34. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:08/18 sample members not located, by model predictor variable: 2018**

Model predictor variable	Number located and eligible	Weighted response rate	Average nonresponse adjustment factor (BB18WT2)
<b>Total</b>	<b>16,380</b>	<b>92.60</b>	<b>1.07</b>
Control of baccalaureate-granting institution <sup>1</sup>			
Public	9,480	93.40	1.06
Private nonprofit	6,080	91.50	1.07
Private for-profit	820	90.40	1.09
Region of baccalaureate-granting institution <sup>1,2</sup>			
New England	840	95.10	1.04
Mideast	2,870	91.40	1.07
Great Lakes	2,580	95.00	1.04
Plains	2,080	90.50	1.10
Southeast	3,750	92.40	1.07
Southwest	1,330	92.70	1.07
Rocky Mountains	780	96.00	1.04
Far West	1,930	90.90	1.08
Outlying areas	220	92.50	1.07
Total enrollment of baccalaureate-granting institution <sup>1,3</sup>			
1–4,760	4,100	93.70	1.06
4,761–13,042	4,070	91.60	1.08
13,043–27,210	4,110	90.80	1.08
27,211 or more	4,090	94.30	1.05

See notes at end of table.

**Table 34. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:08/18 sample members not located, by model predictor variable: 2018—Continued**

<b>Model predictor variable</b>	<b>Number located and eligible</b>	<b>Weighted response rate</b>	<b>Average nonresponse adjustment factor (BB18WT2)</b>
Pell Grant amount received in 2007–08 <sup>4</sup>			
None	9,710	92.40	1.07
\$1–\$2,155	2,280	93.90	1.06
\$2,156–\$4,309	2,540	96.40	1.03
\$4,310 or more	1,640	89.20	1.11
Unknown	200	90.00	1.11
Direct Loan amount received in 2007–08 <sup>3</sup>			
None	7,280	89.90	1.10
\$1–\$4,410	2,280	95.40	1.04
\$4,411–\$5,500	4,370	96.70	1.03
\$5,501–\$6,490	200	98.70	1.01
\$6,491 or more	2,240	93.10	1.07
Parent PLUS Loan amount received in 2007–08 <sup>3</sup>			
None	15,360	92.30	1.07
\$1–\$5,000	260	94.20	1.03
\$5,001–\$9,396	250	98.20	1.01
\$9,397–\$14,000	260	98.90	1.01
\$14,001 or more	260	98.80	1.01
Federal aid status in 2007–08			
Received	11,190	95.20	1.05
Did not receive	5,190	89.20	1.11
Institutional aid status in 2007–08			
Received	8,400	95.70	1.04
Did not receive	7,980	90.60	1.10
State aid status in 2007–08			
Received	6,570	95.90	1.04
Did not receive	9,810	91.40	1.08
Any aid status in 2007–08			
Received	13,950	94.90	1.05
Did not receive	2,430	85.80	1.17
Social Security number available			
Available	16,030	93.50	1.06
Not available	350	70.80	1.48
Veteran status in 2007–08			
Yes	780	95.80	1.04
No	15,590	92.50	1.07
Ethnicity			
Hispanic	1,440	91.20	1.09
Non-Hispanic	14,500	94.50	1.06
Unknown	430	74.50	1.39
Sex			
Male	6,830	91.60	1.08
Female or unknown	9,550	93.40	1.06

See notes at end of table.

**Table 34. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:08/18 sample members not located, by model predictor variable: 2018—Continued**

Model predictor variable	Number located and eligible	Weighted response rate	Average nonresponse adjustment factor (BB18WT2)
Age as of December 31, 2007			
15–23	11,050	94.20	1.05
24–29	3,170	90.70	1.09
30 or older or unknown	2,150	88.20	1.13
Baccalaureate major			
Liberal arts	2,030	93.10	1.06
Psychology/history	1,960	95.20	1.04
Biology	2,600	92.70	1.06
Physical sciences	450	95.50	1.04
Mathematics and statistics	320	97.60	1.01
Computer and information sciences	700	83.00	1.15
Engineering	1,170	94.80	1.04
Education	1,110	95.50	1.04
Business	1,820	92.70	1.06
Health professions	1,020	92.30	1.08
Social sciences	90	95.40	1.04
Agricultural sciences	1,700	90.70	1.10
Missing/unknown	1,400	89.50	1.11
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>3</sup>			
None	3,740	88.40	1.12
\$1–\$16,735	3,140	92.80	1.08
\$16,736–\$27,586	3,170	94.50	1.06
\$27,587–\$57,914	3,150	94.90	1.04
\$57,915 or more	3,180	96.20	1.04
Percent of federal student loans that is still owed as of Oct. 31, 2019 <sup>3</sup>			
0 percent, federal student loan(s) repaid	5,700	95.40	1.04
1–69 percent	1,750	94.40	1.06
70–116 percent	1,780	96.40	1.04
117–146 percent	1,720	94.70	1.04
147 percent or more	1,690	89.80	1.11
Not applicable, did not receive federal student loan(s)	3,740	88.40	1.12
Federal loan default status as of Oct. 31, 2019			
Yes, defaulted on federal student loan(s)	1,420	87.80	1.15
No, did not default on federal student loan(s)	11,220	95.70	1.04
Not applicable, did not receive federal student loan(s)	3,740	88.40	1.12
CHAID segments in nonresponse adjustment model			
White, non-Hispanic; American Indian or Alaska Native, non-Hispanic; or More than one race, non-Hispanic; Not in federal loan default or not applicable for federal loan default; Cumulative amount borrowed from federal loans is \$27,586 or less	7,540	96.10	1.06
White, non-Hispanic; American Indian or Alaska Native, non-Hispanic; or More than one race, non-Hispanic; Not in federal loan default or not applicable for federal loan default; Cumulative amount borrowed from federal loans is between \$27,587 and \$57,914	1,940	98.80	1.01
White, non-Hispanic, American Indian or Alaska Native, non-Hispanic, or More than one race, non-Hispanic; Not in federal loan default or not applicable for federal loan default; Cumulative amount borrowed from federal loans is \$57,915 or more	1,770	96.20	1.04

See notes at end of table.

**Table 34. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:08/18 sample members not located, by model predictor variable: 2018—Continued**

Model predictor variable	Number located and eligible	Weighted response rate	Average nonresponse adjustment factor (BB18WT2)
White, non-Hispanic, American Indian or Alaska Native, non-Hispanic, or More than one race, non-Hispanic; In federal loan default; Major in 2007–08 was engineering or biology	120	71.80	1.47
White, non-Hispanic, American Indian or Alaska Native, non-Hispanic, or More than one race, non-Hispanic; In federal loan default; Major in 2007–08 was liberal arts, education, business, health sciences, or agricultural sciences	420	89.60	1.09
White, non-Hispanic, American Indian or Alaska Native, non-Hispanic, or More than one race, non-Hispanic; In federal loan default; Major in 2007–08 was physical sciences, computer and information sciences, social sciences, or missing/unknown	120	99.00	1.01
White, non-Hispanic, American Indian or Alaska Native, non-Hispanic, or More than one race, non-Hispanic; In federal loan default; Major in 2007–08 was psychology/history or mathematics and statistics	130	96.70	1.03
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was physical sciences, mathematics and statistics, engineering, or social sciences	130	100.00	1.00
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was liberal arts, business, or agricultural sciences	420	91.50	1.08
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was computer and information sciences, health professions, or missing/unknown	240	72.60	1.43
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was psychology/history, Biology, or Education	390	97.80	1.01
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was between \$1 and \$5,500; Attended institution in New England, Great Lakes, or Rocky Mountains	180	99.90	1.00
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was between \$1 and \$5,500; Attended institution in the Mideast, Plains, Southeast, Southwest, Far West, or Outlying areas	950	92.90	1.07
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was between \$5,501 and \$6,490	50	100.00	1.00
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$6,491 or more; Attended a public institution	290	97.00	1.03
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$6,491 or more; Attended a private nonprofit institution	240	83.10	1.16
Black or African American, non-Hispanic, Hispanic, or Native Hawaiian or other Pacific Islander, non-Hispanic; Direct Loan amount received in 2007–08 was \$6,491 or more; Attended a private for-profit institution	110	99.30	1.01
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Percentage of loans that is still owed is \$0	190	88.40	1.09
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Percentage of loans that is still owed is \$1 or more	120	99.90	1.00
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was \$0; Percentage of loans that is still owed is unknown	330	78.60	1.18

See notes at end of table.

**Table 34. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:08/18 sample members not located, by model predictor variable: 2018—Continued**

Model predictor variable	Number located and eligible	Weighted response rate	Average nonresponse adjustment factor (BB18WT2)
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was between \$1 and \$5,500; Major in 2007–08 was mathematics and statistics, computer and information sciences, or engineering	90	99.90	1.00
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was between \$1 and \$5,500; Major in 2007–08 was psychology/history, biology, physical sciences, business, social sciences, or agricultural sciences	230	96.40	1.03
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was between \$1 and \$5,500; Major in 2007–08 was liberal arts, education, health professions, or missing/unknown	80	100.00	1.00
Asian, non-Hispanic or Other, non-Hispanic; Direct Loan amount received in 2007–08 was \$5,501 or more	70	99.90	1.00
Unknown race and ethnicity; Received federal aid in 2007–08	150	89.20	1.33
Unknown race and ethnicity; Did not receive any federal aid in 2007–08	80	27.60	1.51

<sup>1</sup> Control, region, and total enrollment of institution are based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying areas = Puerto Rico.

<sup>3</sup> Variable grouped by quartile for use in the adjustment model.

<sup>4</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

NOTE: CHAID = chi-square automatic interaction detection. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Located nonresponse adjustments (BB18GWT1 – BB18KWT1).** Table 35 shows the final predictor variables used in the adjustment model for eligible, located sample members who were not considered respondents for analysis weight WTG000 (B&B:08/18 response) and the average weight adjustment factor resulting from each variable (BB18GWT1). To achieve model convergence, the final lower bound was 1, and the final upper bound was 5. The nonresponse adjustment factor for weight G has the following characteristics:

- minimum: 1.00;
- median: 1.11; and
- maximum: 3.47.

**Table 35. Number of weight G respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18GWT1)
<b>Total</b>	<b>14,670</b>	<b>84.60</b>	<b>1.15</b>
Control of baccalaureate-granting institution <sup>1</sup>			
Public	8,520	85.30	1.15
Private nonprofit	5,460	84.30	1.15
Private for-profit	690	77.40	1.23
Region of baccalaureate-granting institution <sup>1,2</sup>			
New England	740	82.90	1.17
Mideast	2,520	80.60	1.20
Great Lakes	2,330	87.00	1.13
Plains	1,890	88.40	1.10
Southeast	3,350	84.50	1.17
Southwest	1,180	81.90	1.18
Rocky Mountains	730	91.20	1.09
Far West	1,730	85.80	1.14
Outlying areas	200	82.20	1.20
Total enrollment of baccalaureate-granting institution <sup>1,3</sup>			
1–4,760	3,690	84.80	1.16
4,761–13,042	3,620	84.70	1.15
13,043–27,210	3,680	83.30	1.17
27,211 or more	3,680	85.50	1.14
Pell Grant amount received in 2007–08 <sup>4</sup>			
None	8,620	84.00	1.16
\$1–\$2,155	2,070	83.30	1.17
\$2,156–\$4,309	2,300	86.90	1.14
\$4,310 or more	1,490	87.60	1.12
Unknown	190	89.40	1.09
Direct Loan amount received in 2007–08 <sup>3</sup>			
None	6,470	83.40	1.16
\$1–\$4,410	2,080	85.40	1.15
\$4,411–\$5,500	3,940	86.90	1.14
\$5,501–\$6,490	190	76.00	1.27
\$6,491 or more	2,000	85.30	1.15
Parent PLUS Loan amount received in 2007–08 <sup>3</sup>			
None	13,770	84.30	1.16
\$1–\$5,000	230	90.90	1.09
\$5,001–\$9,396	220	84.60	1.18
\$9,397–\$14,000	240	87.60	1.12
\$14,001 or more	220	89.80	1.08
Federal aid status in 2007–08			
Received	10,130	86.10	1.14
Did not receive	4,540	82.60	1.18
State aid status in 2007–08			
Received	5,990	87.80	1.12
Did not receive	8,680	83.40	1.17
Any aid status in 2007–08			
Received	12,610	86.80	1.14
Did not receive	2,060	78.00	1.26

See notes at end of table.

**Table 35. Number of weight G respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18GWT1)
Social Security number available			
Available	14,390	84.70	1.15
Not available	280	82.70	1.18
Veteran status in 2007–08			
Yes	680	79.40	1.22
No	13,990	84.80	1.15
Race/ethnicity			
White, non-Hispanic	10,480	85.50	1.14
Black or African American, non-Hispanic	1,330	84.40	1.17
Hispanic	1,290	88.40	1.12
Asian, non-Hispanic	930	79.20	1.22
American Indian or Alaska Native, non-Hispanic	50	86.70	1.19
Native Hawaiian or other Pacific Islander, non-Hispanic	50	73.50	1.34
Other, non-Hispanic	30	92.80	1.09
More than one race, non-Hispanic	350	88.70	1.12
Unknown race and ethnicity	180	62.70	1.58
Ethnicity			
Hispanic	1,290	88.40	1.12
Non-Hispanic	13,040	85.50	1.15
Unknown	340	69.90	1.46
Sex			
Male	6,020	80.90	1.20
Female	8,650	87.40	1.12
Age as of December 31, 2007			
15–23	10,000	86.60	1.13
24–29	2,790	80.60	1.21
30 or older or unknown	1,880	81.20	1.21
Baccalaureate major			
Liberal arts	1,790	84.20	1.16
Psychology/history	1,790	88.80	1.11
Biology	2,380	88.30	1.11
Physical sciences	420	73.70	1.18
Mathematics and statistics	300	90.80	1.09
Computer and information sciences	610	74.30	1.22
Engineering	1,050	85.20	1.16
Education	1,010	87.50	1.13
Business	1,560	79.90	1.24
Health professions	930	86.60	1.14
Social sciences	80	84.30	1.24
Agricultural sciences	1,510	85.10	1.16
Missing/unknown	1,250	85.30	1.16
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>3</sup>			
None	3,280	82.30	1.18
\$1–\$16,735	2,800	81.10	1.21
\$16,736–\$27,586	2,840	85.40	1.15
\$27,587–\$57,914	2,840	87.80	1.11
\$57,915 or more	2,910	88.90	1.11

See notes at end of table.



**Table 35. Number of weight G respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18GWT1)
Percent of federal student loans that is still owed as of Oct. 31, 2019 <sup>3</sup>			
0 percent, federal student loan(s) repaid	5,130	84.30	1.16
1–69 percent	1,580	88.20	1.10
70–116 percent	1,630	87.60	1.13
117–146 percent	1,570	87.80	1.13
147 percent or more	1,480	82.90	1.17
Not applicable, did not receive federal student loan(s)	3,280	82.30	1.18
Federal loan default status as of Oct. 31, 2019			
Yes, defaulted on federal student loan(s)	1,200	79.30	1.25
No, did not default on federal student loan(s)	10,190	86.70	1.13
Not applicable, did not receive federal student loan(s)	3,280	82.30	1.18
CHAID segments in nonresponse adjustment model			
Did not receive any institutional aid in 2007–08; Major in 2007–08 was engineering, education, or health professions; Not Hispanic or unknown whether Hispanic	1,270	83.40	1.18
Did not receive any institutional aid in 2007–08; Major in 2007–08 was engineering, education, or health professions; Hispanic	110	98.50	1.01
Did not receive any institutional aid in 2007–08; Major in 2007–08 was liberal arts, business, agricultural sciences, or missing/unknown; Attended a public institution	2,170	83.10	1.18
Did not receive any institutional aid in 2007–08; Major in 2007–08 was liberal arts, business, agricultural sciences, or missing/unknown; Attended a private nonprofit or private for-profit institution	1,180	75.30	1.28
Did not receive any institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Did not receive any state aid in 2007–08	300	59.90	1.64
Did not receive any institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Received state aid in 2007–08	150	93.40	1.08
Did not receive any institutional aid in 2007–08; Major in 2007–08 was psychology/history or biology; Male	690	81.30	1.20
Did not receive any institutional aid in 2007–08; Major in 2007–08 was psychology/history or biology; Female	1,070	91.50	1.08
Did not receive any institutional aid in 2007–08; Major in 2007–08 was mathematics and statistics	70	96.00	1.03
Received institutional aid in 2007–08; Major in 2007–08 was mathematics and statistics, engineering, or business; Age as of December 31, 2007, was between 15 and 23	1,210	82.50	1.19
Received institutional aid in 2007–08; Major in 2007–08 was mathematics and statistics, engineering, or business; Age as of December 31, 2007, was between 24 and 29	280	94.00	1.05
Received institutional aid in 2007–08; Major in 2007–08 was mathematics and statistics, engineering, or business; Age as of December 31, 2007, was 30 or older or was unknown	90	71.60	1.37
Received institutional aid in 2007–08; Major in 2007–08 was liberal arts, psychology/history, biology, education, health professions, agricultural sciences, or missing/unknown; White, non-Hispanic, Hispanic, Asian, non-Hispanic, or Other, non-Hispanic	4,770	91.50	1.09
Received institutional aid in 2007–08; Major in 2007–08 was liberal arts, psychology/history, biology, education, health professions, agricultural sciences, or missing/unknown; Black or African American, non-Hispanic or more than one race, non-Hispanic	600	86.30	1.15

See notes at end of table.

**Table 35. Number of weight G respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18GWT1)
Received institutional aid in 2007–08; Major in 2007–08 was liberal arts, psychology/history, biology, education, health professions, agricultural sciences, or missing/unknown; American Indian or Alaska Native, non-Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or unknown race/ethnicity	60	57.30	1.75
Received institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Did not receive Pell Grant in 2007–08	180	97.00	1.03
Received institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Pell Grant amount received in 2007–08 was between \$1 and \$2,155	160	88.10	1.12
Received institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Pell Grant amount received in 2007–08 was between \$2,156 and \$4,309	190	97.70	1.03
Received institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Pell Grant amount received in 2007–08 was \$4,310 or more or not applicable	130	99.30	1.00

<sup>1</sup> Control, region, and total enrollment of institution are based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying areas = Puerto Rico.

<sup>3</sup> Variable grouped by quartile for use in the adjustment model.

<sup>4</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

NOTE: Weight G respondents (B&B:08/18 response) are students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2018 follow-up survey. CHAID = chi-square automatic interaction detection. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 36 shows the final predictor variables used in the weight adjustment model for eligible, located sample members who were not considered respondents for analysis weight WTH000 (B&B:08/18 and B&B:08/12 respondents) and the average weight adjustment factor resulting from each variable (BB18HWT1). To achieve model convergence, the final lower bound was 1, and the final upper bound was 100. The nonresponse adjustment factor for weight H has the following characteristics:

- minimum: 1.02;
- median: 1.24; and
- maximum: 7.63.

**Table 36. Number of weight H respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018**

<b>Model predictor variable</b>	<b>Number of respondents</b>	<b>Weighted response rate</b>	<b>Average nonresponse adjustment factor (BB18HWT1)</b>
Total	13,270	73.60	1.33
Control of baccalaureate-granting institution <sup>1</sup>			
Public	7,720	75.40	1.29
Private nonprofit	4,940	71.30	1.38
Private for-profit	610	65.90	1.43
Region of baccalaureate-granting institution <sup>1,2</sup>			
New England	650	71.10	1.37
Mideast	2,230	66.80	1.48
Great Lakes	2,140	78.00	1.28
Plains	1,740	76.50	1.27
Southeast	3,030	74.00	1.32
Southwest	1,060	70.20	1.35
Rocky Mountains	690	84.30	1.19
Far West	1,570	75.80	1.30
Outlying areas	170	72.30	1.41
Total enrollment of baccalaureate-granting institution <sup>1,3</sup>			
1–4,760	3,340	73.70	1.34
4,761–13,042	3,240	70.00	1.41
13,043–27,210	3,340	73.60	1.32
27,211 or more	3,360	76.00	1.26
Pell Grant amount received in 2007–08 <sup>4</sup>			
None	7,820	73.00	1.35
\$1–\$2,155	1,880	71.50	1.36
\$2,156–\$4,309	2,080	77.20	1.28
\$4,310 or more	1,330	77.00	1.29
Unknown	160	77.40	1.26
Direct Loan amount received in 2007–08 <sup>3</sup>			
None	5,890	73.10	1.32
\$1–\$4,410	1,890	73.90	1.33
\$4,411–\$5,500	3,570	75.60	1.32
\$5,501–\$6,490	170	66.10	1.52
\$6,491 or more	1,760	72.50	1.35
Parent PLUS Loan amount received in 2007–08 <sup>3</sup>			
None	12,460	73.60	1.33
\$1–\$5,000	210	83.80	1.17
\$5,001–\$9,396	190	64.30	1.64
\$9,397–\$14,000	210	75.90	1.44
\$14,001 or more	200	74.20	1.35
Federal aid status in 2007–08			
Received	9,140	74.70	1.32
Did not receive	4,130	72.20	1.35
Institutional aid status in 2007–08			
Received	7,000	78.40	1.28
Did not receive	6,270	70.50	1.39
State aid status in 2007–08			
Received	5,450	78.10	1.28
Did not receive	7,820	71.90	1.37

See notes at end of table.

**Table 36. Number of weight H respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18HWT1)
Any aid status in 2007–08			
Received	11,410	75.90	1.31
Did not receive	1,860	66.90	1.45
Social Security number available			
Available	13,010	73.60	1.33
Not available	260	75.00	1.34
Veteran status in 2007–08			
Yes	600	70.40	1.39
No	12,670	73.80	1.33
Race/ethnicity			
White, non-Hispanic	9,540	74.70	1.32
Black or African American, non-Hispanic	1,180	72.10	1.36
Hispanic	1,160	78.90	1.30
Asian, non-Hispanic	820	68.80	1.39
American Indian or Alaska Native, non-Hispanic	40	84.20	1.14
Native Hawaiian or other Pacific Islander, non-Hispanic or Other, non-Hispanic	60	70.20	1.40
More than one race, non-Hispanic	330	80.80	1.21
Unknown race and ethnicity	130	42.60	2.24
Sex			
Male	5,400	70.10	1.39
Female	7,870	76.20	1.29
Age as of December 31, 2007			
15–23	9,090	76.10	1.30
24–29	2,470	68.80	1.40
30 or older or unknown	1,710	69.30	1.42
Baccalaureate major			
Liberal arts	1,620	73.30	1.32
Psychology/history	1,640	80.10	1.25
Biology	2,190	79.50	1.20
Physical sciences or mathematics and statistics	650	64.00	1.52
Computer and information sciences	560	63.10	1.56
Engineering	940	77.10	1.26
Education	910	75.80	1.33
Business	1,390	67.40	1.45
Health professions	850	73.50	1.34
Social sciences	60	63.30	1.57
Agricultural sciences	1,330	75.70	1.31
Missing/unknown	1,120	72.90	1.40
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>3</sup>			
None	2,980	72.10	1.35
\$1–\$16,735	2,540	71.30	1.37
\$16,736–\$27,586	2,570	74.30	1.34
\$27,587–\$57,914	2,540	72.70	1.37
\$57,915 or more	2,640	80.20	1.22

See notes at end of table.

**Table 36. Number of weight H respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18HWT1)
Percent of federal student loans that is still owed as of Oct. 31, 2019 <sup>3</sup>			
0 percent, federal student loan(s) repaid	4,650	74.10	1.33
1–69 percent	1,440	78.10	1.25
70–116 percent	1,510	78.20	1.28
117–146 percent	1,420	76.50	1.29
147 percent or more	1,280	65.50	1.50
Not applicable, did not receive federal student loan(s)	2,980	72.10	1.35
Federal loan default status as of Oct. 31, 2019			
Yes, defaulted on federal student loan(s)	990	60.80	1.75
No, did not default on federal student loan(s)	9,300	76.80	1.28
Not applicable, did not receive federal student loan(s)	2,980	72.10	1.35
CHAID segments in nonresponse adjustment model			
Not Hispanic; Not in federal loan default; Parent PLUS Loan amount received in 2007–08 was \$9,396 or less	7,990	77.70	1.27
Not Hispanic; Not in federal loan default; Parent PLUS Loan amount received in 2007–08 was \$9,397 or more	350	89.10	1.12
Not Hispanic; Not applicable for federal loan default; Age as of December 31, 2007, was between 15 and 23	1,960	77.70	1.27
Not Hispanic; Not applicable for federal loan default; Age as of December 31, 2007, was 24 or older or unknown	740	65.10	1.52
Not Hispanic; In federal loan default; Attended institution in New England, Great Lakes, or Far West	230	75.90	1.31
Not Hispanic; In federal loan default; Attended institution in Plains, Southeast, Southwest, or Rocky Mountains	460	63.60	1.62
Not Hispanic; In federal loan default; Attended institution in the Mideast or Outlying areas	130	35.50	2.88
Hispanic; Percentage of loans that is still owed is 0; Attended institution in New England, Great Lakes, Plains, Rocky Mountains, or Outlying areas	100	93.80	1.06
Hispanic; Percentage of loans that is still owed is 0; Attended institution in Southeast, Southwest, or Far West	170	77.80	1.29
Hispanic; Percentage of loans that is still owed is 0; Attended institution in the Mideast	40	44.70	2.29
Hispanic; Percentage of loans that is still owed is between 1 and 146; Not in federal loan default	400	89.40	1.13
Hispanic; Percentage of loans that is still owed is between 1 and 146; In federal loan default	60	74.90	1.48
Hispanic; Percentage of loans that is still owed is 147 or more; Cumulative amount borrowed in federal loans is \$27,586 or less	30	35.30	2.76
Hispanic; Percentage of loans that is still owed is 147 or more; Cumulative amount borrowed in federal loans is \$27,587 or more	130	73.60	1.33
Hispanic; Percentage of loans that is still owed is unknown; Major in 2007–08 was liberal arts, physical sciences, mathematics and statistics, computer and information sciences, engineering, education, agricultural sciences, or missing/unknown	150	90.50	1.12
Hispanic; Percentage of loans that is still owed is unknown; Major in 2007–08 was psychology/history, biology, business, health professions, or social sciences	90	66.70	1.42

See notes at end of table.

**Table 36. Number of weight H respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18HWT1)
Unknown if Hispanic; Attended institution in Great Lakes or Rocky Mountains	40	85.30	1.13
Unknown if Hispanic; Attended institution in New England, Mideast, Plains, Southeast, Southwest, Far West, or Outlying areas	220	42.80	2.45

<sup>1</sup> Control, region, and total enrollment of institution are based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying areas = Puerto Rico.

<sup>3</sup> Variable grouped by quartile for use in the adjustment model.

<sup>4</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

NOTE: Weight H respondents (B&B:08/18 and B&B:08/12 response) are students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2012 and 2018 follow-up surveys. CHAID = chi-square automatic interaction detection. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 37 shows the final predictor variables used in the weight adjustment model for eligible, located sample members who were not considered respondents for analysis weight WTI000 (B&B:08/18 and transcript respondents) and the average nonresponse adjustment factor resulting from each variable (BB18IWT1). To achieve model convergence, the final lower bound was 1 and the final upper bound was 100. The nonresponse adjustment factor for weight I has the following characteristics:

- minimum: 1.00;
- median: 1.20; and
- maximum: 5.97.

**Table 37. Number of weight I respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18IWT1)
<b>Total</b>	<b>13,670</b>	<b>77.50</b>	<b>1.27</b>
Control of baccalaureate-granting institution <sup>1</sup>			
Public	8,000	78.20	1.26
Private nonprofit	5,010	76.70	1.28
Private for-profit	670	73.80	1.32
Region of baccalaureate-granting institution <sup>1,2</sup>			
New England	710	76.70	1.27
Mideast	2,320	74.40	1.33
Great Lakes	2,160	81.70	1.22
Plains	1,840	85.20	1.16
Southeast	3,010	73.10	1.34
Southwest	1,140	78.90	1.23
Rocky Mountains	720	87.50	1.15
Far West	1,570	75.40	1.30
Outlying areas	190	82.20	1.20
Total enrollment of baccalaureate-granting institution <sup>1,3</sup>			
1–4,760	3,410	78.10	1.27
4,761–13,042	3,360	76.20	1.27
13,043–27,210	3,390	74.40	1.31
27,211 or more	3,510	80.60	1.22
Pell Grant amount received in 2007–08 <sup>4</sup>			
None	8,060	77.20	1.27
\$1–\$2,155	1,930	77.80	1.24
\$2,156–\$4,309	2,140	78.00	1.28
\$4,310 or more	1,370	78.90	1.25
Unknown	170	77.90	1.23
Direct Loan amount received in 2007–08 <sup>3</sup>			
None	6,090	77.50	1.26
\$1–\$4,410	1,930	77.30	1.26
\$4,411–\$5,500	3,640	79.20	1.25
\$5,501–\$6,490	170	67.20	1.41
\$6,491 or more	1,840	75.20	1.30
Parent PLUS Loan amount received in 2007–08 <sup>3</sup>			
None	12,820	77.40	1.27
\$1–\$5,000	210	75.00	1.29
\$5,001–\$9,396	210	74.60	1.31
\$9,397–\$14,000	220	81.20	1.23
\$14,001 or more	210	84.00	1.17
Federal aid status in 2007–08			
Received	9,400	77.70	1.27
Did not receive	4,280	77.20	1.27
State aid status in 2007–08			
Received	5,570	80.70	1.23
Did not receive	8,100	76.30	1.29

See notes at end of table.

**Table 37. Number of weight I respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18IWT1)
Any aid status in 2007–08			
Received	11,720	79.20	1.25
Did not receive	1,950	72.50	1.36
Social Security number available			
Available	13,400	77.40	1.27
Not available	270	79.70	1.20
Veteran status in 2007–08			
Yes	630	73.00	1.37
No	13,040	77.70	1.26
Race/ethnicity			
White, non-Hispanic	9,780	77.90	1.26
Black or African American, non-Hispanic	1,230	77.20	1.27
Hispanic	1,200	83.20	1.20
Asian, non-Hispanic	860	74.60	1.33
American Indian or Alaska Native, non-Hispanic	40	78.90	1.25
Native Hawaiian or other Pacific Islander, non-Hispanic	50	69.80	1.48
Other, non-Hispanic	20	92.60	1.08
More than one race, non-Hispanic	320	80.10	1.23
Unknown race and ethnicity	170	55.90	1.67
Ethnicity			
Hispanic	1,200	83.20	1.20
Non-Hispanic	12,150	78.30	1.26
Unknown	320	62.20	1.64
Sex			
Male	5,600	73.90	1.32
Female	8,080	80.20	1.23
Age as of December 31, 2007			
15–23 or unknown	9,320	79.70	1.23
24–29	2,600	73.00	1.34
30 or older	1,750	73.90	1.33
Baccalaureate major			
Liberal arts	1,690	77.20	1.27
Psychology/history	1,670	82.80	1.20
Biology or unknown	2,210	81.70	1.20
Physical sciences	390	69.40	1.30
Mathematics and statistics	290	77.00	1.39
Computer and information sciences	580	71.60	1.40
Engineering	970	76.70	1.28
Education	960	82.00	1.22
Business	1,450	74.60	1.32
Health professions	880	76.90	1.27
Social sciences	70	76.60	1.40
Agricultural sciences	1,400	75.50	1.29
Missing	1,140	76.00	1.32

See notes at end of table.



**Table 37. Number of weight I respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18IWT1)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>3</sup>			
None	3,010	72.90	1.36
\$1–\$16,735	2,650	75.40	1.32
\$16,736–\$27,586	2,660	79.10	1.25
\$27,587–\$57,914	2,660	81.80	1.19
\$57,915 or more	2,710	82.50	1.20
Percent of federal student loans that is still owed as of Oct. 31, 2019 <sup>3</sup>			
0 percent, federal student loan(s) repaid	4,780	78.00	1.27
1–69 percent	1,520	83.60	1.16
70–116 percent	1,520	81.60	1.23
117–146 percent	1,470	81.30	1.22
147 percent or more	1,380	76.30	1.28
Not applicable, did not receive federal student loan(s)	3,010	72.90	1.36
Federal loan default status as of Oct. 31, 2019			
Yes, defaulted on federal student loan(s)	1,110	72.10	1.38
No, did not default on federal student loan(s)	9,560	80.80	1.23
Not applicable, did not receive federal student loan(s)	3,010	72.90	1.36
CHAID segments in nonresponse adjustment model			
Did not receive any institutional aid in 2007–08; Major in 2007–08 was liberal arts, engineering, business, health professions, agricultural sciences, or missing; Attended institution in Great Lakes, Plains, Rocky Mountains, or Outlying areas	1,420	80.50	1.23
Did not receive any institutional aid in 2007–08; Major in 2007–08 was liberal arts, engineering, business, health professions, agricultural sciences, or missing; Attended institution in the Mideast, Southwest, or Far West	1,380	72.20	1.35
Did not receive any institutional aid in 2007–08; Major in 2007–08 was liberal arts, engineering, business, health professions, agricultural sciences, or missing; Attended institution in New England or Southeast	1,110	64.50	1.54
Did not receive any institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Attended institution in Great Lakes	60	87.90	1.13
Did not receive any institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Attended institution in New England, Plains, Southeast, Southwest, Rocky Mountains, Far West, or Outlying areas	290	61.70	1.68
Did not receive any institutional aid in 2007–08; Major in 2007–08 was physical sciences, computer and information sciences, or social sciences; Attended institution in the Mideast	70	36.60	2.63
Did not receive any institutional aid in 2007–08; Major in 2007–08 was psychology/history, biology, education, or unknown; Attended institution in the Mideast, Great Lakes, Southeast, or Far West	1,460	78.20	1.26
Did not receive any institutional aid in 2007–08; Major in 2007–08 was psychology/history, biology, education, or unknown; Attended institution in New England, Plains, or Southwest	550	86.60	1.14
Did not receive any institutional aid in 2007–08; Major in 2007–08 was psychology/history, biology, education, or unknown; Attended institution in Rocky Mountains or Outlying areas	160	96.60	1.03

See notes at end of table.

**Table 37. Number of weight I respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18IWT1)
Did not receive any institutional aid in 2007–08; Major in 2007–08 was mathematics and statistics	70	95.70	1.04
Received institutional aid in 2007–08; Attended institution in New England, Great Lakes, or Southeast; Institution enrollment in 2007–08 was between 1 and 13,042	1,780	85.40	1.17
Received institutional aid in 2007–08; Attended institution in New England, Great Lakes, or Southeast; Institution enrollment in 2007–08 was between 13,043 and 27,210	450	70.70	1.41
Received institutional aid in 2007–08; Attended institution in New England, Great Lakes, or Southeast; Institution enrollment in 2007–08 was 27,211 or more	790	85.50	1.17
Received institutional aid in 2007–08; Attended institution in Plains, Southwest, or Outlying areas; Direct Loan amount received in 2007–08 was \$0	580	91.50	1.09
Received institutional aid in 2007–08; Attended institution in Plains, Southwest, or Outlying areas; Direct Loan amount received in 2007–08 was between \$1 and \$5,500	810	82.10	1.21
Received institutional aid in 2007–08; Attended institution in Plains, Southwest, or Outlying areas; Direct Loan amount received in 2007–08 was \$5,501 or more	250	97.90	1.02
Received institutional aid in 2007–08; Attended institution in Rocky Mountains; Major in 2007–08 was physical sciences, mathematics and statistics, engineering, social sciences, or missing	130	99.90	1.00
Received institutional aid in 2007–08; Attended institution in Rocky Mountains; Major in 2007–08 was liberal arts, psychology/history, biology, computer and information sciences, education, business, health professions, agricultural sciences, or unknown	270	90.60	1.12
Received institutional aid in 2007–08; Attended institution in the Mideast or Far West; Cumulative amount borrowed in federal loans is \$0	330	75.90	1.34
Received institutional aid in 2007–08; Attended institution in the Mideast or Far West; Cumulative amount borrowed in federal loans is between \$1 and \$16,735	400	65.60	1.51
Received institutional aid in 2007–08; Attended institution in the Mideast or Far West; Cumulative amount borrowed in federal loans is between \$16,736 and \$57,914	830	79.70	1.24
Received institutional aid in 2007–08; Attended institution in the Mideast or Far West; Cumulative amount borrowed in federal loans is \$57,915 or more	510	86.40	1.15

<sup>1</sup> Control, region, and total enrollment of institution are based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying areas = Puerto Rico.

<sup>3</sup> Variable grouped by quartile for use in the adjustment model.

<sup>4</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

NOTE: Weight I respondents (B&B:08/18 and transcript response) are students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08 and the 2018 follow-up survey, and for whom an undergraduate transcript was collected. CHAID = chi-square automatic interaction detection. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 38 shows the final predictor variables used in the weight adjustment model for eligible, located sample member who were not considered respondents for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript respondents) and the average nonresponse adjustment factor resulting from each variable (BB18JWT1). To achieve model convergence, the final lower bound was 1, and the final upper bound was 95. The nonresponse adjustment factor for weight J has the following characteristics:

- minimum: 1.01;
- median: 1.33; and
- maximum: 12.64.

**Table 38. Number of weight J respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18JWT1)
<b>Total</b>	<b>12,380</b>	<b>67.90</b>	<b>1.46</b>
Control of baccalaureate-granting institution <sup>1</sup>			
Public	7,260	69.40	1.41
Private nonprofit	4,530	65.70	1.50
Private for-profit	590	62.50	1.68
Region of baccalaureate-granting institution <sup>1,2</sup>			
New England	620	65.70	1.50
Mideast	2,050	62.10	1.59
Great Lakes	1,990	73.60	1.35
Plains	1,690	73.30	1.34
Southeast	2,720	65.20	1.53
Southwest	1,030	67.40	1.47
Rocky Mountains	680	80.80	1.27
Far West	1,430	67.00	1.50
Outlying areas	170	72.30	1.47
Total enrollment of baccalaureate-granting institution <sup>1,3</sup>			
1–4,760	3,080	68.10	1.45
4,761–13,042	3,000	63.60	1.55
13,043–27,210	3,080	66.60	1.48
27,211 or more	3,210	71.70	1.36
Pell Grant amount received in 2007–08 <sup>4</sup>			
None	7,320	67.70	1.46
\$1–\$2,155	1,760	66.60	1.44
\$2,156–\$4,309	1,930	68.90	1.45
\$4,310 or more	1,220	69.30	1.49
Not applicable	150	69.70	1.56

See notes at end of table.

**Table 38. Number of weight J respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18JWT1)
Direct Loan amount received in 2007–08 <sup>3</sup>			
None	5,550	68.50	1.43
\$1–\$4,410	1,750	66.30	1.44
\$4,411–\$5,500	3,300	69.60	1.44
\$5,501–\$6,490	150	58.00	1.70
\$6,491 or more	1,620	64.60	1.59
Parent PLUS Loan amount received in 2007–08 <sup>3</sup>			
None	11,610	67.90	1.46
\$1–\$5,000	190	67.90	1.48
\$5,001–\$9,396	180	61.20	1.63
\$9,397–\$14,000	200	71.10	1.41
\$14,001 or more	190	69.90	1.42
Federal aid status in 2007–08			
Received	8,480	67.70	1.47
Did not receive	3,900	68.10	1.44
Institutional aid status in 2007–08			
Received	6,500	73.60	1.37
Did not receive	5,880	64.10	1.56
State aid status in 2007–08			
Received	5,060	72.10	1.40
Did not receive	7,310	66.20	1.50
Any aid status in 2007–08			
Received	10,620	69.60	1.44
Did not receive	1,760	62.60	1.57
Social Security number available			
Available	12,130	67.70	1.46
Not available	250	72.60	1.34
Veteran status in 2007–08			
Yes	560	65.10	1.53
No	11,820	68.00	1.46
Race/ethnicity			
White, non-Hispanic	8,910	68.40	1.44
Black or African American, non-Hispanic	1,090	67.50	1.54
Hispanic	1,090	75.00	1.44
Asian, non-Hispanic	760	64.50	1.52
American Indian or Alaska Native, non-Hispanic	40	76.30	1.21
Native Hawaiian or other Pacific Islander, non-Hispanic	40	59.40	1.78
Other, non-Hispanic	20	92.10	1.08
More than one race, non-Hispanic	300	74.10	1.30
Unknown race and ethnicity	130	38.10	2.55
Ethnicity			
Hispanic	1,090	75.00	1.44
Non-Hispanic	11,040	69.50	1.43
Unknown	250	41.10	2.67

See notes at end of table.

**Table 38. Number of weight J respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18JWT1)
Sex			
Male	5,030	64.30	1.53
Female	7,350	70.50	1.41
Age as of December 31, 2007			
15–23 or unknown	8,480	70.20	1.41
24–29	2,310	63.10	1.56
30 or older	1,590	64.00	1.59
Baccalaureate major			
Liberal arts	1,540	68.10	1.43
Psychology/history	1,540	75.20	1.34
Biology or unknown	2,030	73.20	1.28
Physical sciences	350	57.10	1.75
Mathematics and statistics	260	67.50	1.72
Computer and information sciences	530	60.40	1.69
Engineering	870	69.90	1.48
Education	860	71.20	1.39
Business	1,300	62.70	1.60
Health professions	800	67.50	1.54
Social sciences	60	57.70	1.75
Agricultural sciences	1,240	67.00	1.45
Missing	1,030	65.70	1.55
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>3</sup>			
None	2,740	64.60	1.54
\$1–\$16,735	2,400	66.90	1.47
\$16,736–\$27,586	2,400	68.70	1.45
\$27,587–\$57,914	2,380	67.90	1.50
\$57,915 or more	2,460	75.00	1.33
Percent of federal student loans that is still owed as of Oct. 31, 2019 <sup>3</sup>			
0 percent, federal student loan(s) repaid	4,340	68.90	1.43
1–69 percent	1,380	73.40	1.36
70–116 percent	1,400	74.10	1.36
117–146 percent	1,330	71.90	1.40
147 percent or more	1,190	59.40	1.67
Not applicable, did not receive federal student loan(s)	2,740	64.60	1.54
CHAID segments in nonresponse adjustment model			
Not in federal loan default; Not Hispanic; Institution enrollment in 2007–08 was between 1 and 4,760	2,060	75.30	1.32
Not in federal loan default; Not Hispanic; Institution enrollment in 2007–08 was between 4,761 and 13,042	1,890	72.60	1.37
Not in federal loan default; Not Hispanic; Institution enrollment in 2007–08 was between 13,043 and 27,210	1,860	66.70	1.47
Not in federal loan default; Not Hispanic; Institution enrollment in 2007–08 was 27,211 or more	2,010	77.60	1.28
Not in federal loan default; Hispanic; Major in 2007–08 was mathematics and statistics or engineering	60	38.10	3.07

See notes at end of table.

**Table 38. Number of weight J respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18JWT1)
Not in federal loan default; Hispanic; Major in 2007–08 was liberal arts, psychology/history, education, business, agricultural sciences, or missing	440	78.90	1.26
Not in federal loan default; Hispanic; Major in 2007–08 was biology, computer and information sciences, or unknown	190	86.10	1.18
Not in federal loan default; Hispanic; Major in 2007–08 was physical sciences, health professions, or social sciences	60	95.30	1.06
Not in federal loan default; Unknown if Hispanic; Pell Grant amount received in 2007–08 was \$2,155 or less	120	39.40	2.52
Not in federal loan default; Unknown if Hispanic; Pell Grant amount received in 2007–08 was \$2,156 or more or Not applicable	50	72.20	1.37
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was psychology/history, biology, engineering, or unknown	780	78.40	1.26
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was liberal arts, education, business, or agricultural sciences	1,170	61.80	1.53
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was computer and information sciences or social sciences	130	46.70	2.33
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was physical sciences, health professions, or missing	470	71.50	1.40
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was mathematics and statistics	50	94.90	1.05
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$1 or more	130	32.50	3.22
In federal loan default; Institution enrollment in 2007–08 was between 1 and 4,760; Did not receive Pell Grant in 2007–08	120	40.60	2.59
In federal loan default; Institution enrollment in 2007–08 was between 1 and 4,760; Pell Grant amount received in 2007–08 was between \$1 and \$4,309	120	56.80	1.77
In federal loan default; Institution enrollment in 2007–08 was between 1 and 4,760; Pell Grant amount received in 2007–08 was \$4,310 or more or Not applicable	60	80.90	1.24
In federal loan default; Institution enrollment in 2007–08 was between 4,761 and 13,042; Attended institution in New England or Great Lakes	40	66.20	1.43
In federal loan default; Institution enrollment in 2007–08 was between 4,761 and 13,042; Attended institution in the Mideast, Southwest, Rocky Mountains, Far West, or Outlying areas	90	20.30	4.35
In federal loan default; Institution enrollment in 2007–08 was between 4,761 and 13,042; Attended institution in Southeast	60	41.30	2.52
In federal loan default; Institution enrollment in 2007–08 was between 4,761 and 13,042; Attended institution in Plains	40	85.40	1.18
In federal loan default; Institution enrollment in 2007–08 was between 13,043 and 27,210; Pell Grant amount received in 2007–08 was \$4,309 or less	160	53.40	1.78
In federal loan default; Institution enrollment in 2007–08 was between 13,043 and 27,210; Pell Grant amount received in 2007–08 was \$4,310 or more or Not applicable	40	87.80	1.16

See notes at end of table.

**Table 38. Number of weight J respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18JWT1)
In federal loan default; Institution enrollment in 2007–08 was 27,211 or more; Major in 2007–08 was liberal arts, biology, engineering, education, business, agricultural sciences, missing, or unknown	130	56.40	1.77
In federal loan default; Institution enrollment in 2007–08 was 27,211 or more; Major in 2007–08 was psychology/history, physical sciences, mathematics and statistics, computer and information sciences, health professions, or social sciences	60	91.20	1.05

<sup>1</sup> Control, region, and total enrollment of institution are based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying areas = Puerto Rico.

<sup>3</sup> Variable grouped by quartile for use in the adjustment model.

<sup>4</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

NOTE: Weight J respondents (B&B:08/18, B&B:08/12, and transcript response) are students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, responded to the 2012 and 2018 follow-up surveys, and for whom an undergraduate transcript was collected. CHAID = chi-square automatic interaction detection. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 39 shows the final predictor variables used in the weight adjustment model for eligible, located sample members who were not considered respondents for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript respondents) and the average nonresponse adjustment factor resulting from each variable (BB18KWT1). To achieve convergence, the final lower bound was 1, and the final upper bound was 112. The nonresponse adjustment factor for weight K has the following characteristics:

- minimum: 1.02;
- median: 1.45; and
- maximum: 25.05.

**Table 39. Number of weight K respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18KWT1)
<b>Total</b>	<b>11,550</b>	<b>60.70</b>	<b>1.61</b>
Control of baccalaureate-granting institution <sup>1</sup>			
Public	6,760	62.40	1.57
Private nonprofit	4,240	58.80	1.63
Private for-profit	540	49.10	2.04
Region of baccalaureate-granting institution <sup>1,2</sup>			
New England	570	58.80	1.70
Mideast	1,890	55.00	1.81
Great Lakes	1,860	66.60	1.48
Plains	1,580	63.60	1.51
Southeast	2,530	58.70	1.68
Southwest	960	60.20	1.57
Rocky Mountains	650	73.20	1.38
Far West	1,350	59.50	1.64
Outlying areas	160	68.20	1.43
Total enrollment of baccalaureate-granting institution <sup>1,3</sup>			
1–4,760	2,880	60.20	1.62
4,761–13,042	2,770	57.00	1.73
13,043–27,210	2,900	60.60	1.59
27,211 or more	2,990	63.50	1.52
Pell Grant amount received in 2007–08 <sup>4</sup>			
None	6,810	60.90	1.62
\$1–\$2,155	1,650	59.90	1.63
\$2,156–\$4,309	1,810	61.00	1.57
\$4,310 or more	1,140	60.20	1.61
Not applicable	140	57.70	1.80
Direct Loan amount received in 2007–08 <sup>3</sup>			
None	5,200	61.20	1.60
\$1–\$4,410	1,630	60.20	1.58
\$4,411–\$5,500	3,110	63.60	1.55
\$5,501–\$6,490	140	51.10	1.91
\$6,491 or more	1,470	54.70	1.79
Parent PLUS Loan amount received in 2007–08 <sup>3</sup>			
None	10,840	60.70	1.61
\$1–\$5,000	180	59.70	1.66
\$5,001–\$9,396	170	57.10	1.71
\$9,397–\$14,000	190	60.60	1.70
\$14,001 or more	170	61.90	1.60
Federal aid status in 2007–08			
Received	7,940	60.70	1.61
Did not receive	3,610	60.60	1.63
Institutional aid status in 2007–08			
Received	6,140	67.00	1.48
Did not receive	5,410	56.50	1.76
State aid status in 2007–08			
Received	4,780	66.30	1.50
Did not receive	6,770	58.50	1.69

See notes at end of table.



**Table 39. Number of weight K respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

<b>Model predictor variable</b>	<b>Number of respondents</b>	<b>Weighted response rate</b>	<b>Average nonresponse adjustment factor (BB18KWT1)</b>
Any aid status in 2007–08			
Received	9,950	62.70	1.57
Did not receive	1,600	54.50	1.88
Social Security number available			
Available	11,330	60.70	1.61
Not available	220	59.30	1.62
Veteran status in 2007–08			
Yes	510	55.50	1.79
No	11,040	60.90	1.61
Race/ethnicity			
White, non-Hispanic	8,360	62.10	1.59
Black or African American, non-Hispanic	1,000	58.80	1.65
Hispanic	1,030	65.60	1.53
Asian, non-Hispanic	700	56.80	1.67
American Indian or Alaska Native, non-Hispanic	30	59.00	1.47
Native Hawaiian or other Pacific Islander, non-Hispanic or Other, non-Hispanic	50	58.50	1.70
More than one race, non-Hispanic	280	62.70	1.57
Unknown race and ethnicity	110	25.90	3.98
Ethnicity			
Hispanic	1,030	65.60	1.53
Non-Hispanic or unknown	10,520	60.20	1.62
Sex			
Male	4,690	57.00	1.72
Female	6,860	63.40	1.54
Age as of December 31, 2007			
15–23 or unknown	7,960	64.10	1.52
24–29	2,110	52.70	1.90
30 or older	1,480	56.00	1.73
Baccalaureate major			
Liberal arts	1,420	60.30	1.62
Psychology/history	1,430	69.70	1.45
Biology or unknown	1,920	68.00	1.39
Physical sciences	340	52.20	1.87
Mathematics and statistics	250	64.60	1.61
Computer and information sciences	500	52.60	1.94
Engineering	830	62.60	1.62
Education	810	65.00	1.54
Business	1,190	54.10	1.87
Health professions	740	61.30	1.61
Social sciences	50	53.30	1.86
Agricultural sciences	1,140	58.90	1.60
Missing	950	57.20	1.79

See notes at end of table.

**Table 39. Number of weight K respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18KWT1)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>3</sup>			
None	2,550	57.90	1.71
\$1–\$16,735	2,230	59.00	1.67
\$16,736–\$27,586	2,240	60.60	1.60
\$27,587–\$57,914	2,220	60.80	1.67
\$57,915 or more	2,320	68.50	1.42
Percent of federal student loans that is still owed as of Oct. 31, 2019 <sup>3</sup>			
0 percent, federal student loan(s) repaid	4,080	62.40	1.56
1–69 percent	1,280	63.50	1.50
70–116 percent	1,310	66.90	1.50
117–146 percent	1,230	64.50	1.54
147 percent or more	1,100	51.40	1.94
Not applicable, did not receive federal student loan(s)	2,550	57.90	1.71
CHAID segments in nonresponse adjustment model			
Not in federal loan default; Not Hispanic; Attended institution in Great Lakes, Plains, or Far West	3,180	68.70	1.45
Not in federal loan default; Not Hispanic; Attended institution in the Mideast, Southeast, Southwest, or Outlying areas	3,380	65.90	1.51
Not in federal loan default; Not Hispanic; Attended institution in Rocky Mountains	400	84.30	1.19
Not in federal loan default; Not Hispanic; Attended institution in New England	380	59.00	1.68
Not in federal loan default; Hispanic; Direct Loan amount received in 2007–08 was \$6,490 or less	610	75.50	1.33
Not in federal loan default; Hispanic; Direct Loan amount received in 2007–08 was \$6,491 or more	100	47.40	2.11
Not in federal loan default; Unknown if Hispanic; Cumulative amount borrowed in federal loans is \$57,914 or less	110	26.90	3.96
Not in federal loan default; Unknown if Hispanic; Cumulative amount borrowed in federal loans is \$57,915 or more	30	64.40	1.57
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was psychology/history, biology, engineering, or unknown	740	72.80	1.35
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was liberal arts, computer and information sciences, education, business, social sciences, or agricultural sciences	1,200	53.00	1.84
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was physical sciences, health professions, or missing	430	64.40	1.54
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$0; Major in 2007–08 was mathematics and statistics	50	94.30	1.06
Not applicable for federal loan default; Direct Loan amount received in 2007–08 was \$1 or more	120	30.00	3.47
In federal loan default; Major in 2007–08 was Liberal arts or engineering; Did not receive any state aid in 2007–08	70	34.10	2.70
In federal loan default; Major in 2007–08 was liberal arts or engineering; Received state aid in 2007–08	70	57.70	1.87
In federal loan default; Major in 2007–08 was psychology/history, biology, education, agricultural sciences, or unknown; Attended public institution	240	56.30	1.76

See notes at end of table.

**Table 39. Number of weight K respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2018—Continued**

Model predictor variable	Number of respondents	Weighted response rate	Average nonresponse adjustment factor (BB18KWT1)
In federal loan default; Major in 2007–08 was psychology/history, biology, education, agricultural sciences, or unknown; Attended private nonprofit institution	100	34.90	2.84
In federal loan default; Major in 2007–08 was psychology/history, Biology, education, agricultural sciences, or unknown; Attended private for-profit institution	50	85.50	1.19
In federal loan default; Major in 2007–08 was physical sciences, mathematics and statistics, computer and information sciences, health professions, or social sciences	110	45.30	2.59
In federal loan default; Major in 2007–08 was business or missing; Age as of December 31, 2007, was between 15 and 29 or unknown	90	26.60	4.78
In federal loan default; Major in 2007–08 was business or missing; Age as of December 31, 2007, was 30 or older	80	44.60	2.25

<sup>1</sup> Control, region, and total enrollment of institution are based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06.

<sup>2</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying areas = Puerto Rico.

<sup>3</sup> Variable grouped by quartile for use in the adjustment model.

<sup>4</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

NOTE: Weight K respondents (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) are students who received a bachelor's degree between July 2007 and June 2008, responded to all surveys (2007–08, 2009, 2012, 2018), and for whom an undergraduate transcript was collected. CHAID = chi-square automatic interaction detection. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 6.1.3 Poststratification Adjustment (BB18GWT2–BB18KWT2)

To ensure all weighted samples accurately represent the population of students who received their baccalaureate degrees in the 2007–08 academic year, staff first identified key study outcomes that were available for the B&B:08/18 population. They then ensured weighted counts for those outcomes matched known control totals (population totals) for those outcomes by again using SUDAAN's WTADJUST on each of the five B&B:08/18 analysis weights. Part of this poststratification adjustment included trimming adjustments. Weighting staff set initial bounds for both the trimming adjustment and the poststratification adjustment. Specifically, bounds on trimming were set as the median nonresponse-adjusted weight plus or minus three times the interquartile range, where the median and interquartile range were defined by control and level of institution. This adjustment also helped increase the precision of characteristics related to those outcomes.

The control totals were derived from the weighted<sup>24</sup> sums of the B&B:08 cohort (including deceased and ineligible cases) for the following variables:

- total Direct Loan amount borrowed in the 2007–08 academic year;
- number of Direct Loan recipients in the 2007–08 academic year by control of institution;
- total Pell Grant amount borrowed in the 2007–08 academic year by control of institution; and
- total Parent PLUS amount borrowed in the 2007–08 academic year by control of institution.

Additionally, control totals were formed from IPEDS counts of baccalaureate recipients for control of the baccalaureate-granting institution, sex, and baccalaureate major. The following variables were used in defining control totals from the IPEDS completion file (C2008\_a):

- 2007–08 baccalaureate recipients by sex;
- 2007–08 baccalaureate recipients by control of institution; and
- 2007–08 baccalaureate recipients by major (12 categories).

The initial lower bound set for the poststratification adjustments was 0.01 for all models. Staff ran the WTADJUST procedure with no initial upper limit. Once convergence of the model was achieved, weight adjustment bounds were tightened to reduce the magnitude of the weight adjustment factors and the UWEs. Results of the poststratification adjustment models follow.

Table 40 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTG000 (B&B:08/18 respondents). To achieve model convergence, the final lower bound was 0.2 and the final upper bound was 4. The poststratification adjustment factor for weight G has the following characteristics:

- minimum: 0.06;
- median: 1.71; and
- maximum: 40.51.

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<sup>24</sup> The weighted sums were calculated using the NPSAS:08 student analysis weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; NPSAS:08 student multiplicity and unknown eligibility adjustments; and nonresponse and poststratification adjustments.

Table 40 also provides the weighted sums for each poststratification category for the final, eligible B&B:08/18 sample.

**Table 40. Control totals, average poststratification adjustment factor, and weighted sums for analysis weight WTG000 (B&B:08/18 response), by poststratification category: 2018**

Poststratification category	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18GWT2)	Weighted sum eligible cases
Number of students who completed a baccalaureate degree from a NPSAS-eligible institution	2,039,160	2.06	1,657,730
Number of baccalaureate recipients, by control of institution			
Public	1,044,860	1.92	1,041,990
Private nonprofit	540,680	1.91	539,630
Private for-profit	76,730	5.07	76,110
Number of baccalaureate recipients, by sex			
Male	707,340	2.29	704,310
Female	954,940	1.90	953,420
Number of baccalaureate recipients, by major			
Liberal arts	263,610	2.07	262,620
Psychology/history	262,980	1.84	262,800
Biology/missing/unknown	174,030	1.48	173,690
Physical sciences	23,290	3.15	23,290
Mathematics and statistics	17,240	4.18	17,240
Computer and information sciences	39,700	4.27	39,690
Engineering	85,480	3.29	85,450
Education	110,400	1.52	110,180
Business	356,280	2.01	355,210
Health professions	113,740	1.80	113,600
Social sciences	11,960	2.07	11,960
Agricultural sciences	203,560	1.84	202,000
Total Direct Loan amount borrowed in the 2007–08 academic year (\$)	5,213,948,060	2.02	4,229,147,400
Number of Direct Loan recipients in the 2007–08 academic year, by control of institution <sup>1</sup>			
Public	513,660	1.84	414,430
Private nonprofit	319,660	1.73	275,990
Private for-profit	54,940	5.53	50,350
Total Pell Grant amount borrowed in the 2007–08 academic year, by control of institution (\$)			
Public	764,974,720	2.42	583,085,580
Private nonprofit	364,027,730	2.31	305,313,360
Private for-profit	45,583,890	5.27	41,762,260
Total Parent PLUS Loan amount borrowed in the 2007–08 academic year, by control of institution (\$)			
Public	517,118,260	1.59	433,483,770
Private nonprofit	703,318,950	1.66	634,582,790
Private for-profit	22,037,740	5.20	21,401,780

<sup>1</sup> Control totals were derived from the weighted sums of the B&B:08 cohort (including deceased and ineligible cases). They were weighted using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 41 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTH000 (B&B:08/18 and B&B:08/12 respondents). To achieve model convergence, the final lower bound was 0.2 and the final upper bound was 4. The poststratification adjustment factor for weight H has the following characteristics:

- minimum: 0.07;
- median: 1.69; and
- maximum: 40.52.

**Table 41. Control totals and average poststratification adjustment factor for analysis weight WTH000 (B&B:08/18 and B&B:08/12 response), by poststratification category: 2018**

Poststratification category	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18HWT2)
Number of students who completed a baccalaureate degree from a NPSAS-eligible institution	1,657,730	1.97
Number of baccalaureate recipients, by control of institution		
Public	1,041,990	1.86
Private nonprofit	539,630	1.76
Private for-profit	76,110	5.09
Number of baccalaureate recipients, by sex		
Male	704,310	2.16
Female	953,420	1.84
Number of baccalaureate recipients, by major		
Unknown	1,650	0.66
Liberal arts	262,620	2.06
Psychology/history	262,800	1.80
Biology	82,820	1.73
Physical sciences	23,290	2.64
Mathematics and statistics	17,240	2.97
Computer and information sciences	39,690	3.57
Engineering	85,450	3.21
Education	110,180	1.50
Business	355,210	2.00
Health professions	113,600	1.72
Social sciences	11,960	1.84
Agricultural sciences	202,000	1.86
Missing	89,230	0.91
Total Direct Loan amount borrowed in the 2007–08 academic year (\$)	4,229,147,400	1.91

See notes at end of table.

**Table 41. Control totals and average poststratification adjustment factor for analysis weight WTH000 (B&B:08/18 and B&B:08/12 response), by poststratification category: 2018—Continued**

Poststratification category	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18HWT2)
Number of Direct Loan recipients in the 2007–08 academic year, by control of institution		
Public	414,430	1.77
Private nonprofit	275,990	1.58
Private for-profit	50,350	5.49
Total Pell Grant amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	583,085,580	2.28
Private nonprofit	305,313,360	2.08
Private for-profit	41,762,260	5.21
Total Parent PLUS Loan amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	433,483,770	1.52
Private nonprofit	634,582,790	1.53
Private for-profit	21,401,780	5.01

<sup>1</sup> Control totals were derived from the weighted sums of the B&B:08 cohort (including deceased and ineligible cases). They were weighted using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 42 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTH000 (B&B:08/18 and transcript respondents). To achieve model convergence, the final lower bound was 0.2 and the final upper bound was 5. The poststratification adjustment factor for weight I has the following characteristics:

- minimum: 0.06;
- median: 1.69; and
- maximum: 35.22.

**Table 42. Control totals and average poststratification adjustment factor for analysis weight WT1000 (B&B:08/18 and transcript response), by poststratification category: 2018**

Poststratification categories	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18IWT2)
Number of students who completed a baccalaureate degree from a NPSAS-eligible institution	1,657,730	1.99
Number of baccalaureate recipients, by control of institution		
Public	1,041,990	1.85
Private nonprofit	539,630	1.86
Private for-profit	76,110	4.75
Number of baccalaureate recipients, by sex		
Male	704,310	2.20
Female	953,420	1.85
Number of baccalaureate recipients, by major		
Unknown	1,650	0.98
Liberal arts	262,620	2.04
Psychology/history	262,800	1.84
Biology	82,820	1.72
Physical sciences	23,290	3.07
Mathematics and statistics	17,240	3.13
Computer and information sciences	39,690	3.73
Engineering	85,450	3.17
Education	110,180	1.51
Business	355,210	2.03
Health professions	113,600	1.78
Social sciences	11,960	2.02
Agricultural sciences	202,000	1.79
Missing	89,230	0.91
Total Direct Loan amount borrowed in the 2007–08 academic year (\$)	4,229,147,400	1.95
Number of Direct Loan recipients in the 2007–08 academic year, by control of institution		
Public	414,430	1.77
Private nonprofit	275,990	1.70
Private for-profit	50,350	5.13
Total Pell Grant amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	583,085,580	2.28
Private nonprofit	305,313,360	2.23
Private for-profit	41,762,260	4.76
Total Parent PLUS Loan amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	433,483,770	1.51
Private nonprofit	634,582,790	1.61
Private for-profit	21,401,780	5.95

<sup>1</sup> Control totals were derived from the weighted sums of the B&B:08 cohort (including deceased and ineligible cases). They were weighted using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).



Table 43 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript respondents). To achieve model convergence, the final lower bound was 0.2 and the final upper bound was 5. The poststratification adjustment factor for weight J has the following characteristics:

- minimum: 0.07;
- median: 1.70; and
- maximum: 31.87.

**Table 43. Control totals and average poststratification adjustment factor for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by poststratification category: 2018**

Poststratification categories	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18JWT2)
Number of students who completed a baccalaureate degree from a NPSAS-eligible institution	1,657,730	1.90
Number of baccalaureate recipients, by control of institution		
Public	1,041,990	1.78
Private nonprofit	539,630	1.76
Private for-profit	76,110	4.39
Number of baccalaureate recipients, by sex		
Male	704,310	2.08
Female	953,420	1.78
Number of baccalaureate recipients, by major		
Unknown	1,650	0.93
Liberal arts	262,620	2.01
Psychology/history	262,800	1.81
Biology	82,820	1.73
Physical sciences	23,290	2.30
Mathematics and statistics	17,240	2.95
Computer and information sciences	39,690	3.18
Engineering	85,450	2.86
Education	110,180	1.52
Business	355,210	1.96
Health professions	113,600	1.67
Social sciences	11,960	1.82
Agricultural sciences	202,000	1.80
Missing	89,230	0.87
Total Direct Loan amount borrowed in the 2007–08 academic year (\$)	4,229,147,400	1.84

See notes at end of table.

**Table 43. Control totals and average poststratification adjustment factor for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by poststratification category: 2018—Continued**

Poststratification categories	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18JWT2)
Number of Direct Loan recipients in the 2007–08 academic year, by control of institution		
Public	414,430	1.70
Private nonprofit	275,990	1.61
Private for-profit	50,350	4.66
Total Pell Grant amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	583,085,580	2.13
Private nonprofit	305,313,360	2.05
Private for-profit	41,762,260	4.35
Total Parent PLUS Loan amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	433,483,770	1.47
Private nonprofit	634,582,790	1.56
Private for-profit	21,401,780	5.18

<sup>1</sup> Control totals were derived from the weighted sums of the B&B:08 cohort (including deceased and ineligible cases). They were weighted using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Table 44 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript respondents). To achieve model convergence, the final lower bound was 0.2 and the final upper bound was 5. The poststratification adjustment factor for weight K has the following characteristics:

- minimum: 0.07;
- median: 1.67; and
- maximum: 24.86.

**Table 44. Control totals and average poststratification adjustment factor for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by poststratification category: 2018**

Poststratification categories	Control total <sup>1</sup>	Average poststratification adjustment factor (BB18KWT2)
Number of students who completed a baccalaureate degree from a NPSAS-eligible institution	1,657,730	1.84
Number of baccalaureate recipients, by control of institution		
Public	1,041,990	1.75
Private nonprofit	539,630	1.75
Private for-profit	76,110	3.76
Number of baccalaureate recipients, by sex		
Male	704,310	1.96
Female	953,420	1.76
Number of baccalaureate recipients, by major		
Unknown	1,650	0.96
Liberal arts	262,620	1.93
Psychology/history	262,800	1.81
Biology	82,820	1.67
Physical sciences	23,290	2.19
Mathematics and statistics	17,240	3.25
Computer and information sciences	39,690	2.51
Engineering	85,450	2.73
Education	110,180	1.49
Business	355,210	1.92
Health professions	113,600	1.76
Social sciences	11,960	1.84
Agricultural sciences	202,000	1.79
Missing	89,230	0.86
Total Direct Loan amount borrowed in the 2007–08 academic year (\$)	4,229,147,400	1.78
Number of Direct Loan recipients in the 2007–08 academic year, by control of institution		
Public	414,430	1.67
Private nonprofit	275,990	1.60
Private for-profit	50,350	3.97
Total Pell Grant amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	583,085,580	2.08
Private nonprofit	305,313,360	2.02
Private for-profit	41,762,260	3.34
Total Parent PLUS Loan amount borrowed in the 2007–08 academic year, by control of institution (\$)		
Public	433,483,770	1.39
Private nonprofit	634,582,790	1.55
Private for-profit	21,401,780	3.82

<sup>1</sup> Control totals were derived from the weighted sums of the B&B:08 cohort (including deceased and ineligible cases). They were weighted using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 6.1.4 Weighting Adjustment Summary and Evaluation

To determine the effect of weighting adjustments, the UWEs and the distribution of weights were analyzed. Additionally, project staff created a receiver operating characteristic (ROC) curve (Hanley and McNeil 1982) to assess the performance of the nonresponse adjustment models. Specifically, the ROC curve measures how well the model correctly classified individuals with a known response status.<sup>25</sup> The ROC curve was developed in the following manner. The predicted probabilities of response ( $c$ ) for the ROC curve associated with the nonresponse are the product of the predicted response probabilities obtained at each of the two nonresponse adjustment steps. Note that for the second nonresponse adjustment (located nonresponse adjustments) predicted probabilities were calculated for all nonrespondents, but the models were developed excluding not-located nonrespondents. For any specified probability of response,  $c$ , two proportions were calculated:

- the proportion of respondents with a predicted probability of response greater than  $c$  (the true positive rate); and
- the proportion of nonrespondents with a predicted probability of response greater than  $c$  (the false positive rate).

The ROC curve is created by plotting the true positive rate against the false positive rate for all  $c$ . The area under the curve represents the probability that the nonresponse adjustment models correctly classify individuals. An area of 0.5 under a ROC curve indicates that a correct classification is made 50 percent of the time. This is equivalent to random assignment and would indicate the model provided no predictive benefit. An area of 1.0 indicates that the model always classified individuals correctly. Evaluations of all five B&B:08/18 analysis weight adjustment models follow.

**Analysis weight WTG000 (B&B:08/18 response)** is the product of the B&B:08/18 base weight and adjustments BB18WT2, BB18GWT1, and BB18GWT2 (defined above):

$$\text{WTG000} = \text{B\&B:08/18 base weight} \times \text{BB18WT2} \times \text{BB18GWT1} \times \text{BB18GWT2}.$$

Table 45 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight G. The UWE is 2.37 overall and ranges from 2.27 for students sampled from public institutions to 2.94 for students sampled from private for-profit

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<sup>25</sup> For a more detailed example of the ROC curve used in nonresponse modeling, see Iannacchione (2003).

institutions. Thus, regardless of the control of the baccalaureate-granting institution, the inflation on the variance of estimates due to the unequal weighting is relatively small, and even for those with higher UWEs, there is little concern about the effects on estimation because the sample design and sample sizes accounted for UWEs in this range to ensure precision of estimates.

**Table 45. Student weight distribution and unequal weighting effect (UWE) for analysis weight WTG000 (B&B:08/18 response), by control of baccalaureate-granting institution: 2018**

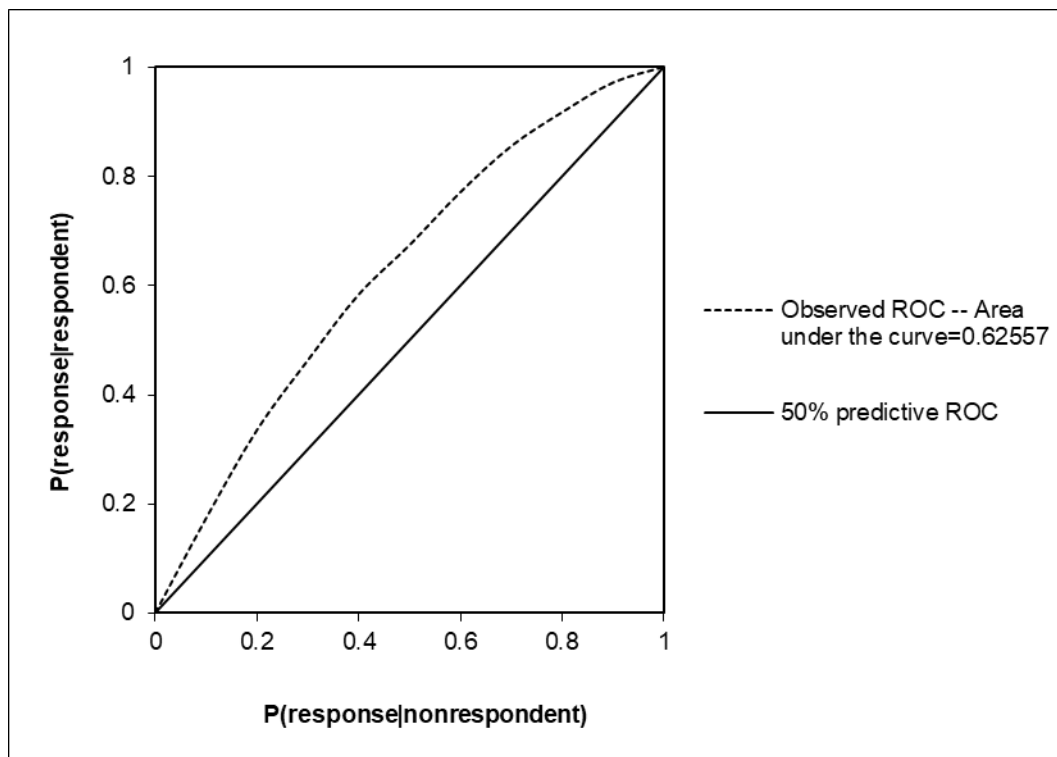
Control of baccalaureate-granting institution	Minimum	First quartile	Median	Third quartile	Maximum	Mean	UWE <sup>1</sup>
<b>Total</b>	<b>2.04</b>	<b>14.89</b>	<b>67.91</b>	<b>156.80</b>	<b>726.73</b>	<b>112.99</b>	<b>2.37</b>
Public	2.26	15.65	83.05	168.03	726.73	122.33	2.27
Private nonprofit	2.61	13.44	55.69	133.08	607.41	98.83	2.43
Private for-profit	2.04	16.52	25.95	136.55	534.14	109.66	2.94

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the squared weights, divided by the sum of the weights squared.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Figure 6 shows that the area under the ROC curve is approximately 0.63, so the nonresponse adjustment models for weight G predict the correct response status 63 percent of the time. Additionally, the area under the ROC curve can serve as the nonparametric Wilcoxon test, which can determine whether the predicted probability of response is different between respondents and nonrespondents. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are informative predictors of a sample member's overall response propensity.

**Figure 6. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WTG000 (B&B:08/18 response): 2018**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTH000** (B&B:08/18 and B&B:08/12 response) is the product of the B&B:08/18 base weight and adjustments BB18WT2, BB18HWT1, and BB18HWT2 (defined above):

$$WTH000 = B\&B:08/18 \text{ base weight} \times BB18WT2 \times BB18HWT1 \times BB18HWT2$$

Table 46 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight H. The UWE is 2.36 overall and ranges from 2.26 for students sampled from public institutions to 2.96 for students sampled from private for-profit institutions. Thus, regardless of control of institution, the inflation on the variance of estimates due to the unequal weighting is relatively small, and even for those with higher UWEs, there is little concern about the effects it could have on estimation because the sample design and sample sizes accounted for UWEs in this range to ensure precision of estimates.

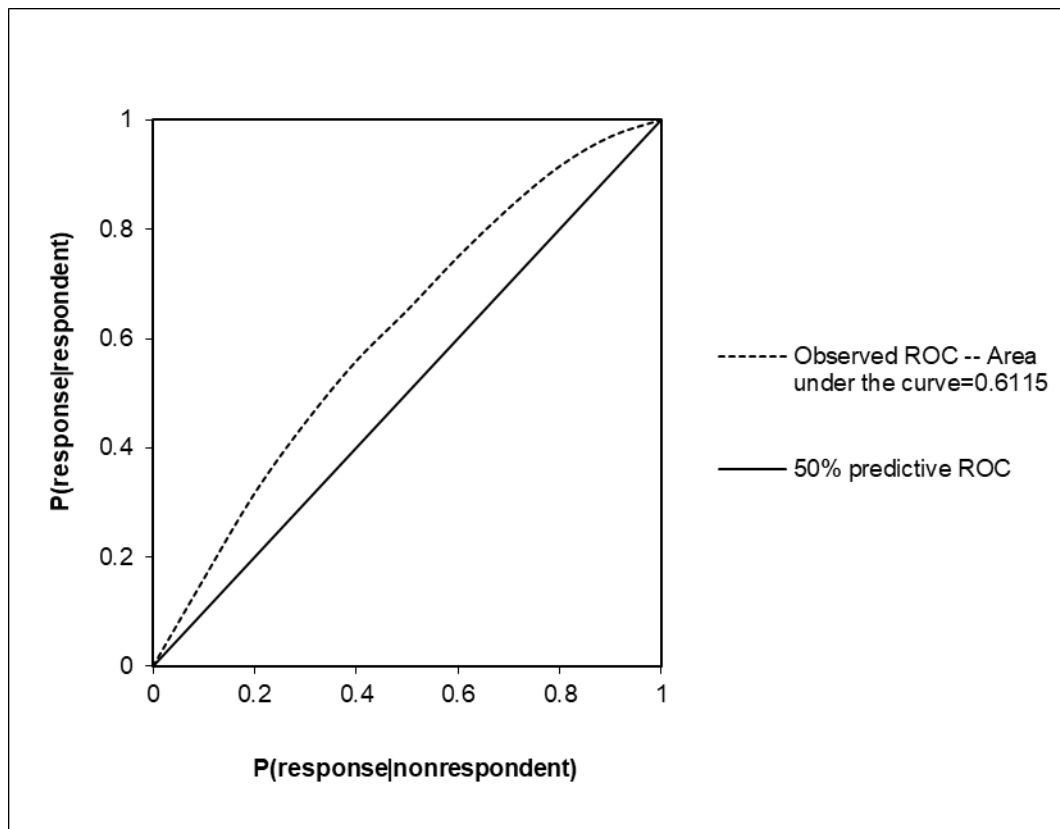
**Table 46. Student weight distribution and unequal weighting effect (UWE) for analysis weight WTH000 (B&B:08/18 and B&B:08/12 response), by control of baccalaureate-granting institution: 2018**

Control of baccalaureate-granting institution	Minimum	First quartile	Median	Third quartile	Maximum	Mean	UWE <sup>1</sup>
<b>Total</b>	<b>1.16</b>	<b>16.61</b>	<b>75.18</b>	<b>174.29</b>	<b>789.86</b>	<b>124.94</b>	<b>2.36</b>
Public	2.29	17.35	93.07	185.23	789.86	134.92	2.26
Private nonprofit	2.71	14.55	61.53	148.48	678.31	109.33	2.43
Private for-profit	1.16	18.58	30.19	154.61	590.14	124.97	2.96

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the squared weights, divided by the sum of the weights squared.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Figure 7 shows that the area under the ROC curve is approximately 0.61. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are highly informative predictors of a sample member's overall response propensity.

**Figure 7. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WTH000 (B&B:08/18 and B&B:08/12 response): 2018**

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTI000** (B&B:08/18 and transcript response) is the product of the B&B:08/18 base weight and adjustments BB18WT2, BB18IWT1, and BB18IWT2 (defined above):

$$WTI000 = \text{B\&B:08/18 base weight} \times \text{BB18WT2} \times \text{BB18IWT1} \times \text{BB18IWT2}$$

Table 47 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight I. The UWE is 2.37 overall and ranges from 2.27 for students sampled from public institutions to 3.00 for students sampled from private for-profit institutions. Thus, regardless of control of institution, the inflation on the variance of estimates due to the unequal weighting is relatively small, and even for those with higher UWEs, there is little concern about the effects it could have on estimation because the sample design and sample sizes accounted for UWEs in this range to ensure precision of estimates.

**Table 47. Student weight distribution and unequal weighting effect (UWE) for analysis weight WTI000 (B&B:08/18 and transcript response), by control of baccalaureate-granting institution: 2018**

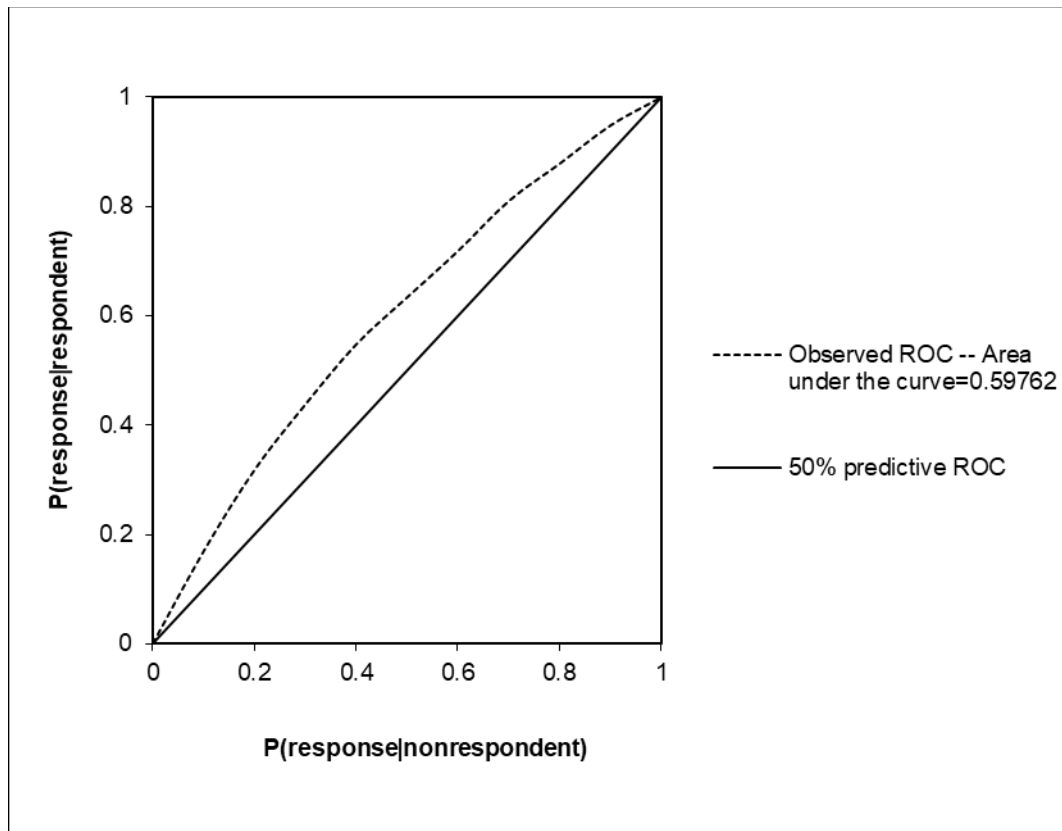
Control of baccalaureate-granting institution	Minimum	First quartile	Median	Third quartile	Maximum	Mean	UWE <sup>1</sup>
<b>Total</b>	<b>2.41</b>	<b>15.70</b>	<b>72.85</b>	<b>168.59</b>	<b>760.31</b>	<b>121.25</b>	<b>2.37</b>
Public	2.41	16.99	87.71	179.66	760.31	130.31	2.27
Private nonprofit	2.78	14.68	59.65	145.75	647.09	107.73	2.44
Private for-profit	4.35	15.37	27.07	147.10	630.05	114.10	3.00

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the squared weights, divided by the sum of the weights squared.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Figure 8 shows that the area under the ROC curve is approximately 0.60. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are highly informative predictors of a sample member's overall response propensity.



**Figure 8. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WT1000 (B&B:08/18 and transcript response): 2018**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTJ000** (B&B:08/18, B&B:08/12, and transcript response) is the product of the B&B:08/18 base weight and adjustments BB18WT2, BB18JW1, and BB18JW2 (defined above):

$$WTJ000 = \text{B\&B:08/18 base weight} \times \text{BB18WT2} \times \text{BB18JW1} \times \text{BB18JW2}$$

Table 48 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight J. The UWE is 2.37 overall and ranges from 2.26 for students sampled from public institutions to 2.98 for students sampled from private for-profit institutions. Thus, regardless of control of institution, the inflation on the variance of estimates due to the unequal weighting is relatively small, and even for those with higher UWEs, there is little concern about the effects it could have on estimation because the sample design and sample sizes accounted for UWEs in this range to ensure precision of estimates.

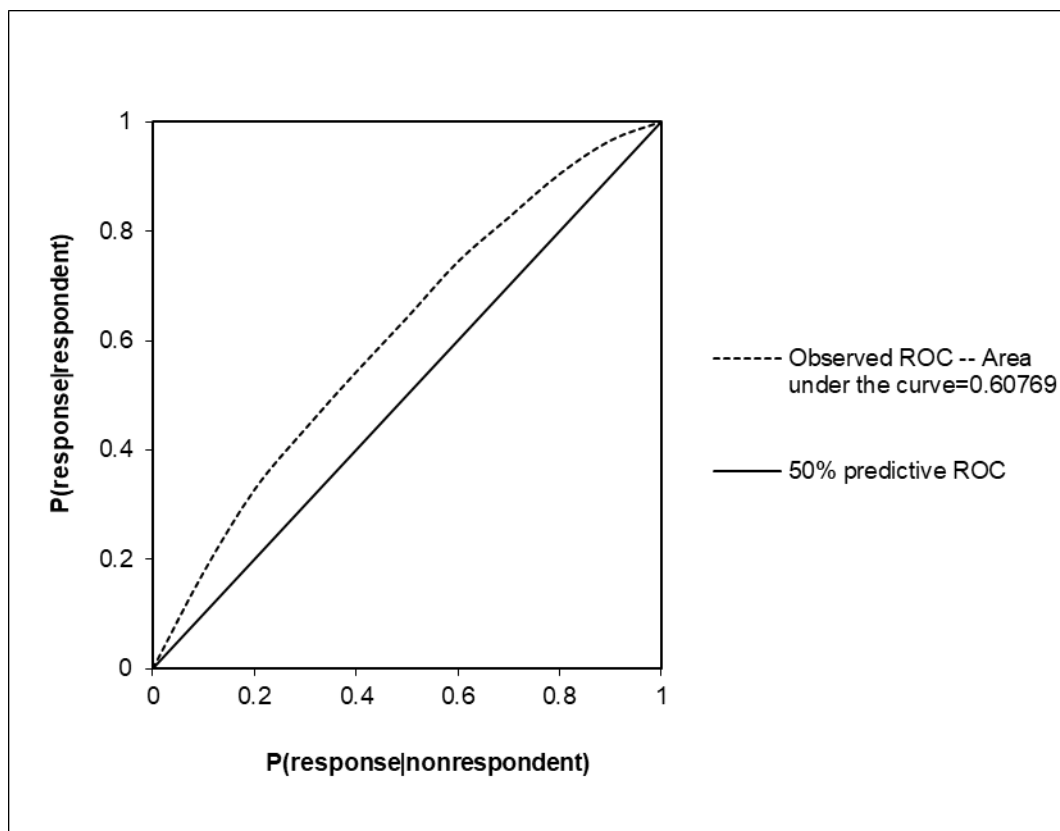
**Table 48 Student weight distribution and unequal weighting effect (UWE) for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by control of baccalaureate-granting institution: 2018**

Control of baccalaureate-granting institution	Minimum	First quartile	Median	Third quartile	Maximum	Mean	UWE <sup>1</sup>
<b>Total</b>	<b>2.44</b>	<b>16.78</b>	<b>80.49</b>	<b>186.09</b>	<b>843.82</b>	<b>133.94</b>	<b>2.37</b>
Public	2.44	19.29	97.04	198.34	843.82	143.56	2.26
Private nonprofit	2.89	15.28	66.53	159.12	747.06	119.15	2.47
Private for-profit	4.03	15.14	31.07	167.06	716.55	128.99	2.98

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the squared weights, divided by the sum of the weights squared.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Figure 9 shows that the area under the ROC curve is approximately 0.61. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are highly informative predictors of a sample member's overall response propensity.

**Figure 9. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response): 2018**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTK000** (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) is the product of the B&B:08/18 base weight and adjustments BB18WT2, BB18KWT1, and BB18KWT2 (defined above):

$$\text{WTK000} = \text{B\&B:08/18 base weight} \times \text{BB18WT2} \times \text{BB18KWT1} \times \text{BB18KWT2}$$

Table 49 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight K. The UWE is 2.39 overall and ranges from 2.28 for students sampled from public institutions to 3.05 for students sampled from private for-profit institutions. Thus, regardless of control of institution, the inflation on the variance of estimates due to the unequal weighting is relatively small, and even for those with higher UWEs, there is little concern about the effects it could have on estimation because the sample design and sample sizes accounted for UWEs in this range to ensure precision of estimates.

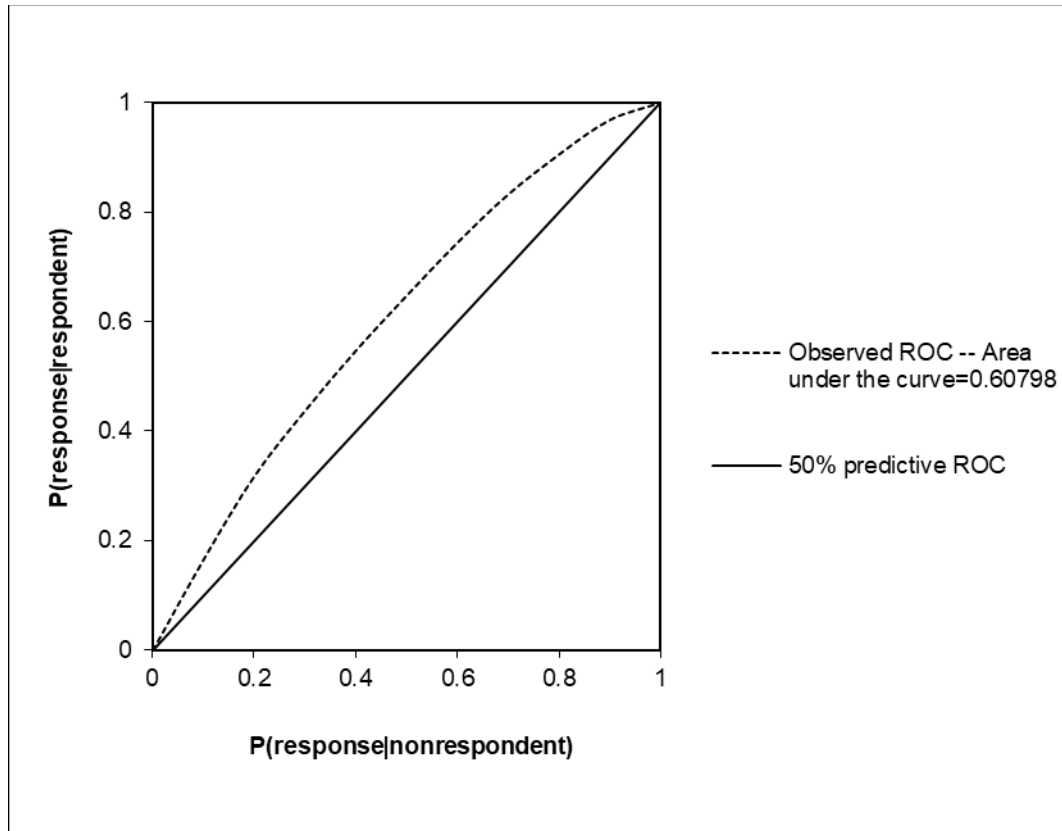
**Table 49. Student weight distribution and unequal weighting effect (UWE) for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by control of baccalaureate-granting institution: 2018**

Control of baccalaureate-granting institution	Minimum	First quartile	Median	Third quartile	Maximum	Mean	UWE <sup>1</sup>
<b>Total</b>	<b>2.54</b>	<b>17.41</b>	<b>85.41</b>	<b>199.43</b>	<b>883.14</b>	<b>143.54</b>	<b>2.39</b>
Public	2.54	20.45	103.57	212.28	883.14	154.05	2.28
Private nonprofit	2.90	16.31	71.41	171.36	761.01	127.24	2.48
Private for-profit	3.03	14.71	32.36	193.47	821.79	139.90	3.05

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the squared weights, divided by the sum of the weights squared.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Figure 10 shows that the area under the ROC curve is approximately 0.61. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are highly informative predictors of a sample member's overall response propensity.

**Figure 10. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response): 2018**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## 6.2 Weighted and Unweighted Response Rates

The overall B&B:08/18 response rate is an estimate of the proportion of the study population directly represented by the respondents. Because the B&B:08/18 study includes a subsample of NPSAS:08 nonrespondents, the overall B&B:08/18 response rate is the product of the NPSAS:08 institution-level response rate times the B&B:08/18 survey response rate. Furthermore, the overall B&B:08/18 response rates can only be estimated directly by institutional characteristics.

The overall B&B:08/18 response rate and its components (unweighted and weighted NPSAS:08 base-year institution response rates, B&B:08/18 -eligible sample sizes and number of respondents, and B&B:08/18 unit response rate) are shown in table 50 by control of the baccalaureate-granting institution. The institution-level response rates were the percentage of institutions that provided sufficient data to select the NPSAS:08 student-level sample; these rates are

presented and discussed in the *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (Cominole et al. 2010, p. 50). The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments. Section 6.3.1 analyzes the potential bias due to unit nonresponse and the effect the weight adjustments had in reducing the bias.

**Table 50. Unweighted and weighted NPSAS:08 institution response rates, B&B:08/18 student sample response rates, and overall response rates, by analysis weight and control of baccalaureate-granting institution: 2018**

Control of baccalaureate-granting institution	NPSAS:08 institution sample		B&B:08/18 student sample				Overall	
	Unweighted response rate	Weighted response rate <sup>1</sup>	Number eligible	Number of respondents	Unweighted response rate	Weighted response rate <sup>2</sup>	Unweighted response rate	Weighted response rate <sup>3</sup>
<b>WTG000 (B&amp;B:08/18 response)</b>								
<b>Total</b>	<b>89.0</b>	<b>90.1</b>	<b>17,070</b>	<b>14,670</b>	<b>86.0</b>	<b>78.9</b>	<b>76.5</b>	<b>71.1</b>
Public	91.9	91.2	9,860	8,520	86.4	79.9	79.4	72.9
Private nonprofit	87.4	86.7	6,330	5,460	86.3	78.1	75.4	67.7
Private for-profit	83.6	88.2	880	690	78.7	70.3	65.8	62.0
<b>WTH000 (B&amp;B:08/18 and B&amp;B:08/12 respondents)</b>								
<b>Total</b>	<b>89.0</b>	<b>90.1</b>	<b>17,070</b>	<b>13,270</b>	<b>77.7</b>	<b>68.9</b>	<b>69.2</b>	<b>62.1</b>
Public	91.9	91.2	9,860	7,720	78.3	70.6	72.0	64.4
Private nonprofit	87.4	86.7	6,330	4,940	78.0	66.5	68.2	57.7
Private for-profit	83.6	88.2	880	610	69.0	60.9	57.7	53.7
<b>WTI000 (B&amp;B:08/18 and transcript respondents)</b>								
<b>Total</b>	<b>89.0</b>	<b>90.1</b>	<b>16,960</b>	<b>13,670</b>	<b>80.6</b>	<b>73.5</b>	<b>71.7</b>	<b>66.2</b>
Public	91.9	91.2	9,790	8,000	81.7	74.8	75.1	68.2
Private nonprofit	87.4	86.7	6,290	5,010	79.6	72.0	69.6	62.4
Private for-profit	83.6	88.2	880	670	75.9	67.2	63.5	59.3
<b>WTJ000 (B&amp;B:08/18, B&amp;B:08/12, and transcript respondents)</b>								
<b>Total</b>	<b>89.0</b>	<b>90.1</b>	<b>16,960</b>	<b>12,380</b>	<b>73.0</b>	<b>64.6</b>	<b>65.0</b>	<b>58.2</b>
Public	91.9	91.2	9,790	7,260	74.1	66.4	68.1	60.6
Private nonprofit	87.4	86.7	6,290	4,530	72.0	62.1	62.9	53.8
Private for-profit	83.6	88.2	880	590	67.1	58.1	56.1	51.2
<b>WTK000 (B&amp;B:08/18, B&amp;B:08/12, B&amp;B:08/09, and transcript respondents)</b>								
<b>Total</b>	<b>89.0</b>	<b>90.1</b>	<b>16,960</b>	<b>11,550</b>	<b>68.1</b>	<b>58.0</b>	<b>60.6</b>	<b>52.3</b>
Public	91.9	91.2	9,790	6,760	69.1	60.0	63.5	54.7
Private nonprofit	87.4	86.7	6,290	4,240	67.4	55.9	58.9	48.5
Private for-profit	83.6	88.2	880	540	61.9	46.2	51.7	40.7

<sup>1</sup> The weighted response rate was calculated using the NPSAS:08 institution base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments.

<sup>2</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments.

<sup>3</sup> The weighted response rate was calculated using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) base weight, a product of the NPSAS:08 institution sampling weight; NPSAS:08 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:08 student sampling weight; and NPSAS:08 student multiplicity and unknown eligibility adjustments. NOTE: Control of institution is based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) and freshened from IPEDS:2005–06. Institution response rates were obtained from the 2007–08 *National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (Cominole et al. 2010, table 9, p. 50). Overall response rates are the product of the NPSAS:08 institution and B&B:08/18 survey response rates. The eligible respondent counts for analysis weights WTI000, WTJ000, and WTK000 differ from the counts for WTG000 and WTH000 due to perturbation (discussed in section 5.3). Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## 6.3 Nonresponse Bias Analysis

The sources of error in sample survey estimates are often dichotomized as sampling and nonsampling errors. Sampling error refers to the error that occurs because the survey is based on a sample of population members rather than the entire population. All other types of error are nonsampling error, including survey nonresponse (because of inability to contact sample members, their refusal to participate in the study, etc.) and measurement error, such as the error that occurs because the respondent had insufficient knowledge to answer correctly, because the intent of a survey question was not clear to the respondent, or because the data were not captured correctly (e.g., because of recording, editing, or data-entry errors).

Nonsampling error, such as nonresponse, is often nonrandom and may result in bias. In this section, nonsampling error is observed by comparing B&B:08/18 nonrespondents and respondents using characteristics known for both groups. Section 6.4.4 discusses measurement of sampling error by variance approximation.

NCES Statistical Standard 4-4-1 states that “Any survey stage of data collection with a unit or item response rate less than 85 percent must be evaluated for the potential magnitude of nonresponse bias before the data or any analysis using the data may be released.... Estimates of survey characteristics for nonrespondents and respondents are required to assess the potential nonresponse bias” (Seastrom 2014).

The bias in an estimated mean based on respondents,  $\bar{y}_{NR}$ , is the difference between the expected value of this mean and the population mean,  $\pi$ . Analysts can estimate the population mean for characteristics that are observed for both respondents and nonrespondents by calculating the mean from the full sample, which can be expressed in terms of the respondent mean and nonrespondent mean,  $\bar{y}_{NR}$ , as follows:  $\hat{\pi} = (1 - \eta) \bar{y}_R + \eta \bar{y}_{NR}$ , where  $\eta$  is the weighted (unit or item) nonresponse rate. For variables that are from the sampling frame rather than from the sample, analysts can estimate  $\pi$  without sampling error. They can then estimate nonresponse bias as the difference between the respondent mean and the full-sample mean:  $\hat{B}(\bar{y}_R) = \bar{y}_R - \hat{\pi}$ . Equivalently, nonresponse bias can be estimated as the difference between the mean for respondents and the mean for nonrespondents, multiplied by the weighted nonresponse rate:  $\hat{B}(\bar{y}_R) = \eta(\bar{y}_R - \bar{y}_{NR})$ .

Relative bias provides a measure of the magnitude of the bias relative to the sample mean and is estimated as  $\widehat{RB}(\bar{y}_R) = \hat{B}(\bar{y}_R)/\hat{\pi}$ . Effect size, as defined by Cohen (1988), is another measure of potential nonresponse bias. For continuous variables, it is computed as the estimated bias divided by the estimated standard deviation:  $\hat{B}(\bar{y}_R)/\hat{\sigma}_y$ . For categorical variables, it is computed as

$\sqrt{\sum_i (p_{0i} - p_{1i})^2 / p_{0i}}$ , where  $p_{0i}$  is the proportion of the full sample in category  $i$ , and  $p_{1i}$  is the proportion of respondents in category  $i$ . Effect sizes can be used in combination with bias and relative bias estimates and significance tests to evaluate the potential for nonresponse bias. Cohen classified an effect size as “small” when it is about 0.10, as “medium” when it is about 0.30, and as “large” when it is about 0.50.

B&B:08/18 staff conducted nonresponse bias analysis at the unit level and item level for the overall sample and by the control of the baccalaureate-granting institution. These analyses are described in the sections below. The unit-level nonresponse bias analysis results are summarized in tables 51 through 60, and detailed tables are provided in appendix K. The item-level response rates and nonresponse bias analysis results are also summarized in appendix K.

### 6.3.1 Unit-level Nonresponse Bias Analysis

Unit-level bias analysis was conducted for each of the five analytic weights (WTG000–WTK000) created for B&B:08/18 (weight construction described in section 6.1). As shown in table 50, all five respondent definitions resulted in overall weighted response rates ranging from 58 percent to 79 percent, all less than 85 percent. Therefore, a unit-level nonresponse bias analysis was conducted for each analysis weight, overall and within each institution category for B&B:08/18.

Nonresponse bias was estimated for variables known for all respondents and nonrespondents. Bias estimates for characteristic categories that did not meet reporting requirements (i.e., they had fewer than 30 nonrespondents) were excluded from calculations of summary statistics. The following variables were used for the nonresponse bias analysis:

- control of baccalaureate-granting institution (categorical, from NPSAS:08);
- region of baccalaureate-granting institution (categorical, from NPSAS:08);
- baccalaureate-granting institution total enrollment from IPEDS 2007–08 file (quartiles, from NPSAS:08);
- age group as of December 31, 2007 (quartiles, from NPSAS:08);
- veteran status (yes/no) as of the B&B:08/18 survey (from B&B:08/18);
- race/ethnicity (categorical, from NPSAS:08);
- sex (male/female/unknown, from NPSAS:08);
- SSN obtained (yes/no) from the baccalaureate-granting institution enrollment list (from NPSAS:08);



- Pell Grant amount received in 2007–08 (categorical – from NPSAS:08);
- Direct Loan amount received in 2007–08 (quartiles – from NPSAS:08);
- Parent PLUS Loan amount received in 2007–08 (quartiles, from NPSAS:08);
- federal aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- institution aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- state aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- any aid receipt (yes/no) in 2007–08 (from NPSAS:08);
- baccalaureate degree major (categorical, from NPSAS:08);
- percent of federal student loans that is still owed as of Oct. 31, 2019 (categorical, from B&B:08/18);
- cumulative amount borrowed in federal student loans as of Oct. 31, 2019 (categorical, from B&B:08/18); and
- federal loan default status as of Oct. 31, 2019 (yes/no/not applicable, from B&B:08/18).

To thoroughly understand the effects of the nonresponse and poststratification weight adjustment models, nonresponse bias and relative bias were calculated for each value of the variables listed above, for each of the five analysis weights using (1) the B&B:08/18 base weight, (2) the nonresponse-adjusted weight, and (3) the final weight (after poststratification adjustments).

**Analysis weight WTG000 (B&B:08/18 response) nonresponse bias analysis.**

As shown in table 51, the unit-nonresponse weighting adjustment eliminated almost all significant bias on the observable characteristics. Before weighting, the percentage of characteristics that were significantly biased for respondents was 55 percent overall. After the nonresponse adjustment, the percentage of characteristics that remained significantly biased was 3 percent overall and ranged from 1 percent for students sampled from private nonprofit institutions to 4 percent for students sampled from public institutions and students sampled from private for-profit institutions.

**Table 51. Summary statistics of unit-level nonresponse bias analysis for analysis weight WTG000 (B&B:08/18 response), by control of baccalaureate-granting institution: 2018**

Nonresponse bias statistic <sup>1</sup>	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Before nonresponse weight adjustments <sup>2</sup>				
Mean percent relative bias across characteristics	5.62	4.84	7.46	10.87
Median percent relative bias across characteristics	4.25	2.94	5.02	9.45
Percentage of characteristics with significant bias	55.00	36.62	44.78	10.42
Median effect size	0.05	0.04	0.08	0.11
After nonresponse weight adjustments <sup>3</sup>				
Mean percent relative bias across characteristics	0.49	2.71	4.02	8.81
Median percent relative bias across characteristics	#	1.51	2.57	8.32
Percentage of characteristics with significant bias	2.50	4.23	1.49	4.17
Median effect size	#	0.02	0.03	0.07

# Rounds to zero.

<sup>1</sup> Relative bias and effect size are calculated using the weighted differences between respondent and full-sample means. Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean. Effect size is calculated as the square root of the sum over categories of the squared differences over full-sample means.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:08/18 base weight, and the respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

As shown in table 52, the overall difference between means for respondents before and after poststratification adjustments was 1.14. For the absolute differences between means for the full sample and respondents after poststratification adjustments, the mean difference was 1.18.

**Table 52. Summary of unit-level differences between means for analysis weight WTG000 (B&B:08/18 response), by control of baccalaureate-granting institution: 2018**

Summary statistic	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Difference between means for respondents before and after poststratification adjustment <sup>1</sup>				
Mean absolute difference across characteristics	1.14	1.13	1.92	5.36
Median absolute difference across characteristics	0.71	0.55	1.22	4.33
Difference between means for the full sample and respondents after poststratification adjustment <sup>2</sup>				
Mean absolute difference across characteristics	1.18	1.25	1.89	4.19
Median absolute difference across characteristics	0.76	0.72	1.38	3.31

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight, and respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) nonresponse bias analysis.** As shown in table 53, the unit-nonresponse weighting adjustment eliminated some, but not all, significant bias on the observable characteristics. Before weighting, the percentage of characteristics that were significantly biased for respondents was 51 percent overall. After the nonresponse adjustment, the percentage of characteristics that remained significantly biased was 1 percent overall and ranged from 3 percent for students sampled from private nonprofit institutions to 7 percent for students sampled from private for-profit institutions.

**Table 53. Summary of unit-level nonresponse bias analysis for analysis weight WTH000 (B&B:08/18 and B&B:08/12 respondents), by control of baccalaureate-granting institution: 2018**

Nonresponse bias statistic <sup>1</sup>	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Before nonresponse weight adjustments <sup>2</sup>				
Mean percent relative bias across characteristics	6.59	5.94	9.26	13.26
Median percent relative bias across characteristics	4.94	3.65	6.01	10.72
Percentage of characteristics with significant bias	51.22	34.72	38.89	10.71
Median effect size	0.06	0.05	0.08	0.14
After nonresponse weight adjustments <sup>3</sup>				
Mean percent relative bias across characteristics	0.71	3.29	4.93	11.16
Median percent relative bias across characteristics	#	1.54	2.76	7.11
Percentage of characteristics with significant bias	1.22	4.17	2.78	7.14
Median effect size	#	0.02	0.04	0.10

# Rounds to zero.

<sup>1</sup> Relative bias and effect size are calculated using the weighted differences between respondent and full-sample means. Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean. Effect size is calculated as the square root of the sum over categories of the squared differences over full-sample means.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:08/18 base weight, and the respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

As shown in table 54, the overall difference between means for respondents before and after poststratification adjustments was 1.11. For the absolute differences between means for the full sample and respondents after poststratification adjustment, the mean difference was 1.15.

**Table 54. Summary of unit-level differences between means for analysis weight WTH000 (B&B:08/18 and B&B:08/12 respondents), by control of baccalaureate-granting institution: 2018**

Summary statistic	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Difference between means for respondents before and after poststratification adjustment <sup>1</sup>				
Mean absolute difference across characteristics	1.11	1.18	1.64	5.94
Median absolute difference across characteristics	0.61	0.57	1.03	4.82
Difference between means for the full sample and respondents after poststratification adjustment <sup>2</sup>				
Mean absolute difference across characteristics	1.15	1.24	1.85	4.08
Median absolute difference across characteristics	0.62	0.64	1.37	3.77

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight, and respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

Analysis weight WTI000 (B&B:08/18 and transcript response) nonresponse bias analysis. As shown in table 55, the unit-nonresponse weighting adjustment eliminated some, but not all, significant bias on the observable characteristics. Before weighting, the percentage of characteristics that were significantly biased for respondents was 43 percent overall. After the nonresponse adjustment, the percentage of characteristics that remained significantly biased was 5 percent overall.

**Table 55. Summary of unit-level nonresponse bias analysis for analysis weight WTI000 (B&B:08/18 and transcript respondents), by control of baccalaureate-granting institution: 2018**

Nonresponse bias statistic <sup>1</sup>	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Before nonresponse weight adjustments <sup>2</sup>				
Mean percent relative bias across characteristics	5.87	5.56	8.10	11.47
Median percent relative bias across characteristics	4.70	4.13	6.03	9.30
Percentage of characteristics with significant bias	42.68	30.99	38.24	9.80
Median effect size	0.05	0.04	0.08	0.12
After nonresponse weight adjustments <sup>3</sup>				
Mean percent relative bias across characteristics	1.43	2.87	4.62	9.85
Median percent relative bias across characteristics	0.83	1.67	2.78	9.69
Percentage of characteristics with significant bias	4.88	7.04	#	5.88
Median effect size	0.01	0.01	0.03	0.13

# Rounds to zero.

<sup>1</sup> Relative bias and effect size are calculated using the weighted differences between respondent and full-sample means. Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean. Effect size is calculated as the square root of the sum over categories of the squared differences over full-sample means.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:08/18 base weight, and the respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

As shown in table 56, the overall difference between means for respondents before and after poststratification adjustments was 1.14. For the absolute differences between means for the full sample and respondents after poststratification adjustment, the mean difference was 1.17.

**Table 56. Summary of unit-level differences between means for analysis weight WT1000 (B&B:08/18 and transcript respondents), by control of baccalaureate-granting institution: 2018**

	Control of baccalaureate-granting institution			
Summary statistic	Overall	Public	Private nonprofit	Private for-profit
Difference between means for respondents before and after poststratification adjustment <sup>1</sup>				
Mean absolute difference across characteristics	1.14	1.14	1.84	5.83
Median absolute difference across characteristics	0.63	0.57	1.14	5.09
Difference between means for the full sample and respondents after poststratification adjustment <sup>2</sup>				
Mean absolute difference across characteristics	1.17	1.21	1.84	4.29
Median absolute difference across characteristics	0.59	0.70	1.23	3.24

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight, and respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) nonresponse bias analysis.** As shown in table 57, the unit-nonresponse weighting adjustment eliminated some, but not all, significant bias on the observable characteristics. Before weighting, the percentage of characteristics that were significantly biased for respondents was 41 percent overall. After the nonresponse weight adjustment, the percentage of characteristics that remained significantly biased was 1 percent overall.

**Table 57. Summary of unit-level nonresponse bias analysis for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript respondents), by control of baccalaureate-granting institution: 2018**

Nonresponse bias statistic <sup>1</sup>	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Before nonresponse weight adjustments <sup>2</sup>				
Mean percent relative bias across characteristics	6.98	6.77	9.93	14.02
Median percent relative bias across characteristics	5.19	4.82	6.75	10.96
Percentage of characteristics with significant bias	40.96	31.51	28.00	8.77
Median effect size	0.06	0.06	0.08	0.15
After nonresponse weight adjustments <sup>3</sup>				
Mean percent relative bias across characteristics	1.43	3.39	6.33	10.13
Median percent relative bias across characteristics	0.84	1.91	2.89	7.99
Percentage of characteristics with significant bias	1.20	2.74	5.33	3.51
Median effect size	0.01	0.03	0.04	0.11

# Rounds to zero.

<sup>1</sup> Relative bias and effect size are calculated using the weighted differences between respondent and full-sample means. Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean. Effect size is calculated as the square root of the sum over categories of the squared differences over full-sample means.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:08/18 base weight, and the respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

As shown in table 58, the overall difference between means for respondents before and after poststratification adjustment was 1.09. For the absolute differences between means for the full sample and respondents after poststratification adjustments, the mean difference was 1.12.

**Table 58. Summary of unit-level differences between means for analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript respondents), by control of baccalaureate-granting institution: 2018**

Summary statistic	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Difference between means for respondents before and after poststratification adjustment <sup>1</sup>				
Mean absolute difference across characteristics	1.09	1.25	1.40	5.42
Median absolute difference across characteristics	0.50	0.63	0.84	5.17
Difference between means for the full sample and respondents after poststratification adjustment <sup>2</sup>				
Mean absolute difference across characteristics	1.12	1.21	1.71	3.91
Median absolute difference across characteristics	0.57	0.68	1.15	3.48

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight, and respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) nonresponse bias analysis.** As shown in table 59, the unit-nonresponse weighting adjustment eliminated some, but not all, significant bias on the observable characteristics. Before weighting, the percentage of characteristics that were significantly biased for respondents was 39 percent overall. After the nonresponse weight adjustment, the percentage of characteristics that remained significantly biased was 1 percent overall.

**Table 59. Summary of unit-level nonresponse bias analysis for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript respondents), by control of baccalaureate-granting institution: 2018**

	Control of baccalaureate-granting institution			
Nonresponse bias statistic <sup>1</sup>	Overall	Public	Private nonprofit	Private for-profit
Before nonresponse weight adjustments <sup>2</sup>				
Mean percent relative bias across characteristics	8.05	7.63	11.13	17.57
Median percent relative bias across characteristics	5.94	5.43	7.95	12.24
Percentage of characteristics with significant bias	38.55	32.00	31.58	6.90
Median effect size	0.06	0.06	0.10	0.17
After nonresponse weight adjustments <sup>3</sup>				
Mean percent relative bias across characteristics	1.43	3.33	6.21	15.83
Median percent relative bias across characteristics	0.84	1.69	3.55	12.59
Percentage of characteristics with significant bias	1.20	2.67	#	3.45
Median effect size	0.01	0.02	0.04	0.12

# Rounds to zero.

<sup>1</sup> Relative bias and effect size are calculated using the weighted differences between respondent and full-sample means. Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean. Effect size is calculated as the square root of the sum over categories of the squared differences over full-sample means.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:08/18 base weight, and the respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

As shown in table 60, the overall difference between means for respondents before and after poststratification adjustment was 1.08. For the absolute differences between means for the full sample and respondents after poststratification adjustments, the mean difference was 1.12.

**Table 60. Summary of unit-level differences between means for analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by control of baccalaureate-granting institution: 2018**

Summary statistic	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
Difference between means for respondents before and after poststratification adjustment <sup>1</sup>				
Mean absolute difference across characteristics	1.08	1.18	1.49	5.43
Median absolute difference across characteristics	0.61	0.68	0.86	4.88
Difference between means for the full sample and respondents after poststratification adjustment <sup>2</sup>				
Mean absolute difference across characteristics	1.12	1.16	1.67	4.35
Median absolute difference across characteristics	0.62	0.65	1.22	3.65

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:08/18 base weight, and respondent means are weighted using the B&B:08/18 base weight adjusted for nonresponse and poststratification.

NOTE: Characteristics that had fewer than 30 nonrespondents were excluded from nonresponse bias statistic calculations.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

### 6.3.2 Bias Analysis: Item Level

Item-level nonresponse bias analysis was conducted in accordance with NCES Statistical Standards. NCES Statistical Standard 4-4-3A states “For an item with a low total response rate, respondents and nonrespondents can be compared on sampling frame and/or questionnaire variables for which data on respondents and nonrespondents are available. Base weights must be used in such analysis. Comparison items should have very high response rates. A full range of available items should be used for these comparisons. This approach may be limited to the extent that items available for respondents and nonrespondents may not be related to the low response rate item being analyzed” (Seastrom 2014).

Moreover, NCES Statistical Standard 1-3-5 states “Item response rates are calculated as the ratio of the number of respondents for whom an in-scope response was obtained ( $I^x$  for item  $x$ ) to the number of respondents who are asked to answer that item. The number asked to answer an item is the number of unit level respondents ( $I$ ) minus the number of respondents with a valid skip for item  $x$  ( $V^x$ ). When an abbreviated questionnaire is used to convert refusals, the eliminated questions are treated as item nonresponse.... In longitudinal analyses, the numerator of an item response rate includes cases that have data available for all waves included in the analysis and the denominator includes the number of respondents eligible to respond in all waves included in the analysis. In the case of constructed variables, the numerator includes cases that have available data for the full set of items required to



construct the variable, and the denominator includes all respondents eligible to respond to all items in the constructed variable” (Seastrom 2014). That is, the item response rate (RRI) is calculated as

$$RRI^x = \frac{I^x}{I - v^x}.$$

A nonresponse bias analysis was conducted for all imputed items<sup>26</sup> and analysis variables with a weighted response rate less than 85 percent overall (78 variables) or by control of institution (31 variables). The procedures and variables used for the item-level nonresponse bias analysis are the same as those used for the unit-level nonresponse bias analysis presented above. A sample member was defined to be an item respondent for a variable if that sample member had data for that variable from any source, including logical imputation. The results of the nonresponse bias analyses varied across all 110 items. Appendix K, provides a summary of the item nonresponse bias analysis for each item analyzed.

As shown in appendix I, table I-1, the weighted item response rates for imputed and select analysis variables, for all sample members, ranged from 28 percent for *Primarily student or employee while enrolled in 2018* (B3DWRKS) to 100 percent for several demographic and student loan variables. When a respondent’s eligibility for an item is unknown, that individual is treated as an item nonrespondent. For example, only employed individuals enrolled in 2018 are eligible to answer B3DWRKS, so individuals whose employment or enrollment status is unknown are considered item nonrespondents.

Imputation procedures (described in section 5.4) were conducted to minimize item nonresponse bias. Although bias after imputation is not directly measurable, it is possible to compare estimates before and after imputation to determine whether the imputation changed the estimates. Changes are generally indicative of a reduction in bias, whereas no change suggests bias was not reduced or was not present.

The difference between the pre- and postimputation means was computed using the analysis weight, WTG000 (B&B:08/18 response). All differences were tested for statistical significance using *t* tests. For categorical variables, the differences between pre- and postimputation means reported in appendix I are size-weighted means of

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<sup>26</sup> Variables with only logical imputations are not included. Some of the imputed items were used to derive analysis variables but are not analysis variables themselves. For a full list of analysis variables, see appendix J. All nonimputed variables either have no missing data or are derived from variables that are imputed or have no missing data.

category-level differences.<sup>27</sup> The variable is marked as being significantly different after imputation if a significant difference is identified for any category.

These tests were complemented by effect size calculations. Effect sizes for categorical variables are calculated as  $\sqrt{\sum_i (p_{0i} - p_{1i})^2 / p_{0i}}$ , where  $p_{0i}$  is the proportion of respondents in category  $i$  after imputation, and  $p_{1i}$  is the proportion of respondents in category  $i$  before imputation. For continuous variables, effect size is the difference in pre- and postimputation means, divided by the postimputation standard deviation.

As displayed in appendix I, tables I-2 and I-3, statistically significant differences between the pre- and post-imputation means were found for about 31 percent of the variables (excluding those that did not meet reporting standards) for sample members overall. Effect sizes for these differences range from 0.01 to 0.10. About 26 percent of the differences reported by institution control were found to be statistically significant, with effect sizes for these differences ranging from 0.01 to 0.35.

## 6.4 Variance Estimation

Every estimate calculated from a probability-based sample survey, such as a mean, a percentage, or a regression coefficient, has an associated variance. Hypothesis testing, calculation of confidence intervals, and modeling that uses complex survey data all require the calculation of variances using appropriate methods that account for the sampling design. Complex sample designs, like those used for NPSAS:08 and B&B:08/18, result in data that violate the assumptions that are normally required to assess the statistical significance of population estimate comparisons. The variances of the estimates from complex surveys may vary from those that would be expected if the sample were a simple random sample and the observations were independent and identically distributed random variables. To estimate variances of B&B:08/18 statistics, researchers can use either the bootstrap replication procedure or the Taylor series linearization procedure. Section 6.4.1 contains a discussion of the replicate weights created for the bootstrap procedure. The analysis strata and PSUs created for the Taylor series procedure are discussed in section 6.4.2. Use of software packages for proper variance estimation is discussed in section 6.4.3.

The survey design effect for a statistic is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a

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<sup>27</sup> The size-weighted means are weighted using the unweighted count of eligible students in each category for the variable.

simple random sample of the same size. It is often used to measure the effects that sample design features have on the precision of survey estimates. For example, stratification tends to decrease the variance, but multistage sampling and unequal sampling rates usually increase the variance. In addition, weight adjustments for nonresponse (performed to reduce nonresponse bias) and poststratification increase the variance by increasing the weight variation. Design effects are discussed in 6.4.4 and Appendix L.

### 6.4.1 *Bootstrap Replicate Weights*

Bootstrap replication variance estimation is the same strategy that was used for NPSAS:08. It accounts for the following:

1. stratification at all stages of sampling;
2. unequal weighting;
3. sample clustering;
4. weight adjustments for nonresponse and poststratification;
5. nonlinear statistics and percentages, as well as linear statistics;
6. finite population corrections (FPCs) at the institution stage of sampling and high sampling rates in some first-stage sampling strata; and
7. the ability to test hypotheses about students based on normal distribution theory by ignoring the FPCs at the student level of sampling.

Commonly applied bootstrap variance estimation techniques account for 1 through 5 listed above; however, to account for 6 and 7 above, a method adapted from Kott (1988) and Flyer (1987) was applied. The following notations are used in the steps delineated below:

- $n_h$  = the number of institutions selected and responding from stratum  $h$ ;
- $\hat{N}_h$  = the frame count of institutions in stratum  $h$ ;
- $m_{hi}$  = the number of secondary sampling units (SSUs) or students selected from institution  $i$  in stratum  $h$ ;
- $n_h^*$  = the bootstrap sample size of PSUs in stratum  $h$  when bootstrap sampling is at the PSU level in stratum  $h$ ;
- $n_{hi}^*$  = the number of times PSU  $hi$  is selected in the bootstrap sample when bootstrap sampling is at the PSU level;

- $m_{hi}^*$  = the bootstrap sample size of SSUs in PSU  $hi$  when bootstrap sampling is at the SSU level in stratum  $h$ ;
- $m_{hij}^*$  = the number of times SSU  $hij$  is selected in the bootstrap sample when bootstrap sampling is at the SSU level; and
- $w_{hijk}^*$  = the additional weight adjustment factor for student  $hijk$  due to bootstrap sampling.

The process of forming replicates and computing replicate weights follows:

1. Approximate the stratum-level first-stage FPC for the selected stratum sample using Kott's (1988) model-based approximation.

$$FPC_h = \frac{\hat{N}_h - n_h}{\hat{N}_h}.$$

2. Generate a uniform (0, 1) random number  $R_h$  for each stratum  $h$ .
3. If  $R_h \leq FPC_h$ , form a replicate sample in stratum  $h$  by randomly selecting  $n_h^* = n_h - 1$  institutions with equal probability and with replacement after each selection. When  $n_h^*$  is greater than 1, a PSU may be selected more than once; in essence,  $n_{hi}^*$  may take on values of 0, 1, . . . ,  $n_h^*$ . Adjust the weights by the factor

$$w_{hijk}^* = n_{hi}^* \frac{n_h}{n_h^*}.$$

4. Otherwise, form a replicate sample in stratum  $h$  by randomly selecting  $m_{hi}^* = m_{hi} - 1$  second-stage units within each institution in stratum  $h$ . In this case,  $m_{hij}^*$  may take on values of 0, 1, . . . ,  $m_{hi}^*$ . Adjust the weights by the factor

$$w_{hijk}^* = m_{hij}^* \frac{m_{hi}}{m_{hi}^*}.$$

5. Repeat steps 3 and 4 in all strata to form one replicate sample.
6. Steps 1 through 5 should then be repeated 200 times to form 200 replicate samples.

This adapted method uses random switching between PSU bootstrap sampling and SSU bootstrap sampling to represent the proper mix of the first- and second-stage variance components when an FPC is applied at the first stage of sampling. It extends the general method described by Flyer (1987) for half-sample replication to a more general bootstrap.

This method incorporated the FPC factor only at the first stage, where sampling fractions were generally high. At the second stage, where the sampling fractions were generally low, the FPC factor was set to 1.00.

The Flyer-Kott methodology was used to develop a vector of bootstrap sample weights that are available on the restricted-use files. These weights are zero for units not selected in a particular bootstrap sample; weights for other units are inflated for the bootstrap subsampling.

The analysis weights WTG000–WTK000, defined in section 6.1, are used for computing estimates such as means, percentages, and regression coefficients, and the vector of replicate weights allows for computation of additional estimates for the sole purpose of estimating variances. Assuming  $B$  sets of replicate weights, analysts can estimate the variance of any estimate,  $\hat{\theta}$ , by replicating the estimation procedure for each replicate and computing a simple variance of the replicate estimates as follows:

$$\text{var}(\hat{\theta}) = \frac{\sum_{b=1}^B (\hat{\theta}_b^* - \hat{\theta})^2}{B},$$

where  $\hat{\theta}_b^*$  is the estimate based on the  $b$ th replicate weight (where  $b = 1$  to the number of replicates) and  $B$  is the total number of sets of replicate weights.

The number of replicate weights was set to 200 to ensure stable variance estimates for a variety of estimates. The nonresponse and poststratification adjustments described in section 6.1 were applied to each replicate to create the 200 replicate weights included on the analysis file (WTG001–WTG200 through WTK001–WTK200), so that the variances could be estimated to account for these weight adjustments. To achieve convergence for some of these models, as with the analysis weight models previously described, the bounds on the adjustment factors had to be loosened or model variables had to be collapsed. However, when necessary, the adjustments were minimal.

### 6.4.2 Taylor Series

The Taylor series variance estimation procedure is a well-known technique used to estimate the variances of nonlinear statistics.<sup>28</sup> The procedure takes the first-order Taylor series approximation of a nonlinear statistic and substitutes the linear representation into the appropriate variance formula based on the sample design (Woodruff 1971).

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<sup>28</sup> For probability-based sample surveys, such as B&B:08/18, most estimates are nonlinear statistics due to the complex sampling design.

For stratified multistage surveys, the Taylor series procedure requires variance estimation strata and variance estimation PSUs, defined from the sampling strata and PSUs used in the first stage of sampling (NPSAS:08 for B&B:08/18). The steps used in the construction of the NPSAS:08 strata and PSU variables are described in chapter 6 of the *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (Cominole et. al 2010). The variance estimation formulas require at least two PSUs in each stratum. When B&B:08/18 strata did not contain two PSUs, the NPSAS:08 variance estimation strata or PSUs were collapsed. The following three rules were used: variance estimation strata were combined with others within the original NPSAS:08 sampling strata; schools sampled with certainty were combined with other schools sampled with certainty; and noncertainty schools were combined with other noncertainty schools. In addition, the sort order that was used for constructing the NPSAS:08 variance estimation strata and PSUs was used for B&B:08/18. A variance estimation stratum was combined with the next stratum in the sorted list. If the stratum was the first in the sorted list, then it was combined with the next stratum in the list. The single PSU then became an additional PSU in the new variance estimation strata.

The NPSAS:08 restricted-use data files provided two sets of variables for Taylor series variance estimation, and B&B:08/18 also provides two sets of variables. One set of variables is used in software that assumes that the first-stage sampling units (institutions) were sampled with replacement (or with small selection probabilities) and does not account for the FPC at the institution level of sampling. The other set of variables is used in software that assumes sampling of institutions without replacement in the calculation of variances and does account for the FPC. Both sets of variables are provided because not all survey data analysis packages have the option to incorporate the FPC in the variance calculations. When the first-stage units are sampled with very small probabilities, the estimated variances using the with-replacement variance formulas and the without-replacement variance formulas are the same.

The set of variables that assume the first-stage units were sampled without replacement and account for the FPC includes the analysis stratum (BB18FANALSTR), analysis PSU (BB18FANALPSU), the analysis SSU (BB18FANALSSU), and the count of PSUs in an analysis stratum (BB18PSUCOUNT). The set of variables that assume the first-stage units were sampled with replacement includes the analysis stratum (BB18ANALSTR) and analysis PSU (BB18ANALPSU). Ultimately, BB18FANALSTR equals the institutional variance estimation stratum BB18ANALSTR, and BB18FANALPSU equals BB18ANALPSU. BB18FANALSSU was created by randomly dividing the NPSAS:08 analysis PSUs into two parts. These variables are a by-product of the

bootstrap variance estimation weights (described in section 6.4.1), and the justification for using the without-replacement variance formulas follows from the assumptions described by Kott (1988). Some values of the variance estimation strata, PSU variables, and SSU variables were combined to have at least two SSUs in each PSU and at least two PSUs in each stratum. The same stratum and PSU terms, under with-replacement and without-replacement assumptions, were used for analysis with the cross-sectional weight.

### 6.4.3 Software Use for Variance Estimation

Table 61 summarizes the weight and variance estimation variables and how they are used in selected software packages that allow for bootstrap variance estimation (the R survey package, the SAS survey data analysis procedures, Stata, SUDAAN, and WesVar), Taylor series variance estimation with replacement (IBM SPSS complex samples, the R survey package, the SAS survey data analysis procedures, Stata, and SUDAAN), and Taylor series variance estimation without replacement (the R survey package, Stata, and SUDAAN). The provided code is intended for use within respective program statements or procedures and cannot be used alone as shown in the table. The code may need to be revised to be appropriate for a user's specific data file and coding decisions, and for that reason, the provided code may require editing before it is implemented by some users.

**Table 61-A. Example of relevant variables and code related to the use of analysis weight WTG000 and balanced repeated replicate variance estimation, by statistical software: 2018**

Variables	Software	Code
Analysis weight: WTG000	R survey package <sup>1</sup>	mydesign <- svrepdesign(type="BRR", weights=~WTG000,repweights="WTG00[1-200]", combined.weights=FALSE data=mydata)
Replicate weights: WTG001–WTG200	SAS survey analysis procedures	VARMETHOD = BRR WEIGHT WTG000; REPWEIGHTS WTG001-WTG200;
	Stata	svyset [pweight=wtg000], brrweight(wtg001 – wtg200) vce(brr) mse
	SUDAAN	DESIGN = BRR WEIGHT WTG000; REPWGT WTG001 -WTG200/ df=199;
	WesVar	Method: BRR Full sample weight: WTG000 Replicates: WTG001-WTG200

<sup>1</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

NOTE: Table displays example code using analysis weight WTG000 and associated replicate weights WTG001–WTG200. This code may be used with any analysis weight WTH000–WTK000 and respective replicate weights. The survey data analysis software specifications are given for the following versions of the software packages: SAS 9.3 and newer, Stata 12 and newer, SUDAAN 11.0.1, and WesVar 4.3 and newer.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table 61-B. Example of relevant variables and code related to the use of analysis weight WTG000 and Taylor series variance estimation with replacement, by statistical software: 2018**

Variables	Software	Code
Analysis weight: WTG000 Analysis stratum: BB18ANALSTR PSU: BB18ANALPSU	IBM SPSS complex samples <sup>1</sup>	CSPLAN ANALYSIS /PLAN FILE='myfile.csaplan' /PLANVARS ANALYSISWEIGHT=WTG000 /DESIGN STRATA= BB18ANALSTR CLUSTER BB18ANALPSU /ESTIMATOR TYPE=WR
	R survey package <sup>2</sup>	mydesign<-svydesign(id=~ BB18ANALPSU, strata=~ BB18ANALSTR, weights=~WTG000, data=mydata)
	SAS survey analysis procedures	VARMETHOD = JACKKNIFE WEIGHT WTG000; STRATA BB18ANALSTR; CLUSTER BB18ANALPSU;
	Stata	svyset bb18analpsu [pweight = wtg000], strata (bb18analstr) vce(linearized)
	SUDAAN	DESIGN = WR WEIGHT WTG000; NEST BB18ANALSTR BB18ANALPSU;

<sup>1</sup> The name "myfile" should be replaced with the desired file name.

<sup>2</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

NOTE: Taylor series variance estimation with replacement does not account for the finite population corrections at the institution level of sampling. Table displays example code using analysis weight WTG000. This code may be used with any analysis weight WTH000–WTK000. The survey data analysis software specifications are given for the following versions of the software packages: IBM SPSS complex samples 20, SAS 9.3 and newer, Stata 12 and newer, and SUDAAN 11.0.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table 61-C. Example of relevant variables and code related to the use of analysis weight WTG000 and Taylor series variance estimation without replacement, by statistical software: 2018**

Variables	Software	Code
Analysis weight: WTG000 Strata: BB18FANALSTR PSU: BB18FANALPSU SSU: BB18FANALSSU Count of PSU: BB18PSUCOUNT	R survey package <sup>1,2</sup>	mydesign <- svydesign(id=~ BB18FANALPSU, strata=~ BB18FANALSTR, weights=~WTG000, fpc=~ BB18PSUCOUNT, data=mydata)
	Stata	svyset bb18fanalpsu [pweight=wtg000], strata(bb18fanalstr) fpc(bb18psucount)    bb18fanalssu, vce(linearized)
	SUDAAN	DESIGN = WOR WEIGHT WTG000; NEST BB18FANALSTR BB18FANALPSU BB18FANALSSU; TOTCNT BB18PSUCOUNT _minus1__zero_;

<sup>1</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

<sup>2</sup> For the without-replacement design, the R survey package does not account for the second stage of sampling.

NOTE: Taylor series variance estimation without replacement accounts for the finite population corrections at the institution level of sampling. Table displays example code using analysis weight WTG000. This code may be used with any analysis weight WTH000–WTK000. The survey data analysis software specifications are given for the following versions of the software packages: Stata 12 and newer and SUDAAN 11.0.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).



### 6.4.4 Variance Approximation

As discussed above, Taylor series linearization and replication techniques can be used to compute more precise standard errors for data from complex surveys. If statistical analyses are conducted using software packages that assume the data were collected using simple random sampling (i.e., adjustments are not made using the Taylor series or bootstrap replication methods), the standard errors will be calculated under this assumption and will be incorrect. They can be adjusted using the average square root of the design effect, although this method is less precise than Taylor series or replication techniques. Those who must perform an analysis of B&B:08/18 data without using one of the software packages for analysis of complex survey data should begin by computing weighted point estimates, regression coefficients, etc. using the appropriate analysis weight and then use the design effect tables in appendix L to make approximate adjustments to the standard errors of survey statistics computed with the standard software packages that assume simple random sampling designs.

The survey design effect, DEFF, is defined as

$$\text{DEFF}(\hat{\theta}) = \frac{\text{Var}_{\text{design}}(\hat{\theta})}{\text{Var}_{\text{srs}}(\hat{\theta})},$$

where  $\text{Var}_{\text{design}}(\hat{\theta})$  is the sampling variance for an estimate,  $\hat{\theta}$ , given the complex sample design, and  $\text{Var}_{\text{srs}}(\hat{\theta})$  is the sampling variance for the estimate,  $\hat{\theta}$ , given a simple random sample.

The square root of the design effect, DEFT, is another measure that analysts can express as the ratio of the standard error for the complex sampling design to the standard error, or

$$\text{DEFT}(\hat{\theta}) = \frac{\text{SE}_{\text{design}}(\hat{\theta})}{\text{SE}_{\text{srs}}(\hat{\theta})}.$$

Most complex multistage sampling designs like NPSAS:08 and B&B:08/18 result in design effects greater than 1.0 (the design-based variance is larger than the simple random sample variance). Appendix L provides design effect estimates for important survey domains to summarize the effects of stratification, multistage sampling, unequal probabilities of selection, and the weight adjustments. These design effects were estimated using SUDAAN and the bootstrap variance estimation procedure described above.

Large design effects imply large standard errors and relatively poor precision. Small design effects imply small standard errors and good precision. In general terms, a design effect less than 2.0 is low, from 2.0 to 3.0 is moderate, and greater than 3.0 is high. Moderate and high design effects often occur in complex surveys such as B&B:08/18. Unequal weighting causes large design effects and is often due to nonresponse and poststratification adjustments; however, in B&B:08/18, the unequal weighting is also due to the sample design and different sampling rates among institution strata, as well as to the different sampling rates among student strata.

As the first step in the approximation of a standard error without Taylor series or bootstrap estimation procedures, analysts should normalize the desired analysis weight for packages that use the weighted population size ( $N$ ) in the calculation of standard errors (e.g., SPSS). The normalized weight will sum to the sample size ( $n$ ) and is calculated as

$$\text{Normalized weight} = \text{weight} \times n/N,$$

where  $n$  is the sample size (i.e., the number of cases with a valid main sampling weight) and  $N$  is the sum of weights.

As the second step in the approximation, the standard errors produced by the statistical software, the test statistics, or the sample weight used in analysis can be adjusted to reflect the actual complex design of the study. To adjust the standard error of an estimate, the analyst should multiply the standard error produced by the statistical software by the DEFT. The DEFF and DEFT can be calculated for specific estimates, or they can be the median DEFF and DEFT across several variables or the median DEFF and DEFT for a specific subgroup in the population. Adjusted standard errors can then be used in hypothesis testing, for example, when calculating  $t$  or  $F$  statistics.

A second option is to adjust the  $t$  or  $F$  statistics produced by statistical software packages using unadjusted standard errors (i.e., standard errors produced assuming simple random sampling). To do this, the analyst should first conduct the desired analysis weighted by the normalized weight, then divide a  $t$  statistic by the DEFT, or an  $F$  statistic by the DEFF. A third alternative is to create a new analytic weight variable in the data file by dividing the normalized analytic weight by the DEFF and using the adjusted weight in analyses.

## References

- Box, G.E.P., and Cox, D.R. (1964). An Analysis of Transformations. *Journal of the Royal Statistics Society, Series B*, 26: 211–234.
- Breiman, L., Friedman, J.H., Olshen, R.A., and Stone, C.J. (1984). *Classification and Regression Trees*. Belmont, CA: Wadsworth International Group.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cominole, M., Riccobono, J., Siegel, P., and Caves, L. (2010). *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (NCES 2011-188). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Cominole, M., Shepherd, B., and Siegel, P. (2015). *2008/12 Baccalaureate and Beyond Longitudinal Study (B&B:08/12) Data File Documentation* (NCES 2015-141). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Cox, B.G. (1980, August). The Weighted Sequential Hot Deck Imputation Procedure. In *Proceedings of the Section on Survey Research Methods, American Statistical Association* (pp. 721–726). Alexandria, VA: American Statistical Association.
- Flyer, P.A. (1987). Finite Population Correction for Replication Estimates of Variance. In *Proceedings of the Section on Survey Research Methods* (pp. 732–736). Alexandria, VA: American Statistical Association.
- Folsom, R.E., and Singh, A.C. (2000). The Generalized Exponential Model for Sampling Weight Calibration for Extreme Values, Nonresponse, and Poststratification. In *Proceedings of the Section on Survey Research Methods of the American Statistical Association* (pp. 598–603). Alexandria, VA: American Statistical Association.
- Hanley, J.A., and McNeil, B.J. (1982). The Meaning and Use of the Area Under a Receiver Operating Characteristic Curve. *Diagnostic Radiology*, 143: 29-36.

- Iannacchione, V. (1982, February). Weighted Sequential Hot Deck Imputation Macros. Paper presented at the Seventh Annual SAS Users Group International Conference, San Francisco.
- Iannacchione, V. (2003). Sequential Weight Adjustments for Location and Cooperation Propensity for the 1995 National Survey of Family Growth. *Journal of Official Statistics*, 16: 31–43.
- Judkins, D.R. (1997, November). Imputing for Swiss Cheese Patterns of Missing Data. In *Proceedings of the Statistics Canada Symposium 97, New Directions in Surveys and Censuses* (pp. 143–148).
- Kass, G.V. (1980). An Exploratory Technique for Investigating Large Quantities of Categorical Data. *Applied Statistics*, 29(2): 119–127.
- Kott, P.S. (1988). Model-Based Finite Population Correction for the Horvitz-Thompson Estimator. *Biometrika*, 75(4): 797–799
- Kreuter, F., Presser, S., and Tourangeau, R. (2008). Social Desirability Bias in CATI, IVR, and Web Surveys: The Effects of Mode and Question Sensitivity. *Public Opinion Quarterly*, 72(5): 847-865.
- Krotki, K., Black, S., and Creel, D. (2005). Mass Imputation. In *Proceedings of the Section on Survey Research Methods, American Statistical Association* [CD-ROM]. Alexandria, VA: American Statistical Association.
- Lumley, T. (2014). Survey: Analysis of Complex Survey Samples. R package version 3.30.
- Marker, D.A., Judkins, D.R., and Winglee, M. (2002). Large-Scale Imputation for Complex Surveys. In R. M. Groves, D. A. Dillman, J. L. Eltinge, and R. J. A. Little (Eds.), *Survey Nonresponse* (pp. 329–341). New York: John Wiley & Sons, Inc.
- RTI International. (2012). SUDAAN User's Manual, Release 11.0. Research Triangle Park, NC: RTI International.
- Satterthwaite, F.E. (1946). An Approximate Distribution of Estimates of Variance Components. *Biometrics Bulletin*, 2(6): 110–114.
- Seastrom, M.M. (2014). *2012 Revision of NCES Statistical Standards: Final*. (NCES 2014-097). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

- Staklis, S., and Bentz, A. (2016). *Employment and Enrollment Status of Baccalaureate Degree Recipients 1 Year After Graduation: 1994, 2001, and 2009* (NCES 2017-407). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Staklis, S., and Skomsvold, P. (2014). *New College Graduates at Work Employment Among 1992–93, 1999–2000, and 2007–08 Bachelor’s Degree Recipients 1 Year After Graduation* (NCES 2014-003). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Tourangeau, R., and Yan, T. (2007). Sensitive Questions in Surveys. *Psychological Bulletin*, 133(5): 859-883.
- Tukey, J.W. (1977). *Exploratory Data Analysis*. Reading, MA: Addison-Wesley.
- Wine, J., Janson, N., Siegel, P., and Bennett, C. (2013). *2008/09 Baccalaureate and Beyond Longitudinal Study (B&B:08/09) Data File Documentation* (NCES 2014-041). U.S. Department of Education, Institute of Education Sciences. Washington, DC: National Center for Education Statistics.
- Woo, J., and Matthews, M. (2012). *Trends in Debt for Bachelor’s Degree Recipients a Year After Graduation: 1994, 2001, and 2009* (NCES 2013-156). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Woo, J., Green, C., and Matthews, M. (2012). *Profile of 2007–08 First-Time Bachelor’s Degree Recipients in 2009* (NCES 2013-150). U.S. Department of Education. Washington, DC: National Center for Education Statistics.
- Woodruff, R.S. (1971). A Simple Method for Approximating the Variance of a Complicated Estimate. *Journal of the American Statistical Association*, 66: 411–414.

## **Appendix A. Quick Start User Guide for B&B:08/18 Data**

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In addition to a summary of the 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) purpose and design, this appendix to the *2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Data File Documentation* (hereafter, DFD; Cominole, Smith, and Cooney 2021) serves as a quick-reference guide to accessing and understanding the B&B:08/18 data products, conducting weighted analyses of B&B:08/18 data, and identifying differences in B&B:08/18 from prior B&B data collections. Readers interested in more comprehensive resources are directed to those locations throughout the appendix. For questions that cannot be answered by these resources and for other assistance, users may contact the NCES Help Desk at [NCES.info@ed.gov](mailto:NCES.info@ed.gov).

## Section A.1. B&B:08/18 Purpose and Design

The B&B study is designed to provide policymakers and researchers with accurate information about postsecondary education and its impact on later life experiences. Primary outcomes measured in B&B include postbaccalaureate education, student loan debt and repayment, and employment experiences with a special focus on those employed as kindergarten through 12th-grade (K–12) teachers. Other important topics include the time it took for the respondent to earn a bachelor’s degree from initial enrollment, family formation, voting and other civic activities, and financial well-being.

The B&B study has followed four cohorts of baccalaureate degree recipients. Each cohort is identified through the B&B base-year collection, NPSAS, and follow-up rounds are conducted approximately 1, 4, and 10 years after graduation. B&B:08/18 is the 10-year follow-up of the third B&B cohort, B&B:08. This study of the third cohort consists of students who completed a bachelor’s degree between July 1, 2007, and June 30, 2008 from a Title IV-eligible institution. See Chapter 2 of the DFD for specifics regarding population details and the B&B:08/18 sampling design.

The data collection for B&B:08/18 consisted of a survey of sample members and matches of sample member information to administrative sources such as the National Student Loan Data System (NSLDS) and the Veterans Benefits Administration (VBA). See section A.2.2.1 for more information regarding the availability of administrative data. Through the combining of survey data with administrative data, users have access to information about many characteristics, behaviors, and outcomes related to postbaccalaureate enrollment, debt and repayment, employment, and more. As an example, Table A-1 displays an array of these measures with population estimates and standard errors.

**Table A-1. Population estimates and standard errors on key variables for 2007–08 bachelor's degree recipients in 2018**

Variable	Population estimate	Standard error
<b>Postbaccalaureate enrollment</b>		
Enrolled in degree program since bachelor's degree completion (percent)	54.8	0.59
Among those with additional enrollment, enrolled in undergraduate degree program since bachelor's degree completion (percent)	23.4	0.66
Among those with additional enrollment, enrolled in graduate degree program since bachelor's degree completion (percent)	86.8	0.55
Among those with additional enrollment, enrolled in online degree program since bachelor's degree completion (percent)	39.2	0.74
Enrolled in nondegree coursework since bachelor's degree completion (percent)	21.6	0.55
<b>Debt and repayment</b>		
Among federal borrowers, have no outstanding balance (percent)	46.3	0.72
Among federal borrowers, cumulative amount owed (average) <sup>1</sup>	\$37,439	\$929
Among federal borrowers, amount owed as percent of amount borrowed (average) <sup>1</sup>	59.5	0.99
Among federal borrowers in repayment, enrolled in income-driven repayment plan (percent) <sup>2</sup>	49.9	1.11
Among all borrowers, in repayment (percent)	54.5	0.78
Among all borrowers, defaulted on any loan (percent)	16.2	0.48
Among employed borrowers in repayment, monthly payment as percent of monthly income (average)	9.5	0.30
<b>Employment</b>		
Currently employed (percent)	87.6	0.43
Had active professional certification or state/industry license (percent)	39.6	0.59
Negotiated salary or benefits since bachelor's degree completion (percent)	47.8	0.56
Number of years working in current career (average)	7.9	0.07
Number of employers since bachelor's degree completion (average)	3.1	0.02
<b>K-12 teaching<sup>3</sup></b>		
Currently working as K–12th grade regular teacher (percent)	7.1	0.29
Worked as K–12th grade teacher since bachelor's degree completion (percent)	20.9	0.42
<b>Satisfaction with bachelor's degree institution and major</b>		
Satisfied with bachelor's degree institution choice (percent)	91.6	0.32
Satisfied with major choice (percent)	78.9	0.52
Undergraduate education was worth financial cost (percent)	69.5	0.54
<b>Civic participation</b>		
Registered to vote (percent) <sup>4</sup>	94.9	0.27
Voted in 2016 presidential election (percent) <sup>4</sup>	83.2	0.47
Volunteered in past 12 months (percent)	40.5	0.65
<b>Military Service</b>		
Veteran (percent)	4.3	0.25
Active Duty (percent)	0.5	0.09
Reserve or National Guard (percent)	1.3	0.15

See notes at end of table.

**Table A-1. Population estimates and standard errors on key variables for 2007–08 bachelor's degree recipients in 2018—Continued**

Variable	Population estimate	Standard error
<b>Marital status and dependents</b>		
Married (percent)	62.2	0.71
Any dependents	50.1	0.66
Dependent children <sup>5</sup> (percent)	48.1	0.66
Other dependents (percent)	3.4	0.23

1 Includes respondents who had paid off their federal student loans as of 10 years after bachelor's degree completion and owed \$0.

2 Income-driven repayment plans set the respondent's monthly student loan payment at an amount that is intended to be affordable based on the respondent's income and family size.

3 A regular classroom teacher is a regular, full- or part-time, elementary or secondary school teacher in any grade level, subject, or specialty from kindergarten to 12th grade. This does not include itinerant teachers, support teachers, teacher's aides, substitute teachers, student teachers, or other teaching positions.

4 Percentage is calculated out of U.S. citizens only.

5 Students are considered to have a dependent child if they have a child for whom they are the caretaker or have financial responsibility. A spouse is not considered a dependent.

NOTE: Estimates pertain to individuals who completed the requirements for a bachelor's degree in 2007–08 and were awarded their degree by a Title IV eligible postsecondary institution in the 50 states, the District of Columbia, or Puerto Rico no later than June 30, 2009. This table includes all 2007–08 bachelor's degree recipients, including the 7 percent of respondents for whom the 2007–08 bachelor's degree was not their first bachelor's degree.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Section A.2. Available Data Products

Access to the B&B:08/18 data is possible through two mechanisms: DataLab and restricted-use files. The first, DataLab, is a web-based analysis tool for NCES and other federal data. The second, the restricted-use files, can be obtained from the NCES restricted data office and include analysis (derived) variables along with source data from the B&B:08/18 survey, previous surveys of the B&B:08 cohort, and administrative data sources.<sup>1</sup> The following sections include information about how to access these resources and their contents.

More guidance on using B&B:08/18 and other NCES data, both through DataLab and restricted-use files, can be found at the Distance Learning Dataset Training site at <https://nces.ed.gov/training/datauser>. This webpage offers a collection of short modules with descriptions of the NCES studies and important information about the data. Within the section pertaining to postsecondary education sample surveys, there are modules covering data sources, sample designs, weight components and construction, standard error calculations, and handling of missing data. Additionally, important analysis considerations related to derived and source data files, data documentation, study changes over time, generalization, and trend analyses are discussed.

### A.2.1 DataLab: Web-Based Analysis Tool

Users may access B&B:08/18 analysis variables and other NCES data through DataLab at <https://nces.ed.gov/datalab>. This web-based platform enables analysts to generate estimates from unit-record or micro-level NCES datasets without direct access to the datafiles and without use of statistical software. Based on the variables selected for analysis, a weight is suggested (with the ability to select an alternate) and subsequently applied to produce population estimates. It is not possible to create an unweighted analysis in DataLab and each specified weight will always be applied correctly to produce each weighted estimate. DataLab also calculates standard errors for each estimate that account for the complex sampling process used throughout the data collection, and unreliable estimates due to large variance or small sample size are automatically flagged or suppressed according to NCES Statistical Standards

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<sup>1</sup> Every effort was made to protect sample members' identities, including removal of all direct personally identifiable information, data perturbation, and formal disclosure risk analysis for every data file.

(Seastrom 2014). To assist in analyses and weight selection, DataLab contains documentation for each variable and weight, including summary statistics, value labels, and descriptive notes.

Within DataLab, PowerStats allows for a wide range of analyses, including trend analyses, percentile identification, linear and logistic regression, and correlation matrixes, and analyses may be conducted for specific subpopulations. After calculating estimates and standard errors, users can perform t-tests of differences of independent estimates. Using the account created prior to conducting analyses, users can save their results and share them.

DataLab also offers a Tables Library of results from NCES publications and user-requested tables. This library can be filtered to locate tables related to a particular study such as B&B. Users can download programming files for these tables to reproduce and customize analyses.

Additional help with DataLab, including video and written tutorials, is available at the DataLab Learning Center:

<https://nces.ed.gov/Datalab/learningcenter/learn.aspx>.

## A.2.2 Restricted-Use Files

While DataLab only allows access to analysis variable estimates, unit-level records for those variables, along with unit-level survey responses and administrative records are available in restricted-use files. Users must obtain authorization for access to these files by contacting the Institute of Education Sciences Data Security Office. To minimize disclosure risk, applicants must meet several requirements. For example, all data users must read the restricted-use data procedures manual and complete an online training, and the applicant's organization must submit a nondisclosure affidavit and a security plan. More information on eligibility and how to apply for a restricted-use data license is available at <https://nces.ed.gov/pubsearch/licenses.asp>.

### A.2.2.1 Available Data Sources

The restricted-use files include all data available for the B&B:08 cohort. A complete list of files is included in section 5.1 of the DFD, and Table A-2 identifies the data sources available for the B&B:08 cohort across all rounds of data collection. The table also indicates whether the data were new, refreshed to include updated data, or carried forward from the prior round.

**Table A-2. Availability of data sources for the B&B:08 cohort, by data collection round: 2008–2018**

Data source	Data collection round			
	NPSAS:08	B&B:08/09	B&B:08/12	B&B:08/18
Sample member surveys	N	N	N	N
Student (institution) records	N	CO	CO	CO
Integrated Postsecondary Education Data System (IPEDS)	N	CO	R	CO
Central Processing System (CPS)	N	R	R	R
National Student Loan Data System (NSLDS)	N	R	R	R
National Student Clearinghouse (NSC)	†	N	CO	CO
Veterans Benefits Administration (VBA)	†	†	†	N
Student transcripts	†	N	CO	CO
College catalogs	†	N	CO	CO
ACT/SAT	N	CO	CO	CO

† Not applicable.

NOTE: N = new data source. CO = data carried over from prior round. R = data carried over from previous round and refreshed.

SOURCE: 2007–08 National Postsecondary Student Aid Study (NPSAS:08); 2008/09 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/09); 2008/12 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/12); and 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

### A.2.2.2 Analysis Variable File

The primary analysis file (BB18DERIVED\_DATAFILE) and NCES' online DataLab tool not only contain analytic variables created for B&B:08/18 (designated with the prefix “B3”), but they also contain analysis variables constructed for each prior round of data collection for this cohort (i.e., NPSAS:08, B&B:08/09, PETS:09, and B&B:08/12).

Analysts derived the analytic variables by examining data available from the various data sources, prioritizing the data sources on an item-by-item basis, and reconciling discrepancies within and between sources. In some cases, staff created derived variables by recoding values or combining items. In other cases, they assigned the value from the available source with the highest priority. Further detail on variable derivation is available in PowerStats on the “Get more info” tab for each variable and in the codebooks provided with the restricted-use files. A complete list of analysis variables is provided in appendix J of the DFD.

Most, but not all, derived variables have undergone imputation to address item-level missingness (e.g., missing data that occurs when respondents to a survey round declined to provide a response). All imputed variables have a corresponding flag variable that indicates whether the value was reported or imputed. The flags are located on a separate restricted-use data file (BB18FLAG\_DATAFILE) and are denoted with a suffix of “\_F.” For more information on the imputation process, see section 5.4 of the DFD. When an item was not imputed, the missing data could potentially affect the representativeness of the variable's weighted estimate (depending on the amount of missingness; small amounts of missingness would not appreciably affect the estimate). Missing data codes (Table A-3) differentiate reasons for missing data.

A second type of missingness occurs due to unit nonresponse, that is, when sample members did not respond to the data collection round in which that variable was constructed. In these cases, the representativeness of the variable's weighted value is not affected because the analysis weights correct for unit nonresponse. To distinguish missing data for nonresponding sample members (i.e., unit-level missing) from item-level data that were not imputed, a value of "-8" is used. This missing data code, "-8," is new for B&B:08 cohort data and, specifically, the B&B:08/18 follow-up study. As such, missing data from earlier rounds that were coded differently (e.g., using "-9") may have been updated to "-8" if the data were missing due to unit nonresponse in the earlier round.

Table A-3 provides descriptions for the missing data codes presented on the analysis file. As shown in the table, the definitions of missing data codes are largely consistent across variables; exceptions are noted. Users should refer to the codebooks provided with the restricted-use files for missing data code documentation, as well as for more detail on each variable's derivation.<sup>2</sup>

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<sup>2</sup> To ensure missing data codes are not inadvertently analyzed as valid values, formatting programs provided on the restricted-use files convert missing data codes to the statistical software's system value for missing. During this conversion, value labels may not be preserved. Instruction files are included on the restricted-use files to aid in the use of these programs.



**Table A-3. B&B:08/18 analysis variable missing data codes and descriptions: 2018**

Missing data code	Item source	Description(s)	Exceptions
-1	IPEDS	Not classified	†
-1	Any survey	Respondent selected “don’t know” as a response	B3MARRDATE <sup>1</sup>
-2	IPEDS	Item does not apply	†
-3 <sup>2</sup>	Any	Item does not apply, i.e., the item was “skipped” or a “legitimate skip”	B3BADEPCHILD <sup>3</sup>
-6	Any	Value missing because the assigned value was not within the valid range for the item, i.e., “out of bounds”	†
-7 <sup>4</sup>	Any survey	Value missing because the respondent completed the abbreviated survey, in which this item was not administered	†
-8	Any	Variable not created for the nonrespondent (unit-level nonresponse)	B3BADEPCHILD <sup>3</sup>
-9	Any	Missing (item-level missingness)	†
-14	Transcripts	Multiple values possible	†
99999	Any	Foreign country (zip code items)	†

† Not applicable.

<sup>1</sup> B3MARRDATE uses -1 to identify widowed respondents.

<sup>2</sup> Labels may differ by variable for this value to provide more information about the respondents to whom the variable does not apply. For example, for the variable B2CURENRL, “Currently enrolled in 2012,” a respondent may have a value of -3, “No post-bachelor’s enrollment.”

<sup>3</sup> Because the item B3BADEPCHILD has valid negative values, the value “-3333” is used to denote “Item does not apply, i.e., the item was ‘skipped’.” and “-8888” is used to denote “Variable not created for the respondent (unit-level nonresponse).”

<sup>4</sup> This value only applies to the variable I1IPEDS, “First postsecondary institution IPEDS ID.” Most variables that use abbreviated survey items were imputed and thus do not need this missing data code.

NOTE: Missing data code descriptions vary across sources and variables and will not apply to all items for a given source. Users should refer to the codebook for each data file for appropriate value labels and descriptions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Section A.3. Weighted Estimates

The use of weights is necessary to produce estimates that are representative of the target population of 2007–08 baccalaureate recipients. See section 6.1 of the DFD for detailed information regarding the construction of the analysis weights for B&B:08/18. When testing hypotheses (e.g., conducting  $t$  tests, regression analyses, etc.) using B&B:08/18 data, analysts should properly estimate variances using methods such as bootstrap replication and Taylor series linearization. Bootstrap replication is used in the publicly available tools in DataLab, and both methods are possible using the restricted-use files. For discussion on the purpose of survey weights and when to make exceptions, mostly in the context of multivariate analysis, see Bollen et al. (2016) and Solon, Haider, and Wooldridge (2015).

### A.3.1 Analysis Weights

The first step in constructing weighted estimates is determining which set of weights is appropriate for an analysis. As of the B&B:08/12 release, the B&B:08 cohort had six analysis weights available (WTA000–WTF000), and five more were developed to analyze the B&B:08/18 data (WTG000–WTK000). Each B&B:08/18 weight allows for the creation of population estimates from a specific subsample of the B&B:08 cohort based on the group’s response pattern to B&B:08/18 and prior collections.

Table A-4 lists the analysis weights available for the B&B:08 cohort. The tables include each weight’s respondent description, sample size, and response pattern. Generally, though there are exceptions outside the scope of this appendix, a cross-sectional weight should be applied when analyzing participant data within one data collection (e.g., WTG000 for cross-tabulations of employment and enrollment 10 years after bachelor’s degree completion), and a longitudinal weight should be applied when analyzing respondent data across multiple years (e.g., WTH000 for trend analyses of employment status in 2008, 2012, and 2018).

**Table A-4. Respondent description, sample size, and response pattern for analysis weights for the B&B:08 cohort: 2018**

Analysis weight	Respondent description	Sample size	Response pattern				
			NPSAS:08 study member	B&B:08/09	PETS:09 (transcript)	B&B:08/12	B&B:08/18
WTA000	Students who received a bachelor's degree in the 2007–08 academic year and responded to the 2009 follow-up survey	15,050	~	Yes	~	~	†
WTB000	Students who received a bachelor's degree in the 2007–08 academic year and for whom an undergraduate transcript was collected. Use this weight if you select only transcript variables	16,070	~	~	Yes	~	†
WTC000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the 2009 follow-up interview, and for whom an undergraduate transcript was collected	14,010	~	Yes	Yes	~	†
WTD000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year interview in 2007–08, and responded to the 2012 follow-up survey	14,560	Yes	~	~	Yes	†
WTE000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2009 and 2012 follow-up surveys	13,490	Yes	Yes	~	Yes	†
WTF000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year survey in 2007–08, and responded to the 2009 and 2012 follow-up surveys, and for whom an undergraduate transcript was collected	12,570	Yes	Yes	Yes	Yes	†
WTG000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year interview in 2007–08, and responded to the 2018 follow-up survey	14,670	Yes	~	~	~	Yes

See notes at end of table.

**Table A-4. Respondent description, sample size, and response pattern for analysis weights for the B&B:08 cohort: 2018—Continued**

Analysis weight	Respondent description	Sample size	Response pattern				
			NPSAS:08 study member	B&B:08/09	PETS:09 (transcript)	B&B:08/12	B&B:08/18
WTH000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year interview in 2007–08, and responded to the 2012 and 2018 follow-up interviews	13,270	Yes	~	~	Yes	Yes
WTI000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year interview in 2007–08 and the 2018 follow-up interview, and for whom an undergraduate transcript was collected	13,670	Yes	~	Yes	~	Yes
WTJ000	Students who received a bachelor's degree in the 2007–08 academic year, responded to the base-year interview in 2007–08, responded to the 2012 and 2018 follow-up interviews, and for whom an undergraduate transcript was collected	12,380	Yes	~	Yes	Yes	Yes
WTK000	Students who received a bachelor's degree in the 2007–08 academic year, responded to all interviews (2007–08, 2009, 2012, 2018), and for whom an undergraduate transcript was collected	11,550	Yes	Yes	Yes	Yes	Yes

~Response to this round does not factor into inclusion for the weight.

† Not applicable

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

### A.3.2 Variance Estimation

Every estimate calculated (e.g., mean, percentage, regression coefficient) from a probability-based sample survey has an associated variance, and this variance may differ from what would be expected if the sample were a simple random sample. To estimate variances of B&B:08/18 statistics, researchers can use either the bootstrap replication procedure or the Taylor series linearization procedure. DataLab automatically produces these variance estimates using the bootstrap replication procedure and thus is a valuable resource for benchmarking work conducted using statistical software.

Table A-5 summarizes the B&B:08/18 weight and variance estimation variables available and how they are used in selected software packages that allow for bootstrap variance estimation, Taylor series variance estimation with replacement, and Taylor series variance estimation without replacement. The software packages listed vary depending on the variance estimation procedure. The provided code is intended for use within respective program statements or procedures and cannot be used alone as shown in the table. The code may need to be revised to be appropriate for a user's specific data file and coding decisions, and for that reason, the provided code may require editing before it is implemented by some users.

**Table A-5-A. Example of relevant variables and code related to the use of analysis weight WTG000 and balanced repeated replicate variance estimation, by statistical software: 2018**

Variables	Software	Code
Analysis weight: WTG000 Replicate weights: WTG001–WTG200	R survey package <sup>1</sup>	mydesign <- svrepdesign(type="BRR", weights=~WTG000,repweights="WTG00[1-200]", combined.weights=FALSE data=mydata)
	SAS survey analysis procedures	VARMETHOD = BRR WEIGHT WTG000; REPWEIGHTS WTG001-WTG200;
	Stata	svyset [pweight=wtg000], brrweight(wtg001 – wtg200) vce(brr) mse
	SUDAAN	DESIGN = BRR WEIGHT WTG000; REPWGT WTG001 -WTG200/ df=199;
	WesVar	Method: BRR Full sample weight: WTG000 Replicates: WTG001-WTG200

<sup>1</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

NOTE: Table displays example code using analysis weight WTG000 and associated replicate weights WTG001–WTG200. This code may be used with any analysis weight WTH000–WTK000 and respective replicate weights. The survey data analysis software specifications are given for the following versions of the software packages: SAS 9.3 and newer, Stata 12 and newer, SUDAAN 11.0.1, and WesVar 4.3 and newer.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table A-5-B. Example of relevant variables and code related to the use of analysis weight WTG000 and Taylor series variance estimation with replacement, by statistical software: 2018**

Variables	Software	Code
Analysis weight: WTG000 Analysis stratum: BB18ANALSTR PSU: BB18ANALPSU	IBM SPSS complex samples <sup>1</sup>	CSPLAN ANALYSIS /PLAN FILE='myfile.csaplan' /PLANVARS ANALYSISWEIGHT=WTG000 /DESIGN STRATA= BB18ANALSTR CLUSTER BB18ANALPSU /ESTIMATOR TYPE=WR
	R survey package <sup>2</sup>	mydesign<-svydesign(id=~ BB18ANALPSU, strata=~ BB18ANALSTR, weights=~WTG000, data=mydata)
	SAS survey analysis procedures	VARMETHOD = JACKKNIFE WEIGHT WTG000; STRATA BB18ANALSTR; CLUSTER BB18ANALPSU;
	Stata	svyset bb18analpsu [pweight = wtg000], strata (bb18analstr) vce(linearized)
	SUDAAN	DESIGN = WR WEIGHT WTG000; NEST BB18ANALSTR BB18ANALPSU;

<sup>1</sup> The name "myfile" should be replaced with the desired file name.

<sup>2</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

NOTE: Taylor series variance estimation with replacement does not account for the finite population corrections at the institution level of sampling. Table displays example code using analysis weight WTG000. This code may be used with any analysis weight WTH000–WTK000. The survey data analysis software specifications are given for the following versions of the software packages: IBM SPSS complex samples 20, SAS 9.3 and newer, Stata 12 and newer, and SUDAAN 11.0.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table A-5-C. Example of relevant variables and code related to the use of analysis weight WTG000 and Taylor series variance estimation without replacement, by statistical software: 2018**

Variables	Software	Code
Analysis weight: WTG000 Strata: BB18FANALSTR PSU: BB18FANALPSU SSU: BB18FANALSSU Count of PSU: BB18PSUCOUNT	R survey package <sup>1,2</sup>	mydesign <- svydesign(id=~ BB18FANALPSU, strata=~ BB18FANALSTR, weights=~WTG000, fpc=~ BB18PSUCOUNT, data=mydata)
	Stata	svyset bb18fanalpsu [pweight=wtg000], strata(bb18fanalstr) fpc(bb18psucount)    bb18fanalssu, vce(linearized)
	SUDAAN	DESIGN = WOR WEIGHT WTG000; NEST BB18FANALSTR BB18FANALPSU BB18FANALSSU; TOTCNT BB18PSUCOUNT _minus1__zero_;

<sup>1</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

<sup>2</sup> For the without-replacement design, the R survey package does not account for the second stage of sampling.

NOTE: Taylor series variance estimation without replacement accounts for the finite population corrections at the institution level of sampling. Table displays example code using analysis weight WTG000. This code may be used with any analysis weight WTH000–WTK000. The survey data analysis software specifications are given for the following versions of the software packages: Stata 12 and newer and SUDAAN 11.0.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Section A.4. Differences from Prior B&B Studies

Analysts interested in comparing results across B&B cohorts or across data collection rounds for the B&B:08 cohort should be aware of several differences within and between data collections.

**Sample design between cohorts.** First, prior to NPSAS:04, institutions that only offered correspondence courses were not eligible for NPSAS. Beginning in 2004, NPSAS has included such institutions if they were eligible to distribute Title IV student aid. This change affects comparisons between the B&B:08 cohort and prior cohorts (B&B:93 and B&B:2000).

Second, as of NPSAS:2000, the survey was restricted to institutions participating in Title IV student aid programs. Based on NPSAS:96 data, only about 1 percent of sampled undergraduates were attending an institution that was not eligible to participate in Title IV aid programs. When students attending non-Title IV, eligible institutions were excluded from the NPSAS:96 sample, the percentage of undergraduates who received financial aid increased by less than 1 percent. This small change primarily affects comparisons of students enrolled in less-than-2-year and private for-profit institutions. When comparing estimates from B&B:93 with those of the B&B:2000 and B&B:08 cohorts, analysts may want to exclude cases that were sampled from an institution that was not eligible to participate in Title IV aid programs (T4ELIG) in B&B:93.

**Data differences for B&B:08/18.** Within the B&B:08 cohort, some B&B:08/18 derived variables differ from prior rounds in a few ways. First, in B&B:08/18, the concept of primary job was revised to look at current employment only, regardless of the duration of the job. However, when respondents had more than one current job, rather than selecting the job with the greatest number of hours worked per week, the job held for the longest duration was selected as the respondent's current job.

Second, only respondents who taught as *regular classroom teachers* at the kindergarten through 12th-grade level between the B&B:08/12 data collection and the B&B:08/18 data collection provided teaching experience details.

Additionally, some derived variables based on NSLDS data will differ from prior-round variables. NSLDS records are periodically updated which can change estimate values over time. Additionally, there are some debt and repayment variables for

which more comprehensive and accurate derivations have been identified since the prior-round data were constructed for the B&B:08 cohort. For instance, B&B:08/18 variables based on NSLDS data were derived without the filter that removed loans borrowed prior to July 1995. To account for scenarios where loans may be missing from the repayment table despite being in repayment or may be included in the repayment table despite existing arrangements to postpone payment, B&B:08/18 redefined a federal student loan to be in repayment if the loan had a remaining balance and was not in deferment or forbearance. B&B:08/18 also revised repayment status (B3PAYSTAT) to reflect the status of all a respondent's federal and private loans. Moreover, B&B:08/18 reclassified some repayment plan types based on similarities in repayment terms, amounts, and qualifications. Lastly, due to prioritization and use of alternate sources, prior-round editing, or prior-round imputations, B&B:08/18 private student loan borrowing measures, B3PRIVLN and B3PRIVCUM, may not align with prior round derived variables, B2PRIVLN and B2PRIVAMT.

**Imputed estimates.** Analysts should use care in comparing estimates based on imputed data with estimates based on unimputed data. Distributions of imputed and unimputed variables are not directly comparable because imputation may appreciably change the distribution of valid values for variables with a substantial proportion of missing data.

Care should similarly be exercised when comparing estimates for repeated or comparable variables over time (e.g., between B&B:08/12 and B&B:08/18 data) as discrepancies may be observed. This can occur for several reasons. For example, analysis variables were created for B&B:08/18 using sample member survey responses when they were available in lieu of previously imputed information. Data reported by respondents were assumed to be more accurate than the prior-round imputations and may now conflict. As an example, a B&B:08/12 respondent might have completed only a partial interview, leaving items in the section about teaching unanswered. Their missing data for that round would have been imputed and may have been imputed as a teacher (B2EVRTCH=1). If this same case responded in B&B:08/18 and reported that they had never been a teacher, the resulting derived teaching status variable created in B&B:08/18 (B3EVRTCH=0) would indicate that this case had never taught, conflicting with B2EVRTCH. Finally, it is possible that values that were missing and imputed in prior rounds may have again been missing after B&B:08/18 analysis variable construction and reimputed to consider all updated measures and related variables in the imputation models.



## References

- Bollen, K. A., Biemer, P. P., Karr, A. F., Tueller, S., and Berzofsky, M. E. (2016). Are Survey Weights Needed? A Review of Diagnostic Tests in Regression Analysis. *Annual Review of Statistics and Its Application* 3:375-392.
- Seastrom, M.M. (2014). *2012 Revision of NCES Statistical Standards: Final*. (NCES 2014-097). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Solon, G., Haider, S. J., and Wooldridge, J. M. (2015). What Are We Weighting For?. *Journal of Human Resources* 50(2):301-316.

## Appendix B. Acronyms and Abbreviations

<b>Acronym/Abbreviation</b>	<b>Name</b>
ACG	Academic Competitiveness Grant
B&B	Baccalaureate and Beyond Longitudinal Study
B&B:08	2008 Baccalaureate and Beyond Longitudinal Study cohort
B&B:08/09	2008/09 Baccalaureate and Beyond Longitudinal Study
B&B:08/12	2008/12 Baccalaureate and Beyond Longitudinal Study
B&B:08/18	2008/18 Baccalaureate and Beyond Longitudinal Study
B&B:16	2016 Baccalaureate and Beyond Longitudinal Study cohort
B&B:16/17	2016/17 Baccalaureate and Beyond Longitudinal Study
B&B:16/20	2016/20 Baccalaureate and Beyond Longitudinal Study
B&B:16/26	2016/26 Baccalaureate and Beyond Longitudinal Study
B&B:2000	2000 Baccalaureate and Beyond Longitudinal Study cohort
B&B:2000/01	2000/01 Baccalaureate and Beyond Longitudinal Study
B&B:93	1993 Baccalaureate and Beyond Longitudinal Study cohort
B&B:93/94	1993/94 Baccalaureate and Beyond Longitudinal Study
B&B:93/97	1993/97 Baccalaureate and Beyond Longitudinal Study
B&B:93/03	1993/03 Baccalaureate and Beyond Longitudinal Study
BRR	balanced repeated replicate
CATI	computer-assisted telephone interviewing
CATI-CMS	computer-assisted telephone interviewing case management system
CCD	Common Core of Data
CHAID	chi-square automatic interaction detection
CIP	Classification of Instructional Programs
CPS	Central Processing System
DEFF	survey design effect
DEFT	Square root of the design effect
EHA	event history analysis
FAFSA	Free Application for Federal Student Aid
FAQs	frequently asked questions
FPC	finite population correction
FSA	Office of Federal Student Aid
GPA	grade point average
IPEDS	Integrated Postsecondary Education Data System
IPEDS-IC	Integrated Postsecondary Education Data System Institutional Characteristics file
NCES	National Center for Education Statistics
NCOA	National Change of Address

<b>Acronym/Abbreviation</b>	<b>Name</b>
NPSAS	National Postsecondary Student Aid Study
NPSAS:08	2007–08 National Postsecondary Student Aid Study
NPSAS:12	2011–12 National Postsecondary Student Aid Study
NPSAS:16	2015–16 National Postsecondary Student Aid Study
NPSAS:2000	1999–2000 National Postsecondary Student Aid Study
NPSAS:93	1992–93 National Postsecondary Student Aid Study
NSC	National Student Clearinghouse
NSLDS	National Student Loan Data System
O*NET-SOC	Occupational Information Network-Standard Occupational Classification
PETS:09	2009 Postsecondary Education Transcript Study
PSS	Private School Universe Survey
PSU	primary sampling unit
ROC	Receiver Operating Characteristics
RRI	item response rate
RTI	Research Triangle Institute
SMART Grant	Science and Mathematics Access to Retain Talent Grant
SQL	Structured Query Language
SSL	Secure Sockets Layer
SSN	Social Security number
SSU	secondary sampling unit
STEM	science, technology, engineering, and mathematics
TOPS	intensive tracing
TOPS-1	first tier of intensive tracing
TOPS-2	second tier of intensive tracing
TRP	Technical Review Panel
USPS	United States Postal Service
UWEs	unequal weighting effects
VBA	Veterans Benefits Administration
WSDH	weighted sequential hot deck

## Appendix C: B&B:08/18 Field Test

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## Section C.1. Overview of the B&B:08/18 Field Test

The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18), conducted for the National Center for Education Statistics (NCES) in the U.S. Department of Education's Institute of Education Sciences, provides information on respondents' postbaccalaureate education and employment. B&B:08/18 is the third follow-up of a panel of bachelor's degree recipients identified in the 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

The respondent universe for the B&B:08/18 field test consisted of students who completed requirements for a bachelor's degree between July 1, 2006, and June 30, 2007, at any Title IV eligible postsecondary institution in the United States and Puerto Rico. The field-test sample included a total of 1,590 sample members. B&B:08/18 field-test surveys were conducted between July 17, 2017, and October 31, 2017.

B&B captures information on the pathways and experiences of its cohort members after they earned a bachelor's degree. Since graduating from college, the lives of B&B cohort members have changed in a multitude of ways (e.g., cohort members have purchased homes, repaid education-related debt, entered the workforce, and formed families). Documentation of their experiences and pathways, along with individual, institution, and employment characteristics, provides key insights into the cost and benefits of earning a bachelor's degree.

This appendix describes procedures and results of the B&B:08/18 field test. The field test was designed to implement and evaluate methodology, instruments, and systems proposed for use in the full-scale data collection. These procedures and systems were based on established protocols from previous cycles of B&B, NPSAS, and other NCES postsecondary education studies. Included as an appendix to the full-scale data file documentation, the following sections provide information that is unique to the field test. Specific field-test goals included evaluation of employment history data quality, the résumé collection process, and data collection incentives.

Section 2 details the sampling design for institutions and students in NPSAS:08 and outlines the process for identifying B&B-eligible sample members. Section 3 presents information on data collection procedures and results, including evaluations of data

quality. Section 3 also presents information on the résumé collection, conducted for the first time in the B&B:08/18 field test. Lastly, section 4 details recommendations for changes to the B&B:08/18 full-scale data collection based on the field test experience. Quality management procedures are discussed throughout the document as applicable.

Tables and figures throughout this report present relevant analyses from the field test. Unless otherwise indicated, a probability level of 0.05 was used for all tests of significance conducted for B&B:08/18 field-test evaluations. Unlike the full-scale sample, the field-test sample is not a random sample and is not weighted; therefore, statistically significant results are not representative of the 2006–07 bachelor’s degree recipient population. Due to rounding, row and column entries in tables may not sum to their respective totals and reported percentages may differ somewhat from those that would result from the rounded numbers. Rounding is used to ensure the confidentiality of respondents.

## Section C.2. Sampling Design

This section describes the institution and student respondent universes and samples for the NPSAS:08 field test and follow-up of the B&B:08 field-test cohort. The B&B:08/18 field-test sample design comprised five stages. The first two stages occurred within the NPSAS:08 field-test sample. First, a sample of NPSAS:08-eligible institutions was selected. Second, a sample of students was selected within institutions. In the third stage, all confirmed and potential baccalaureate recipients from the NPSAS:08 field test were selected for the B&B:08/09 field-test sample. In the fourth stage, all eligible sample members from the B&B:08/09 field test were selected for the B&B:08/12 field-test sample. For the third follow-up (the fifth stage of sampling), all eligible sample members from the B&B:08/12 field test were selected for the B&B:08/18 field-test sample.

### C.2.1 Institution Universe and Sample

In the first stage of the NPSAS:08 field-test sample design, a purposive sample of institutions was selected, with a sampling frame derived from the 2004–05 Integrated Postsecondary Education Data System (IPEDS) Institutional Characteristics, Completions, and Fall Enrollment files. To be eligible for the NPSAS:08 field test, institutions in the 2006–07 academic year must have met the following requirements:

- offered an educational program designed for persons who have completed secondary education;
- offered at least one academic, occupational, or vocational program of study lasting at least 3 months or 300 clock hours;
- offered courses that were open to more than the employees or members of the company or group (e.g., union) that administers the institution;
- been in the 50 states, the District of Columbia, or Puerto Rico;<sup>1</sup>
- not been a U.S. service academy institution; and

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<sup>1</sup> Institutions in Puerto Rico were eligible for NPSAS:08 and NPSAS:16 field tests but not for the NPSAS:12 field test.

- had a signed Title IV participation agreement with the U.S. Department of Education.<sup>2</sup>

Institutions providing only avocational, recreational, or remedial courses or only in-house courses for their own employees were excluded. U.S. service academies (the U.S. Air Force Academy, the U.S. Coast Guard Academy, the U.S. Military Academy, the U.S. Merchant Marine Academy, and the U.S. Naval Academy) were also excluded because of the academies' unique funding.

A purposive sample of institutions was selected for the field test so as not to burden institutions with both field-test and full-scale data collections. Institutions selected for the full-scale sample were excluded from the field-test sample. To the extent possible, the field-test sample of institutions was selected to approximate the same distribution by institution characteristics as used in the full-scale data collection. However, to ensure the sample included a sufficient number of baccalaureate recipients for the B&B:08 field-test cohort, the NPSAS:08 field-test sample included a higher percentage of 4-year institutions than the full-scale sample. Additionally, public 4-year, doctorate-granting institutions were excluded from the field-test sample since they were all selected for the full-scale sample with a probability of 1.0 (i.e., they were designated as certainty institutions). Table C-1 shows the number of institutions in the NPSAS:08 field-test sample, by control and level of NPSAS institution.

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<sup>2</sup> A Title IV eligible institution is an institution that has a written agreement (program participation agreement) with the U.S. Secretary of Education that allows the institution to participate in any of the Title IV federal student financial assistance programs other than the State Student Incentive Grant and the National Early Intervention Scholarship and Partnership programs.

**Table C-1. Number of sampled institutions in the NPSAS:08 field test, by control and level of NPSAS institution: 2007**

Control and level of NPSAS institution <sup>1</sup>	Sampled institutions
<b>Total</b>	<b>300</b>
Public	
Less-than-2-year	#
2-year	10
4-year, non-doctorate-granting	100
4-year, doctorate-granting <sup>2</sup>	†
Private nonprofit	
2-year-or-less	#
4-year, non-doctorate-granting	140
4-year, doctorate-granting	30
Private for-profit	
Less-than-2-year	10
2-year or more	10

† Not applicable.

# Rounds to zero.

<sup>1</sup> Control and level of institution were based on data from the sampling frame that was formed from the 2004–05 Integrated Postsecondary Education Data System (IPEDS).<sup>2</sup> All 4-year, doctorate-granting institutions were included in the full-scale sample with certainty and are not included in the field-test sample.

NOTE: Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) Field Test.

## C.2.2 Student Universe and Sample

The second stage of NPSAS:08 field-test sampling was a stratified systematic sample of individuals within the sampled institutions. Students eligible for inclusion in the NPSAS:08 field-test sample were enrolled in a NPSAS:08-eligible institution in any term or course of instruction between July 1, 2006, and April 30, 2007<sup>3</sup>, and who were

- enrolled in any of the following: (a) an academic program; (b) at least one course for credit that could be applied toward fulfilling the requirements for an academic degree; or (c) an occupational or vocational program that required at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award;
- not enrolled in high school; and
- not enrolled solely in a high school completion program.

There were seven student strata in the NPSAS:08 field-test sample:

<sup>3</sup> To not delay data collection, enrollment lists covered the period of July 1, 2006, through April 30, 2007. The date of April 30 was selected to include virtually all students enrolled prior to the summer term.



- potential baccalaureate recipients who were business majors;
- potential baccalaureate recipients in all other majors;
- other undergraduate students;
- master's degree students;
- doctoral-research/scholarship degree students;
- doctoral-professional practice degree students; and
- doctoral-other degree students.<sup>4</sup>

The information needed to identify students within these strata was provided by the sampled institutions. Given that institutions were asked to identify potential bachelor's degree recipients before degree completion, the sampling rates for potential baccalaureate recipients and other undergraduate students were adjusted to account for expected false positives. In this context, false positives are students sampled as bachelor's degree recipients who did not actually receive a bachelor's degree between July 1, 2006, and June 30, 2007. The false positive rate experienced in NPSAS:2000, the last round of NPSAS providing a base-year sample for a B&B cohort, was used to adjust sampling rates for the NPSAS:08 field test.<sup>5</sup> Table C-2 shows the distribution of the NPSAS:08 field-test student sample and the potential baccalaureate recipients by control and level of sampled institution.

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<sup>4</sup> At the time of sampling, doctoral-professional practice degrees were termed first-professional degrees and included some master's degrees in theology. Also, both doctoral-research/scholarship degrees and doctoral-other degrees were classified as doctor's degrees.

<sup>5</sup> In NPSAS:2000, 13 percent of students identified by the institutions as potential baccalaureate recipients were later determined to be other undergraduate or graduate students. The false negative rate, those identified at the time of sampling as other undergraduate or graduate students but were later determined to be baccalaureate recipients, was 3 percent. Given that sampling occurred earlier in NPSAS:08 than in NPSAS:2000, a false positive rate of 15 percent was assumed for sampling purposes, and the false negative rate was disregarded because it was expected to be minimal.

**Table C-2. Number and percentage of the NPSAS:08 field-test student sample considered potential baccalaureate recipients, by control and level of sampled institution: 2007**

Control and level of sampled institution	NPSAS:08 field-test student sample		Potential baccalaureate recipients	
	Number	Percent	Number	Percent
<b>Total</b>	<b>3,000</b>	<b>100.0</b>	<b>2,460</b>	<b>100.0</b>
Public				
Less-than-2-year	20	0.7	#	#
2-year	40	1.3	#	#
4-year, non-doctorate-granting	1,420	47.3	1,260	51.2
4-year, doctorate-granting <sup>†</sup>	†	†	†	†
Private nonprofit				
2-year-or-less	10	0.2	#	#
4-year, non-doctorate-granting	780	26.0	640	26.2
4-year, doctorate-granting	630	21.1	520	21.1
Private for-profit				
Less-than-2-year	60	1.9	#	#
2-year-or-more	40	1.4	30	1.4

† Not applicable.

# Rounds to zero.

<sup>†</sup> All 4-year, doctorate-granting institutions were included in the full-scale sample with certainty and are not included in the field-test sample.  
 NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) Field Test.

The third sampling stage was the development of the field-test sample for the first follow-up, B&B:08/09. The total field-test sample for the B&B:08/09 consisted of 1,820 individuals, selected from 1,220 NPSAS:08 survey respondents who indicated they were eligible for the B&B:08 cohort and 600 NPSAS:08 survey nonrespondents identified by their institutions as potentially B&B-eligible.

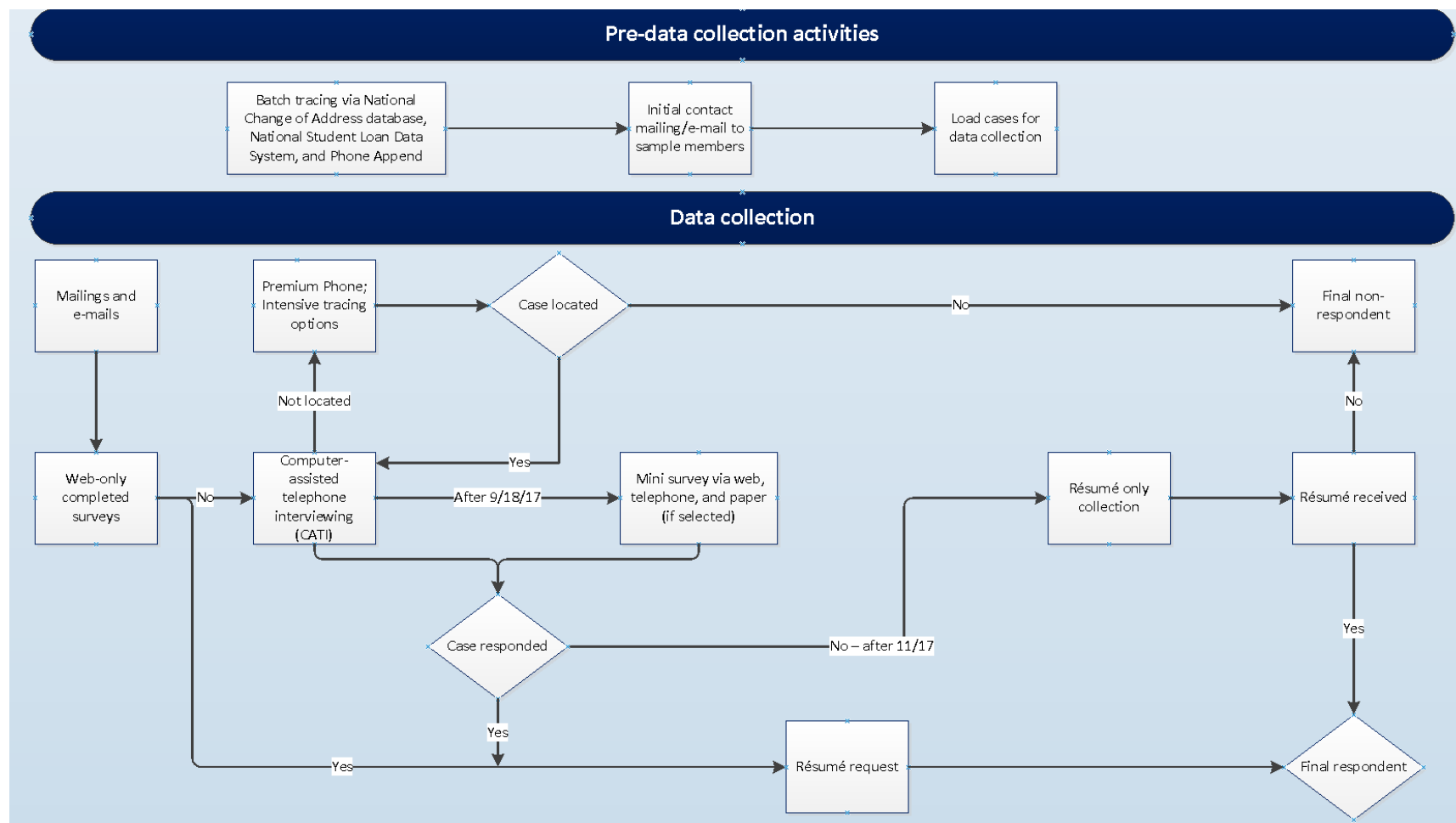
The fourth sampling stage was the development of the field-test sample for the second follow-up, B&B:08/12. The B&B:08/12 field-test sample consisted of 1,590 individuals, which included the 1,820 eligible B&B:08/09 field-test sample members; those deemed ineligible or deceased during the B&B:08/09 data collection were excluded. The fifth and final sampling stage was the development of the field-test sample for the final follow-up, the B&B:08/18 field-test survey. The total B&B:08/18 field-test sample consisted of 1,580 individuals, which included the 1,590 eligible B&B:08/12 field-test sample members; those who were deemed ineligible or deceased during the B&B:08/12 data collection were excluded.

## Section C.3. Survey Data Collection Activities, Outcomes, and Evaluation

This section describes the data collection procedures and results of the B&B:08/18 field test. It also presents data quality evaluations conducted to inform the B&B:08/18 full-scale data collection. Throughout this section, two groups of sample members are used for comparison purposes, based on prior-round survey response status. *Double respondents* are defined as sample members who responded to both prior-round follow-ups, B&B:08/09 and B&B:08/12 field tests. *Prior nonrespondents* are defined as sample members who did not respond to at least one of the two prior-round follow-up surveys, B&B:08/09 or B&B:08/12 field test surveys.

### C.3.1 Locating, Tracing, and Contacting Sample Members

The B&B:08/18 field test used a sequential approach to locating, tracing, and contacting sample members, which was designed to maximize the number of located cases while minimizing data collection expenses. Before the start of data collection, project staff searched databases to locate sample members. They also sent a postcard and e-mail requesting that sample members update their contact information. Throughout data collection, sample members were confirmed as located using e-mail contacts, letter and postcard mailings, and computer-assisted telephone interviewing (CATI). Sample members who were still not successfully located were sent to intensive tracing where tracers had access to consumer database searches (e.g., Experian or LexisNexis). Figure C-1 outlines the contacting, locating, and tracing activities used during B&B:08/18 field-test data collection.

**Figure C-1. B&B:08/18 Field-test data collection activities: 2017**

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Contact update request.** Sample members were contacted in June 2017, nearly a month before the start of data collection, to introduce the B&B:08/18 field test and invite them to update their contact information online. The mailing included a letter with detailed information about B&B:08/18 and instructions for updating information online. The e-mail included the equivalent information along with a direct link to the contact information page. Three-hundred sample members (19 percent) updated their contact information in response to the initial contact letter mailing and e-mail. Ninety-eight percent of sample members who updated contact information responded to the B&B:08/18 field-test survey.

**Data collection announcement.** At the start of data collection on July 17, 2017, sample members were sent a data collection announcement mailing and e-mail. The mailing included a study brochure and a letter that announced the start of data collection. The letter informed sample members of any incentive being offered for completing the survey, provided unique log-in information for the web survey, and included the collection's toll-free help-desk number and e-mail address. The e-mail included equivalent information, along with a link to the survey, which allowed sample members easy access to their survey. Additional reminders were sent to nonrespondents periodically throughout data collection, via e-mail, postcard and other mailings, and text message.

### ***C.3.1.1 Training and Monitoring of Telephone Interviewers***

**Training for data collection staff.** The data collection team for the B&B:08/18 field-test survey included five quality control supervisors; seven quality experts primarily responsible for monitoring interviews; twelve data collection interviewers; and seven intensive tracing staff. Training programs for these staff members were critical to maximizing response rates and collecting accurate and reliable data. The interviewers attended a 12-hour training during August 8–10, 2017, that included an overview of the study and a thorough review of the instrument. Supervisors and quality experts received training in the following areas:

- providing direct supervision during data collection;
- handling refusals;
- monitoring interviews and maintaining records of monitoring results;
- problem resolution;
- case review;
- specific project procedures and protocols;
- reviewing CATI reports; and

- monitoring data collection progress.

After training, all staff met certification requirements by administering a full-length interview to project staff, obtaining a security certification, and passing an oral evaluation of both the study's frequently asked questions and pronunciation of the data collection's key words. The seven intensive tracing staff members had an additional training on tracing procedures on August 21, 2017.

**Monitoring of data collection staff.** Quality experts regularly monitored interviewers to ensure that they administered instruments accurately and professionally. Quality experts monitored interviews and recorded observations on interviewer professionalism, question administration, and knowledge of the instrument. Quality experts and supervisors used recorded interviews during feedback sessions with each interviewer to point out areas for improvement. Segments from recorded interviews were also used during project trainings and quality meetings.

**Quality meetings.** Throughout the B&B:08/18 field test, interviewers and monitoring staff participated in biweekly quality meetings. Issues that were identified during monitoring were frequently incorporated into quality meetings to improve the quality of interviewers' work. Also during these meetings, project staff provided CATI-Case Management System updates, conducted brief interview administration technique trainings, and gave interviewers the opportunity to provide feedback and ask project-related questions. After each quality meeting, data collection staff prepared a detailed newsletter summarizing the quality discussion, and the newsletter was circulated to interviewers and supervisory staff for review.

**Debriefing.** At the end of data collection, interviewers completed a debriefing survey and participated in group discussions regarding the debriefing survey results. Topics covered during the debriefing survey and meetings included training, quality control meetings, monitoring, survey administration, the CATI-Case Management System, and techniques and tools for locating sample members. Results obtained from the debriefing survey and discussion were used to identify successes and highlight areas for improvement in future data collections.

### ***C.3.1.2 Locating and Tracing Results***

**Locating results.** A sample member was defined as located if at any point during data collection, contact information was confirmed to be accurate for the individual. For example, if an answering machine confirmed the sample member's name or a member of the sample member's household confirmed the contacting information, then the sample member was considered located. Similarly, when intensive tracing

efforts successfully confirmed contacting information for a sample member, then the case was considered located. As shown in Table C-3, approximately 1,370 (88 percent) of B&B:08/18 field-test sample members were located, and 960 of those (70 percent of those located) responded to the survey. Of the 1,560 total eligible sample members, 61 percent responded to the survey.

Double respondents had a located rate of 95 percent, compared with 77 percent of prior nonrespondents ( $p < .0001$ ). Overall, regardless of located status, 78 percent of all double respondents completed the B&B:08/18 survey, compared with only 35 percent of prior nonrespondents ( $p < .0001$ ). Table C-3 also shows located and response rates based on prior-response status, as well as control and level of baccalaureate-granting institution (where the individuals were originally sampled for NPSAS:08 field-test data collection).

**Table C-3. Number and percentage of fielded field-test sample members located and considered B&B:08/18 respondents, by prior-response status, and control and level of baccalaureate-granting institution: 2017**

Prior-response status and control and level of baccalaureate-granting institution	Fielded <sup>2</sup>	Located <sup>1</sup>		Field-test respondents		
		Number	Percent of fielded	Number	Percent of located	Percent of fielded
<b>Total</b>	<b>1,560</b>	<b>1,370</b>	<b>87.9</b>	<b>960</b>	<b>69.8</b>	<b>61.3</b>
Prior-response status						
Double respondent <sup>3</sup>	940	890	94.8	740	82.5	78.2
Prior nonrespondent <sup>4</sup>	620	480	77.2	220	45.9	35.4
Control and level of institution						
Public 4-year, non-doctorate-granting	730	650	89.6	460	70.4	63.0
Private nonprofit						
4-year, non-doctorate-granting	470	410	87.4	290	70.5	61.6
4-year, doctorate-granting	360	310	86.0	200	66.7	57.3
For-profit 2-year or more	#	#	100.0	#	75.0	75.0

# Rounds to zero.

<sup>1</sup> Sample members were considered located if, at any point during data collection, contact information was confirmed to be accurate for the individual.

<sup>2</sup> Approximately 20 sample members were not fielded.

<sup>3</sup> Sample members who responded to both prior-round follow-up surveys, B&B:08/09 and B&B:08/12 field-test surveys.

<sup>4</sup> Sample members who did not respond to at least one of the two prior-round follow-up surveys, the B&B:08/09 or the B&B:08/12 field-test survey.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Batch tracing.** Contact information for the B&B:08/18 field-test sample was obtained and confirmed through matching with various sources of locating data. Before the initial contact mailing, the sample was matched with the National Change of Address (NCOA) database, the U.S. Department of Education's National Student Loan Data System (NSLDS), and PhoneAppend to update locating information.

Locating information was provided for 27 percent of the cases submitted to NCOA, 80 percent of the cases submitted to NSLDS, and 61 percent of the cases submitted to PhoneAppend. Any new information received was loaded into the B&B:08/18 CATI-Case Management System and available for the start of data collection. In addition, during the field-test data collection, Premium Phone, Single Best Address, and Single Best Phone batch searches were run to collect additional locating information. Locating results by tracing source are displayed in Table C-4. The number of cases sent to a tracing source depended upon the information required for that source's record matching.

**Table C-4. Number of cases sent, and number and percentage matched to batch tracing sources: 2017**

Batch tracing method	Number of cases sent	Number of cases matched	Percent matched <sup>1</sup>
National Change of Address (NCOA) database	1,500	400	27.0
National Student Loan Data System (NSLDS)	1,540	1,240	80.2
PhoneAppend	1,500	910	61.1
Premium Phone <sup>2</sup>	140	60	42.8
Single Best Address Search	160	100	63.8
Single Best Phone Search	260	210	78.9

<sup>1</sup> Percentages are based on the number of cases sent for batch tracing. Match rate includes instances in which either sample member contact information was confirmed, or new information was provided.

<sup>2</sup> For Premium Phone, percent matched includes only instances in which new information was provided.

NOTE: A case is defined to be a sample member and all associated contact information. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) Field Test.

**Intensive tracing.** Specially trained staff members initiated intensive tracing for sample members who were not located in batch tracing or initial locating. Overall, 6 percent of the 1,560 fielded B&B:08/18 field-test sample members required intensive tracing (Table C-5). Of the 90 cases requiring intensive tracing, 80 (88 percent) were successfully located. Of the those located, 10 (12 percent) completed the survey.



**Table C-5. Number and percentage of fielded B&B:08/18 field-test sample members requiring intensive tracing, by prior-response status, and control and level of baccalaureate-granting institution: 2017**

Prior-response status and control and level of institution	Fielded <sup>1</sup>	Cases requiring intensive tracing	
		Number	Percent
<b>Total</b>	<b>1,560</b>	<b>90</b>	<b>6.0</b>
Prior-response status			
Double respondent <sup>2</sup>	940	20	2.3
Prior nonrespondent <sup>3</sup>	620	70	11.7
Control and level of institution			
Public 4-year, non-doctorate-granting	730	40	5.5
Private nonprofit			
4-year, non-doctorate-granting	470	20	5.1
4-year, doctorate-granting	360	30	8.4
For-profit 2-year or more	#	#	#

# Rounds to zero.

<sup>1</sup> Approximately 20 sample members were not fielded.<sup>2</sup> Sample members who responded to both prior-round follow-up surveys, B&B:08/09 and B&B:08/12 field-test surveys.<sup>3</sup> Sample members who did not respond to at least one of the two prior-round follow-up surveys, the B&B:08/09 or the B&B:08/12 field-test survey.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08) Field Test.

### C.3.1.3 Contacting Efforts

Table C-6 shows the average number of telephone calls made to each sample member based on prior-response status and B&B:08/18 field-test survey response status. Overall, an average of 12 calls were made per sample member during the B&B:08/18 field-test data collection. Double respondents required an average of nine calls per case, significantly lower than the average of 17 calls per case for prior nonrespondents ( $t = -13.40, p < .0001$ ). Similarly, sample members who responded to the B&B:08/18 field-test survey received an average of five calls, significantly less than the average of 23 calls to B&B:08/18 field-test nonrespondents ( $t = -20.3, p < .0001$ ).

**Table C-6. Total and average number of calls made to fielded field-test sample members, by prior-response status and B&B:08/18 field-test response status: 2017**

Prior-round response status and B&B:08/18 field-test response status	Field-test sample	Total number of calls	Average number of calls
<b>Total</b>	<b>1,560</b>	<b>18,700</b>	<b>12.0</b>
Prior-response status			
Double respondent <sup>1</sup>	940	8,220	8.7
Prior nonrespondent <sup>2</sup>	620	10,480	17.0
B&B:08/18 field-test response status			
Respondent	960	4,980	5.2
Nonrespondent and exclusions	600	13,720	22.8

<sup>1</sup> Sample members who responded to both prior-round follow-up surveys, B&B:08/09 and B&B:08/12 field-test surveys.

<sup>2</sup> Sample members who did not respond to at least one of the two prior-round follow-up surveys, the B&B:08/09 or the B&B:08/12 field-test survey.

NOTE: Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

## C.3.2 Survey Data Collection Outcomes

### C.3.2.1 Response Rates

**Data collection phase.** The B&B:08/18 field test included four distinct phases of data collection: the early response phase (full survey, no telephone prompting), the production phase (full survey, outbound phone calls began), the nonresponse conversion phase (mini survey, telephone prompting continued), and the résumé-only phase (the final week of data collection). Of the 940 completed surveys, almost half of the B&B:08/18 field-test respondents (49 percent) completed their survey during the early response phase. The remaining sample members completed during the production phase (29 percent) or the nonresponse conversion phase (22 percent; Table C-7). Most double respondents completed surveys during the early response phase (55 percent), compared to prior nonrespondents, the majority (41 percent) of whom responded during the nonresponse phase. Table C-7 displays survey completion rates by prior-response status, as well as the control and level of the baccalaureate-granting institution.

**Table C-7. Number and percentage of B&B:08/18 field-test respondents, by data collection phase, prior-response status, and control and level of baccalaureate-granting institution: 2017**

Prior-response status and control and level of baccalaureate-granting institution	Field-test respondents	Data collection phase					
		Early response		Production		Nonresponse conversion	
		Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>940</b>	<b>460</b>	<b>48.8</b>	<b>270</b>	<b>29.1</b>	<b>210</b>	<b>22.1</b>
Prior-response status							
Double respondent <sup>1</sup>	720	400	54.8	210	28.5	120	16.6
Prior nonrespondent <sup>2</sup>	220	60	28.4	70	31.2	90	40.5
Control and level of institution							
Public 4-year, non-doctorate-granting	450	220	48.0	130	29.2	100	22.8
Private nonprofit							
4-year, non-doctorate-granting	290	140	49.3	80	26.2	70	24.5
4-year, doctorate-granting	200	100	49.0	70	33.5	40	17.5
For-profit 2-year or more	#	#	100.0	#	#	#	#

# Rounds to zero.

<sup>1</sup> Sample members who responded to both prior-round follow-up surveys, B&B:08/09 and B&B:08/12 field-test surveys.<sup>2</sup> Sample members who did not respond to at least one of the two prior-round follow-up surveys, the B&B:08/09 or the B&B:08/12 field-test survey.

NOTE: This table excludes 20 B&amp;B:08/18 field-test respondents who completed only a partial survey. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

**Survey type.** In the B&B:08/18 field test, sample members were offered the full survey for the first 9 weeks of the data collection period (early response and production phases), after which they were offered a 5-minute mini survey in weeks 10 through 16 (nonresponse conversion phase). Half of the sample members offered the 5-minute mini survey were also mailed a paper version. In the final week of data collection, the full and mini surveys were no longer available, and the remaining nonrespondents were offered the opportunity to simply upload their résumé as a final nonresponse conversion technique.

Table C-8 shows detail on completed B&B:08/18 field-test surveys by type, prior-response status, and control and level of baccalaureate-granting institution. Overall, of the 960 field-test survey respondents, 77 percent completed full surveys, 21 percent completed a mini survey, and 2 percent were classified as partial survey respondents.

**Table C-8. Number and percentage of B&B:08/18 field-test respondents, by completion status, survey type, prior-response status, and control and level of baccalaureate-granting institution: 2017**

Prior-response status, and control and level of baccalaureate-granting institution	Field-test respondents	Partial completion		Completed survey type			
		Number	Percent	Full		Mini	
				Number	Percent	Number	Percent
<b>Total</b>	<b>960</b>	<b>20</b>	<b>1.9</b>	<b>730</b>	<b>76.8</b>	<b>200</b>	<b>21.4</b>
Prior-response status							
Double respondent <sup>1</sup>	740	20	2.0	600	81.8	120	16.1
Prior nonrespondent <sup>2</sup>	220	#	1.4	130	59.6	90	39.0
Control and level of institution							
Public 4-year, non-doctorate-granting	460	10	2.4	350	75.6	100	22.0
Private nonprofit							
4-year, non-doctorate-granting	290	#	1.0	220	75.4	70	23.5
4-year, doctorate-granting	200	#	2.0	170	80.9	40	17.2
For-profit 2-year or more	#	0	0.0	#	100.0	0	0.0

# Rounds to zero.

<sup>1</sup> Sample members who responded to both prior-round follow-up surveys, B&B:08/09 and B&B:08/12 field-test surveys.<sup>2</sup> Sample members who did not respond to at least one of the two prior-round follow-up surveys, the B&B:08/09 or the B&B:08/12 field-test survey.

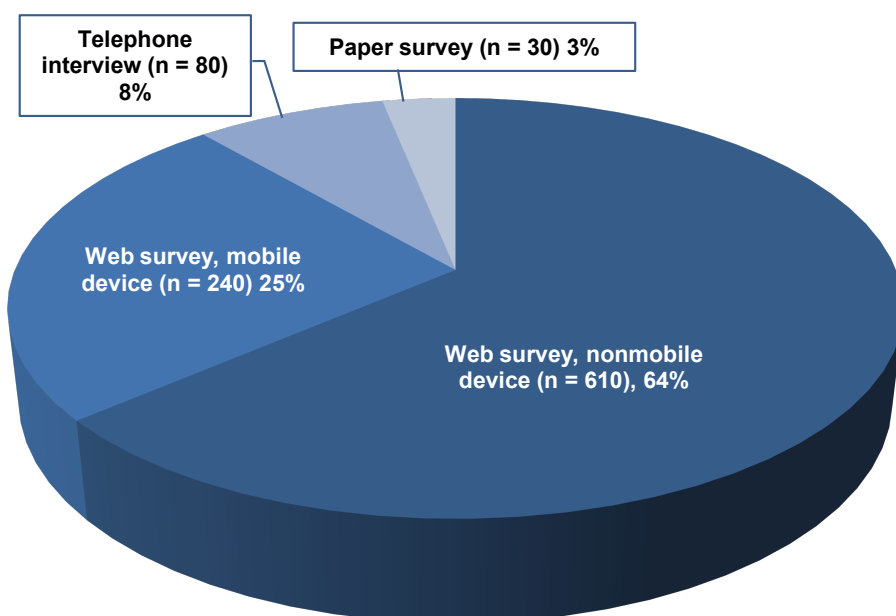
NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

**Mode of completion.** The B&B:08/18 field-test survey was offered by web, telephone, and paper (mini survey only). For analysis purposes, the self-administered web completion mode was separated by those completed on nonmobile or mobile (e.g., smartphone or tablet) devices. During the nonresponse conversion phase, the paper survey mailed to selected sample members could be returned by mail. The sample members selected for the paper survey could still choose to self-administer the survey via the Web, or with a telephone interviewer.

By the end of data collection, 850 sample members (89 percent) had completed the survey via the self-administered web instrument, and 240 of those (25 percent of the sample) completed by mobile device. Eighty sample members (8 percent) completed by telephone, and 30 sample members (3 percent) completed and returned the paper mini survey by mail.

**Figure C-2. Number and percentage of B&B:08/18 field-test respondents, by mode of completion: 2017**



NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

### **C.3.2.2 Refusal Conversion**

Interviewer training included instruction on refusal conversion techniques, and supervisors provided additional support for interviewers throughout data collection. During biweekly quality meetings, interviewers were encouraged to share their experiences, including effective strategies for converting reluctant sample members to respondents. Table C-9 displays refusal and refusal conversion rates, by prior-response status and control and level of baccalaureate-granting institution. Overall, 9 percent of eligible cases ever refused. Of those who refused, 17 percent subsequently responded to the survey.

**Table C-9. Number and percentage of fielded B&B:08/18 field-test sample members who ever had a refusal and who were subsequently considered a respondent, by prior-response status, and control and level of baccalaureate-granting institution: 2017**

Prior-response status and control and level of baccalaureate-granting institution	Fielded	Ever had a refusal <sup>1</sup>		Refusal, subsequent survey respondent		
		Number	Percent of fielded	Number	Percent of those with a refusal	Percent of fielded
Total	1,560	150	9.3	30	17.2	1.6
Prior-response status						
Double respondent <sup>2</sup>	940	50	5.3	20	36.0	1.9
Prior nonrespondent <sup>3</sup>	620	100	15.4	10	7.4	1.1
Control and level of institution						
Public 4-year, non-doctorate-granting	730	70	9.5	10	15.9	1.5
Private nonprofit						
4-year, non-doctorate-granting	470	40	8.1	10	13.2	1.1
4-year, doctorate-granting	360	40	10.7	10	23.7	2.5
For-profit 2-year or more	#	#	#	#	#	#

# Rounds to zero.

<sup>1</sup> Refusals include sample members who ever refused to complete the B&B:08/18 field-test survey or had a gatekeeper (parent or other contact) refuse to participate on their behalf.<sup>2</sup> Sample members who responded to both prior-round follow-up surveys, B&B:08/09 and B&B:08/12 field-test surveys.<sup>3</sup> Sample members who did not respond to at least one of the two prior-round follow-up surveys, the B&B:08/09 or the B&B:08/12 field-test survey.

NOTE: Total sample excludes approximately 20 cases that were not fielded. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

### C.3.2.3 Data Collection Experiments

Decreasing response rates have challenged survey researchers for many decades (e.g., Massey and Tourangeau 2012) because they increase the potential for nonresponse bias, increase survey cost, and potentially decrease sample sizes. Targeted or tailored survey designs have been used successfully to address nonresponse and attrition by increasing the relevance and legitimacy of a study and reducing respondent burden (e.g., Groves and Heeringa 2006; Lynn 2017). Three data collection experiments implemented in the B&B:08/18 field test investigated the effects of different tailoring designs: personalizing contacting materials, highlighting NCES as the survey source and signatory of e-mails (referred to as the sponsorship experiment), and tailoring the survey length and mode with an additional survey mode (i.e., offering the mini survey with and without a paper option). The field-test data collection results provided insight on the effectiveness of the various interventions with rates of survey response, representativeness, and data collection efficiency in preparation for the full-scale collection.

The experiments were evaluated on three criteria: survey and résumé response, representativeness, and efficiency. Nonresponse bias analyses were conducted to

assess representativeness for age and baccalaureate-granting institution characteristics such as control and level, region, and total enrollment. Efficiency was measured by the number of days between the start of the experiment and survey completion.<sup>6</sup> Then, one-sided  $t$  tests were used to assess whether survey response or efficiency increased significantly for the experimental groups (compared with control groups) and two-sided  $t$  tests were used to assess nonresponse bias for the experimental groups.

**Experiment 1: Tailoring of contact materials.** The first experiment was aimed at increasing topic salience, interest in the study, and rewards for participating by communicating high personal relevance in the contact materials. (For tailoring of advance materials and the theoretical motivation, see Blau 1964; Cialdini 1984; Groves and McGonagle 2001; Groves, Cialdini, and Couper 1992; Groves, Singer, and Corning 2000; Lynn 2016; Tourangeau, Groves, and Redline 2010). The contact materials for the experimental group were customized to refer to the sample member's bachelor's degree major (*tailored condition*), and letters to the control group included no such reference (*standard condition*). For example, "B&B is interested in understanding how earning a *bachelor's degree in Engineering* impacted your choices" in the *tailored* letter, compared to "B&B is interested in understanding how earning a *bachelor's degree* impacted your choices" in the *standard* letter.

Sample members with information about their bachelor's degree major from the B&B:08/09 field test were randomly assigned to either the standard condition ( $n = 630$ ) or the tailored condition ( $n = 470$ ). Sample members for whom this information was not available were assigned to the standard condition and were excluded from subsequent analyses.

**Response.** Overall, the differences between the two groups were not statistically significant ( $t = -0.11, p = .55$ ), with the tailored condition obtaining a 72 percent response rate compared with 72 percent in the standard condition. Because the literature suggests that tailoring is more effective among reluctant sample members (Lynn 2016), B&B:08/18 staff calculated the effect of tailoring by whether the individuals had responded to the B&B:08/12 field test. Among B&B:08/12 field-test nonrespondents, who were presumed to be less likely to respond to the B&B:08/18 field test, survey response increased from 36 percent in the standard condition to 42 percent in the tailored condition ( $t = 0.88, p = .19$ ). However, this finding, which is based on a small sample, was not statistically significant. Among B&B:08/12 field-

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<sup>6</sup> This analysis only includes respondents who completed the full survey online or via the telephone. Those who completed a partial interview or completed via paper are excluded.

test respondents, this increase in response rates is only 1 percentage point, from 78 percent to 79 percent ( $t = 0.36, p = .36$ ).

**Representativeness.** Overall, the maximum relative bias and the number of significantly biased indicators in the tailored condition were lower. There were three biased indicators in the standard condition (14 percent) compared with no biased indicators in the tailored condition (0 percent). These findings suggest that tailoring leads to a more representative sample. There is little difference across the two conditions in the average and the median absolute relative nonresponse bias. Table C-10 summarizes the results of this examination.

**Table C-10. Summary statistics of unit-level nonresponse bias analysis for the tailoring of B&B:08/18 field-test contact materials, by experimental condition: 2017**

Summary statistic	Standard condition	Tailored condition
Mean absolute relative nonresponse bias	8.38	9.45
Median absolute relative nonresponse bias	5.53	5.53
Maximum absolute relative nonresponse bias	44.47	39.40
Percentage of significantly biased indicators	14.3	#

# Rounds to zero.

NOTE: Sample members were randomly assigned to receive contact materials for the tailored condition ( $n = 470$ ) were customized to refer to the sample member's bachelor's degree major, and the standard condition ( $n = 630$ ) included no such reference.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Efficiency.** Although there was a positive trend in which respondents in the tailored condition completed the survey an average of one and one-half days earlier than respondents in the standardized condition (29 compared to 30 days), statistically significant differences were not detected ( $t = -0.70, p = .24$ ).

### Experiment 2: Emphasis on NCES as source and signatory of e-mails.

Research has shown that individuals are “more likely to comply with a request if it comes from an authority” (Groves, Cialdini, and Couper 1992, p. 472). This is based on an increased sense of legitimacy for government research and on trust, due to government employees facing high penalties if they disclose provided information (Dillman, Smyth, and Christian 2014). A government sponsorship may also increase the feeling of social responsibility and create a sense of civic duty. Positive effects on response rates have been reported when using university or government sponsors, compared with other, unknown organizations (e.g., Avdeyeva and Matland 2013; Edwards, Dillman, and Smyth 2014; Groves et al. 2012; Heberlein and Baumgartner 1978).

To investigate this effect, all sample members were randomly assigned to receive e-mails from an “@rti.org” e-mail address (signed by the RTI International study director, followed by a signature from the NCES study director), or to receive e-



mails from an “@ed.gov” e-mail address (signed by the NCES study director, followed by the signature of the RTI study director). This experiment started with the first e-mail reminder and applied to all e-mails through the end of data collection. The first condition is referred to as the “RTI” condition ( $n = 670$ ) and the latter condition as the “NCES” condition ( $n = 660$ ). This random assignment accounted for the assignment of the tailoring experiment to ensure the ability to measure the independent effects of tailoring and sponsorship.

**Response.** Both groups achieved identical response rates at the end of data collection (55 percent;  $t = 0.02$ ,  $p = .49$ ). The NCES condition did perform slightly better in the résumé upload rate (33 percent) compared with the RTI condition (31 percent) but this difference is not statistically significant ( $t = 0.74$ ,  $p = 0.23$ ).

**Representativeness.** The results suggest that sending e-mails using an NCES address yielded a more representative sample. Mean, median, and maximum absolute relative nonresponse bias were all lower in magnitude in the NCES condition, resulting in only one biased indicator, compared to two biased indicators in the RTI condition (Table C-11).

**Table C-11. Summary statistics of unit-level nonresponse bias analysis for the signatory of B&B:08/18 field-test e-mails, by experimental condition: 2017**

Summary statistic	RTI condition	NCES condition
Mean absolute relative nonresponse bias	10.96	10.05
Median absolute relative nonresponse bias	8.90	7.37
Maximum absolute relative nonresponse bias	54.47	44.50
Percentage of significantly biased indicators	10.5	4.8

NOTE: Sample members were randomly assigned to (1) the Research Triangle Institute (RTI) International condition ( $n = 670$ ) or (2) the National Center for Education Statistics (NCES) condition ( $n = 660$ ). E-mails to sample members in the RTI condition were sent from an “@rti.org” e-mail address (signed by the RTI International study director, followed by a signature from the NCES study director). E-mails to sample members in the NCES condition were sent from an “@ed.gov” e-mail address (signed by the NCES study director, followed by the signature of the RTI study director). This experiment started with the first e-mail reminder and applied to all e-mails through the end of data collection.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Efficiency.** After the start of the experiment, respondents in the NCES condition (31 days) completed the survey approximately 2 days faster than respondents in the RTI condition (33 days), although this difference was not statistically significant ( $t = -0.84$ ,  $p = .20$ ).

**Experiment 3: Mini surveys.** Reducing the burden of the survey as a tool for nonresponse conversion, for example, by decreasing the survey length and offering alternative modes of completion, has been shown to increase participation rates and representativeness in surveys (Biemer et al. 2016; Galesic and Bosnjak 2009; Groves

and Couper 1998; Messer and Dillman 2011; Mowen and Cialdini 1980; Shettle and Mooney 1999).

To increase response rates among the more reluctant sample members in the field test, sample members who failed to complete the survey by week 10 (of 16 weeks) were offered a mini version consisting of approximately 10 questions. Sample members were furthermore randomly assigned to either complete this mini survey in the standard modes offered (i.e., web or telephone; the *mini-standard* group;  $n = 400$ ) or with the option of mailing in a survey completed on paper (the *mini-paper* group;  $n = 400$ ). A small number of sample members (fewer than 10) completed the mini survey before receiving the invitation to do so. These cases were excluded from subsequent analyses for Experiment 3.

**Response.** The mini survey significantly increased the overall response rate relative to the full survey from 49 percent to 61 percent among the fielded cases ( $t = 7.19$ ,  $p < .001$ ). As expected, of those sample members who had not completed the survey by week 10 of data collection, the mini-paper group achieved a higher response rate (26 percent) than the mini-standard group (23 percent). However, while the direction of this effect was as expected, the difference was not statistically significant ( $t = 0.86$ ,  $p = .20$ ). Among those who participated in the mini survey, respondents in the mini-standard group did upload their résumés at higher rates (35 percent) than those in the mini-paper group (18 percent;  $t = -2.73$ ,  $p < .01$ ). The lower submission rate in the mini-paper group is driven by the fact that none of the respondents who completed the survey via mail uploaded their résumés.<sup>7</sup> Among the mini-paper respondents who completed the survey via the Web, 26 percent uploaded their résumé, a smaller percentage than for the mini-standard group.

**Representativeness.** The mini-paper group increased representativeness by reducing the magnitude of nonresponse bias across three indicators: average, median, and maximum absolute relative nonresponse bias (Table C-12). Both conditions produced samples in which none of the indicators was significantly biased.

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<sup>7</sup> The mini-paper group was encouraged to upload their résumés online.

**Table C-12. Summary statistics of unit-level nonresponse bias analysis for the B&B:08/18 field-test mini survey, by experimental condition: 2017**

Relative nonresponse bias	Relative nonresponse bias	Relative nonresponse bias
Mean absolute relative nonresponse bias	15.46	14.64
Median absolute relative nonresponse bias	10.95	9.06
Maximum absolute relative nonresponse bias	78.50	44.50
Percentage of significantly biased indicators	#	#

# Rounds to zero.

NOTE: Sample members who failed to complete the survey by week 10 (of 16 weeks) were offered a mini version consisting of approximately 10 questions. They were randomly assigned to either complete this mini survey in the standard modes offered (i.e., web or telephone; the *mini-standard condition*;  $n = 400$ ) or with the option of mailing in a survey completed on paper (the *mini-paper condition*;  $n = 400$ ). A small number of sample members (fewer than 10) completed the mini survey before receiving the invitation to do so. These cases were excluded from the statistics presented in this table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Efficiency.** The measure of efficiency was adjusted to capture the time between when sample members received their mail invitation to complete the mini survey and when they completed the survey online. Contrary to the expectations, the results suggest that respondents in the mini-paper condition completed the survey about 3 days later (23 days) than respondents in the mini-standard condition (20 days). These results are statistically significant ( $t = 1.66, p < .05$ ) and do not include respondents in the mini-paper condition who completed the survey via mail ( $n = 30$ ).

Recommendations for data collection, based on the results of the data collection experiments, are presented in section C.4.1.

### C.3.3 Evaluation of the Survey

This section presents results from survey evaluation and analyses of instrumentation metrics related to the experience of taking the survey, including respondent behavior, reliability reinterviews, timing burden on respondents, instrument coders, use of help text, item-level nonresponse, and cognitive and usability testing. This section also summarizes the results of an instrumentation experiment to evaluate response-option formats.

#### C.3.3.1 Respondent Behavior

This section describes respondent behavior during the field test, including the rate of respondents completing the survey in more than one session, changes in mode of administration across sessions, and the last survey section completed by respondents who did not return to complete the survey.

**Break offs.** When respondents broke off during the survey and continued the survey later in a new session, they began on the last unanswered form they saw in their previous session. Table C-13 shows break-off status by initial survey mode (i.e., the

survey mode in which the sample member began the survey). Overall, 30 percent of respondents broke off at some point before completing the survey. Respondents who started the survey in web nonmobile mode had a break-off rate of 24 percent, significantly lower than the 38 percent break-off rate for respondents who started the survey in web mobile mode ( $t = -3.77, p < .001$ ). Compared to web nonmobile survey mode, surveys initially conducted on a mobile device may result in more break offs because of the flexibility the device offers to easily self-administer the survey. The break-off rate for surveys conducted by telephone interviewer was also significantly higher than web nonmobile mode: 46 percent of respondents who started the survey with a telephone interviewer broke off ( $t = -3.50, p < .001$ ). The higher break-off rate for surveys conducted by telephone interviewers may be due to the longer completion time associated with telephone interviewing (see section C.3.3.3 for timing burden details).

**Table C-13. B&B:08/18 field-test initial survey mode, by break-off status: 2017**

Break-off status	B&B:08/18 field-test respondents		Initial survey mode					
			Web nonmobile		Web mobile		Telephone	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>910</b>	<b>100</b>	<b>590</b>	<b>100</b>	<b>240</b>	<b>100</b>	<b>70</b>	<b>100</b>
Never had a break off	640	70.5	450	75.8	150	62.2	40	54.2
Had break off	270	29.6	140	24.2	90	37.8	30	45.8

NOTE: Table excludes 50 respondents who never attempted to log in. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Changes in mode of administration.** Respondents were able to change mode of administration when continuing the survey after a break off. A change in mode may be due to convenience, preference for a device, or difficulty completing the survey in a specific mode. A change in mode was defined as beginning the survey in one mode and completing it in a different mode. Approximately 30 percent of respondents completed in more than one session, and fewer changed modes of administration when starting a new session. Table C-14 details mode-change status by initial survey mode. Two percent of respondents changed mode during the process of completing the survey, all of whom began the survey on a mobile device. While 38 percent of all web mobile respondents completed the survey in more than one session, only 2 percent changed modes of administration. This indicates that mobile device self-administration is convenient and flexible for respondents and typically is a suitable mode for the respondent to complete the survey.

**Table C-14. B&B:08/18 field-test initial survey mode, by mode-change status: 2017**

Mode-change status	B&B:08/18 field-test respondents		Initial survey mode					
			Web nonmobile		Web mobile		Telephone	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>910</b>	<b>100.0</b>	<b>590</b>	<b>64.8</b>	<b>260</b>	<b>28.6</b>	<b>70</b>	<b>7.7</b>
Did not change modes	880	96.7	590	64.8	230	25.3	70	7.7
Changed modes	20	2.2	#	#	20	2.2	#	#

# Rounds to zero.

NOTE: Table excludes 50 respondents who never attempted to log in. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Survey section of break offs.** When a respondent breaks off and does not return to complete the survey, the last survey section seen by the respondent may be an indicator of cognitive burden (e.g., difficulty remembering details of employment from 6 years ago) or respondent fatigue at a certain point in the survey (e.g., after responding to multiple series of items about past employers).

Only 20 respondents broke off and did not complete the entire survey, roughly 2 percent of all survey respondents. Most (59 percent) broke off during the Employment section, 27 percent broke off during the Background section, and 14 percent broke off during the Teaching section.

### C.3.3.2 Reinterview Analysis

Reliability of self-reported responses to survey questions is a significant indicator of data quality in survey research. Reliability can be measured by temporal stability, or how constant responses remain over time. To assess the reliability of self-reported survey responses collected in the field test, all sample members who completed the full survey were invited to participate in a reinterview. The reinterview consisted of 20 forms selected from the full survey. Included in the reinterview were questions predicted to remain constant over time (e.g., voting in the 2016 presidential election) and questions new to a B&B survey. Nineteen of these forms, containing a total of 29 items, are analyzed for reliability in this section. Reliability results for *Result of undergraduate costs* (B18FAFFCOST), are described in section C.3.3.8 in relation to the forced-choice experiment.

Of the 730 respondents who completed the full survey, 520 did not refuse and were used as the reinterview sample. Each reinterview sample member was contacted approximately 3 weeks after completing the full survey and was asked to participate in a short reliability reinterview. Sample members were prompted to complete the reinterview in the same mode in which they completed the full survey. Of the 520

full-survey respondents in the reinterview sample, 230 (44 percent) completed the reinterview. On average, the reinterview took 4 minutes to complete.

Items with discrete responses (e.g., yes/no) were considered in agreement if the survey and reinterview responses matched precisely. For items yielding continuous responses (e.g., income), responses were considered in agreement if the reinterview response value was within one standard deviation of the initial survey response value. Cramer's  $V$  was used as the relational statistic for discrete items, and the Pearson product-moment correlation coefficient ( $r$ ) was used for continuous items. For each relational statistic, a value of 1 indicates perfect correlation (i.e., all respondents provided reinterview responses that matched their initial item response exactly).

Overall, the reinterview analysis demonstrates consistently reliable results and high data quality for items included in the reinterview. Of the 29 items examined, 44 produced agreement rates above 80 percent, and 26 produced agreement rates above 90 percent. The lowest agreement rate was 72 percent. The sections and tables below present reliability estimates for all items included in the reinterview by content section: Postbaccalaureate Education, Financial Aid, Employment, and Background.

**Postbaccalaureate education items.** Postbaccalaureate education items had a mean agreement rate of 92 percent. The reinterview included three items about postbaccalaureate education: *Industry or occupational license* (B18CLICENSE) with an agreement rate of 89 percent (Cramer's  $V = .77$ ), *Attended college, university, or trade school for an additional degree since last interview* (B18CPSTGRD) with an agreement rate of 92 percent (Cramer's  $V = .82$ ), and *Vocational or technical certificate or diploma* (B18CCERT) with an agreement rate of 94 percent (Cramer's  $V = .53$ ).

**Financial aid items.** The reinterview included 11 items capturing financial aid information. Responses to items in the Financial Aid section had a mean agreement rate of 91 percent, ranging from a low of 72 percent (*Not enrolled in an income-driven repayment plan: did not need lower monthly loan payments* [B18CIDRPAY]) to a high of 100 percent (*Did not have any federal or private student loans* [B18CLOANNO]). *Amount borrowed in student loans since 2011* (B18CLOANAMT), the only continuous variable included in this section, had an agreement rate of 96 percent. Agreement percentages and relational statistics for financial aid items are shown in Table C-15.

**Table C-15. Reliability estimates for B&B:08/18 field-test Financial Aid survey items: 2017**

Item	Item label	Number	Percent agreement	Relational statistic
B18CFEDDEF	Defaulted on a federal student loan	130	97.7	.83
B18CIDOTHR	Not enrolled in income-driven repayment plan: other reason(s)	70	86.6	.54
B18CIDRAPP	Not enrolled in income-driven repayment plan: in the process of applying and enrolling in an income-driven repayment plan	70	98.5	.70
B18CIDREFF	Not enrolled in income-driven repayment plan: thought applying would take too much time or effort	70	95.5	.55
B18CIDRELIG	Not enrolled in income-driven repayment plan: did not think I was eligible	70	80.6	.46
B18CIDRKNOW	Not enrolled in an income-driven repayment plan: not aware of income-driven repayment plan	70	82.1	.49
B18CIDRPART	Enrolled in an income-driven repayment plan for federal student loans	120	93.3	.87
B18CIDRPAY	Not enrolled in income-driven repayment plan: did not need lower monthly loan payments	70	71.6	.42
B18CIDRTRM	Not enrolled in income-driven repayment plan: did not like terms of these plans (i.e., time to repayment)	70	94.0	.77
B18CLOANAM <sup>1,2</sup>	Amount borrowed in student loans since 2011	40	95.5	.93
B18CLOANNO	Did not have any federal or private student loans	40	100.0	1.00

<sup>1</sup> For this item, agreement is defined as a reinterview response value within one standard deviation of the initial survey response value.

<sup>2</sup> The relational statistic presented is Pearson's product-moment correlation coefficient  $r$ .

NOTE: Item agreement is defined as a reinterview response value identical to the initial survey response value unless otherwise footnoted. The relational statistic presented is Cramer's  $V$  unless otherwise footnoted. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Employment items.** The reinterview included five items capturing employment information. The values in Table C-16 indicate that this section generally had very high reliability estimates. This section of the reinterview had a mean agreement rate of 93 percent, ranging from a low of 78 percent (*Negotiated for salary or benefits since completing bachelor's degree* [B18DNEGOTIAT]) to a high of 99 percent (*Employed since 2011* [B18DANYJOBS]). *Number of employers since 2011* (B18DNUMEMP), the only continuous variable in this section, had an agreement rate of 96 percent.

**Table C-16. Reliability estimates for B&B:08/18 field-test Employment survey items: 2017**

Item	Item label	Number	Percent agreement	Relational statistic
B18DANYJOBS	Employed since 2011	230	99.1	.86
B18DISABL	Received disability benefits since 2011	230	94.7	.67
B18DNEGOTIAT	Negotiated for salary or benefits since completing bachelor's degree	220	78.1	.54
B18DNUMEMP <sup>1,2</sup>	Number of employers since 2011	220	96.3	.88
B18DUNCM	Received unemployment since 2011	230	96.0	.74

<sup>1</sup> For this item, agreement is defined as a reinterview response value within one standard deviation of the initial survey response value.

<sup>2</sup> The relational statistic presented is Pearson's product-moment correlation coefficient  $r$ .

NOTE: Item agreement is defined as a reinterview response value identical to the initial survey response value unless otherwise footnoted. The relational statistic presented is Cramer's  $V$  unless otherwise footnoted. Sample sizes rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Background items.** A total of 11 items in the reinterview pertained to background information. As presented in Table C-17, the items in the Background section had a mean agreement rate of 95 percent, with a low of 82 percent (*After you [and spouse*

*partner] sold all possessions to pay your debt, would you have something left over, break even, or still be in debt* [B18FSELLPO]) and a high of 99 percent (*Number of children supported* [B18FDEP2]). The only continuous variables included in this section, *2016 income prior to taxes and deductions* (B18FINCOM) and *Number of children supported* (B18FDEP2), had agreement rates of 94 and 99 percent, respectively. Among the items that pertained to various forms of perceived discrimination, *Discriminated against: sex* (B18FDISSEX) had the lowest agreement rate (89 percent).

**Table C-17. Reliability estimates for B&B:08/18 field-test Background survey items: 2017**

Item	Item label	Number	Percent agreement	Relational statistic
B18BINCHO	Satisfied with the quality of undergraduate education	230	95.6	.71
B18FDEP2	Number of children supported	100	99.0	.87
B18FDEPS	You [or spouse/partner] have dependent children	230	97.4	.95
B18FDISCRETH	Discriminated against: race or ethnicity	220	94.2	.65
B18FDISGEN	Discriminated against: gender identity	220	95.1	.25
B18FDISLGBTQ	Discriminated against: sexual orientation	220	96.9	.45
B18FDISNATION	Discriminated against: national origin or citizenship status	220	98.2	.32
B18FDISSEX	Discriminated against: sex	220	89.3	.69
B18FINCOM <sup>1,2</sup>	2016 income prior to taxes and deductions	220	94.1	.90
B18FSELLPO	After you [and spouse/partner] sold all possessions to pay debt, would you have something left over, break even, or still be in debt	230	82.2	.62
B18FVTNEL	Voted in the November 2016 presidential election	220	97.8	.88

<sup>1</sup> For this item, agreement is defined as a reinterview response value within one standard deviation of the initial survey response value.

<sup>2</sup> The relational statistic presented is Pearson's product-moment correlation coefficient *r*.

NOTE: Item agreement is defined as a reinterview response value identical to the initial survey response value unless otherwise footnoted. The relational statistic presented is Cramer's *V* unless otherwise footnoted. Sample sizes rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

### C.3.3.3 Timing Burden

**Survey timing.** To assess the burden associated with completing the field-test survey, the time required for each respondent to complete the survey was recorded and analyzed.<sup>8</sup> Special attention was paid to the average time it took respondents to complete the survey based on mode of completion, teacher status, and résumé upload status. In addition, the average time to administer each individual form in the survey was analyzed, excluding the résumé upload and incentive forms.

The B&B:08/18 field-test respondents completed two types of surveys: the full survey or a mini (5-minute) survey. The full survey comprised content areas pertinent to the study: Postbaccalaureate Education, Financial Aid, Employment, Teaching, and Background. These sections preceded the résumé upload and incentive sections. The mini survey was a highly abbreviated version of the full survey and included the

<sup>8</sup> The interview recorded the elapsed time respondents took to complete each form. The completion time for each section and the total survey time was the sum of all form completion times.



survey forms most necessary for imputing other items. Further description of the full and mini surveys and results is available in section C.3.2.1.

The survey instrument recorded the elapsed time respondents took to complete each form. The completion time for a section equals the sum of completion times for all the forms in that section, and the total survey completion time equals the sum of completion times for all forms in the entire survey with the exception of the résumé completion section.

When respondents broke off and continued the survey in a new session, they began on the last unanswered form they saw in their previous session. When a respondent broke-off, the timing for the last unanswered form could not be measured. In this situation, the completion time for that form was imputed to the median time other respondents (who did not break off on that form) spent completing the same form. Imputing form-level timing values made it possible to estimate the total survey completion time for respondents who completed the survey in multiple sessions.

The following timing analyses are conducted for 850 field-test respondents. This includes respondents who completed the survey on the Web or by telephone, and excludes partials, paper survey completers, résumé-only cases, cases with more than one break-off, and time outliers.<sup>9</sup> See details in Table C-18.

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<sup>9</sup> The distribution of total survey times had considerably more large values than would be expected if the values followed a symmetric distribution such as the normal distribution, or bell curve. To detect unexpectedly large and small total time values, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). This statistical method adjusts the values to make the distribution more similar to a normal distribution. Next, respondents with transformed survey times that were greater than the 75th percentile of the distribution plus 1.5 times the interquartile range or less than the 25th percentile times 1.5 the interquartile range were omitted from all timing analyses (Tukey 1977). (The interquartile range equals the 75th percentile value of the distribution minus the 25th percentile value.) Overall, the outlier-detection method led to the exclusion of nine full interview cases and one mini interview case, representing 1 percent of all completed cases.

**Table C-18. Number and percentage of B&B:08/18 field-test respondents, by inclusion in timing analyses and survey type: 2017**

Inclusion in timing analyses and survey type	Number	Percent
<b>Total</b>	<b>980</b>	<b>100.0</b>
Included in timing analyses	850	87.3
Completed full interview	680	69.5
Completed mini interview	170	17.7
Excluded from timing analyses	120	12.7
Partial interviews	40	3.7
Mini paper interviews	30	3.1
Résumé-only cases	#	#
Total interview time outliers <sup>1</sup>	10	0.8
Completed in more than one session	50	4.8

# Rounds to zero

<sup>1</sup> To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977).

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Timing by mode of completion.** On average, the full survey took 36.8 minutes to complete. The full web nonmobile survey took 36.6 minutes, on average, to complete, significantly less time than telephone interviews, which took an average of 48.0 minutes ( $t = 5.7, p < .001$ ).<sup>10</sup> Telephone interviews were also significantly longer than full surveys completed on a mobile device, which took 34.4 minutes, on average, to complete ( $t = 6.4, p < .001$ ).

The mini survey took 6.5 minutes, on average, to complete. There was no statistically significant difference between any of the administration modes for the mini survey.

Table C-19 shows the average time overall and across modes of completion for the full and mini surveys.

<sup>10</sup> Satterthwaite (1946) approximation was used in tests with unequal variances.

**Table C-19. Average time, in minutes, to complete the B&B:08/18 field-test survey, by mode of completion and survey type: 2017**

Survey type	All respondents		Mode of completion					
			Web nonmobile		Web mobile		Telephone	
	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Full survey	680	36.8	460	36.6	170	34.4	50	48.0
Mini survey	170	6.5	100	6.5	40	6.2	30	7.2

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Average time excludes the time associated with Incentive Offering section. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Timing by teacher status.** Respondents in the full survey were classified as teachers if they reported any kindergarten through 12th-grade (K–12) regular classroom teaching experience in either the B&B:08/12 field-test survey or the B&B:08/18 field-test survey.

As anticipated, given the additional questions administered to teachers in the full survey, teachers took an average of 41.7 minutes to complete the full survey, significantly longer than nonteachers, who took 35.8 minutes ( $t = -3.09, p < .001$ ). Teachers who completed the full survey by web mobile mode took the shortest time to complete the survey, at 37.6 minutes on average, significantly shorter than teachers who completed by web nonmobile or telephone modes: 42.2 minutes ( $t = -3.09, p < .001$ ) and 56.1 minutes ( $t = -2.52, p < .05$ ), respectively. Table C-20 shows the time respondents took to complete the full survey by mode of completion and teacher status.

**Table C-20. Average time, in minutes, to complete the B&B:08/18 field-test full survey, by mode of completion and teacher status type: 2017**

Teacher status	Full survey completers		Mode of completion					
			Web nonmobile		Web mobile		Telephone	
	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
<b>Total</b>	<b>680</b>	<b>36.8</b>	<b>460</b>	<b>36.6</b>	<b>170</b>	<b>34.4</b>	<b>50</b>	<b>48.0</b>
Teachers <sup>1</sup>	120	41.7	70	42.2	40	37.6	10	56.1
Nonteachers	560	35.8	390	35.5	130	33.5	40	46.3

<sup>1</sup> Full survey completers were classified as teachers if they reported any kindergarten through 12th-grade regular classroom teaching experience in either the B&B:08/12 field-test survey or the B&B:08/18 field-test survey.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Average time excludes the time associated with Incentive Offering section. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Timing by résumé upload status.** At the end of the survey, all respondents were asked to upload their résumés for an additional incentive amount. This résumé request occurred after respondents had completed the substantive portion of the survey. Respondents could upload résumés either by web nonmobile or web mobile device; therefore, telephone interview respondents were offered the opportunity to return to the survey website and upload their résumés later. The résumé request spanned three pages: the initial request, the custom page for file upload from the respondent's device, and a final question asking about the completeness and accuracy of the uploaded résumé. This request to upload a document was new to B&B and was analyzed for its impact on timing burden.

Résumé upload increased the timing burden for both full and mini survey respondents. The average time to complete the full survey was 35.4 minutes for respondents that did not upload a résumé, significantly less time than the 39.0 minutes, on average, to complete the full survey for respondents who uploaded a résumé ( $t = -2.52, p < .01$ ).

For mini survey respondents, those that did not upload a résumé took 6.0 minutes, on average, to complete the survey. This was significantly less time than the 7.9 minutes, on average, to complete the mini survey for respondents who uploaded a résumé ( $t = -2.80, p < .01$ ). Table C-21 shows the average time to complete the full and mini surveys, by mode of completion, survey type, and résumé upload status.

**Table C-21. Average time, in minutes, to complete the B&B:08/18 field-test survey, by mode of completion, survey type, and résumé upload status: 2017**

Survey type and résumé upload status	Respondents		Mode of completion					
			Web nonmobile		Web mobile		Telephone	
	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Completed, full surveys	680	36.8	460	36.6	170	34.4	50	48.0
Uploaded résumé	270	39.0	220	38.7	40	38.5	10	53.9
Did not upload résumé	410	35.4	240	34.7	140	33.3	40	47.0
Completed, mini surveys	170	6.5	100	6.5	40	6.2	30	7.2
Uploaded résumé	50	7.9	40	8.6	10	5.4	#	5.9
Did not upload résumé	120	6.0	60	5.2	30	6.4	30	7.3

# Rounds to zero.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Average time excludes the time associated with Incentive Offering section. This table excludes partials, paper survey completers, respondents who exited the survey twice before completing, and respondents with an outlying total survey completion time. To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977). Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Form times.** The forms with the highest completion times were analyzed individually to assess other potential sources of burden. Coders, which require the respondent or telephone interviewer to enter text strings on the form and then select a response from a list of possible matches returned from an underlying database, represent some of the longest form times in the survey. Three of five coders had an average administration time greater than 60 seconds. These forms were expected to yield the longest form times. See section C.3.3.4 for more information on coders.

The survey included an experiment to compare two different formats for coders. Full-survey respondents were randomly assigned one of two versions of the occupation coder, predictive or traditional. The predictive coder format begins returning a list of possible matches as soon as the respondent or telephone interviewer starts typing. The traditional coder format requires the respondent or telephone interviewer to type a complete text string, wait for the coder to return a list of possible matches, then select an option from the list.

Both versions had an administration time greater than 60 seconds. Results from the full survey indicate that the *Occupation: predictive coder* (B18DOCC01) produced a lower timing burden than the *Occupation: traditional coder* (B18DOCC01). The predictive occupation coder took significantly less time to complete, 140.2 seconds on average, compared with the traditional occupation coder, which took 175.7 seconds on average ( $t = -2.39, p < .05$ ). The next longest administration time for a coder was for the *Postbaccalaureate school 1: primary major* (B18CMAJ01) coder, which took respondents 63.7 seconds to complete, on average.

The *Résumé upload* form (RESUPLOAD) took the longest to complete, on average, of noncoder forms. Respondents spent an average of 113.5 seconds uploading their résumés by web nonmobile or web mobile device. The median completion time was substantially lower at 43.0 seconds. Longer administration times for Likert rating-scale forms were expected given the large grid structure, displayed in a list. The Likert-scale forms *Level of job satisfaction* (B18DJSAT01) and *Teaching influences* (B18ETHNKINFL) took an average of 77.1 seconds and 68.9 seconds to complete, respectively. Two custom forms also had longer administration times; both the starting-hours-and-salary form and months-employed form, requested extensive information from the respondent. The starting hours and salary custom form required respondents to report salary in a numeric text box, a salary time frame by radio-button selection, and average hours per week in a numeric text box. *Starting hours and salary* (B18DEMPLOYA01) took an average of 73.9 seconds to complete. The custom form for *Months employed* (B18DKWMON01) displayed calendars for each year. Respondents selected the individual months they were employed by a given employer and took an average of 70.3 seconds to complete this form.

Table C-22 shows all forms with average completion times greater than 60 seconds in descending order by average time.

**Table C-22. Average and median time, in seconds, to complete the B&B:08/18 field-test survey forms with the longest average completion times: 2017**

Form name	Form description	Form type	Number of cases	Average	Median
B18DOCC01	Occupation: traditional coder	Coder	320	175.72	117.42
B18DOCCEX01	Occupation: predictive coder	Coder	330	140.15	86.21
RESUPLOAD	Résumé upload form	Custom form	310	113.52	42.95
B18DJSAT01	Level of satisfaction	Likert	660	77.06	60.74
B18DEMPLOYA01	Starting hours and salary	Text box/Radio buttons	660	73.94	45.88
B18DWKMON01	Months employed	Months form	150	70.26	48.54
B18ETHNKINFL	Teaching influences	Likert	40	68.93	41.95
B18CMAJ01	Postbaccalaureate school 1: primary major	Coder	260	63.68	39.45

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

### C.3.3.4 Coder forms

The B&B:08/18 field-test survey used coders to standardize collection and coding of several pieces of respondent information. Coders were used to collect information on all postsecondary institutions attended since the last follow-up, major or field of study for each degree program, zip code for all employers, occupation for up to three employers, respondent's last high school attended, and for teachers, all K–12 schools at which respondents had taught since the last follow-up.

Following are descriptions of the individual coding systems and their underlying databases.

- The postsecondary institution coder form (applicable to all postbaccalaureate institutions attended) was linked to the complete set of institutions contained in IPEDS:2015–16 (<https://nces.ed.gov/ipeds>). As respondents typed in their institution’s name, this coder form helped assign an IPEDS ID. For institutions not found in the database, the instrument saved any original text entered and prompted respondents or (telephone interviewers) to provide the control and level of the institution, as well as the city and state in which the institution was located.
- The major or field of study coder form used the 2010 CIP taxonomy developed by NCES (<https://nces.ed.gov/ipeds/cipcode/Default.aspx?y=56>) to assign a CIP code to each reported degree program. For any major or field of study not found in the CIP database, the instrument saved any entered text strings and asked respondents (or telephone interviewers) to select a general area of study and a specific discipline within that area.
- The employer and primary residence zip code coder forms were built from the ZIPList5 Max database (<https://zipinfo.com/products/z5max/z5max.htm>). The instrument searched the database using the zip code or city and state entered by the respondent (or telephone interviewer). Entered strings were saved for any zip codes not found in the database.
- The occupation coder form linked respondents’ occupation titles to occupation codes using Version 22.0 of the Occupational Information Network-Standard Occupational Classification (O\*NET-SOC) database (<https://onetonline.org>), which utilizes the 2010 SOC taxonomy (<https://www.bls.gov/soc/2010/home.htm>). For any occupation titles not found in the database, the instrument saved the entered text string and asked respondents (or telephone interviewers) to provide a general area, specific area, and a detailed classification for the occupation. Respondents who were not able to code their occupation from the returned results were also asked to briefly describe their job duties.
- The K–12 school and high school coder forms were linked to all schools available through PSS for private K–12 schools (<https://nces.ed.gov/surveys/pss>) and CCD for public K–12 schools

(<https://nces.ed.gov/ccd>). This coder form assigned an NCES school ID to respondents' high schools and all schools where respondents taught K–12. For schools not identified by the K–12 coder form, the survey recorded the school name as a text string and asked respondents (or telephone interviewers) to also provide the school control, district or county name, and the highest and lowest grade levels offered at the school.

All coders used a predictive search format, which begins returning a list of possible matches as soon as the respondent or telephone interviewer starts typing. As the individual types additional characters, the predictive coder updates the possible matches in real time. The individual can select an option based on a partial response as soon as it appears rather than waiting to finish typing the full response.

Predictive search functionality was incorporated into the occupation coder for the first time in B&B during the B&B:08/18 field test. To compare data quality and respondent burden across the new and previously used coder formats, both predictive and traditional occupation coders were included in the B&B:08/18 field-test survey.

To assess the quality and usability of these coding systems, recoding rates for majors and occupations were analyzed, and upcoding rates for all five coding systems were examined.<sup>11</sup> The following analyses were limited to a sample of respondents who either completed the full or mini survey ( $n = 930$ ).<sup>12</sup>

**Upcoding.** If no code was selected on a coder form, all open-ended strings from the text field went through an “upcoding” process, during which data editing staff worked to assign a code. A form’s upcode rate is the percentage of previously uncoded, open-ended text responses to that form that were able to be coded by project staff during data editing.

Overall, text strings from the predictive occupation coder had the highest upcoding rate, with 11 percent of responses not coded in the survey being upcoded by expert coders. The functionality of the predictive search may have led to this higher rate, as respondents cleared out text strings to revise their returned results. The coders with the next highest rates of upcoding were the K–12 school coder and the zip code coder, with 8 percent each. This result was anticipated given that changes to school

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<sup>11</sup> If no code was selected on a coder form, all open-ended strings went through an “upcoding” process, during which data editing staff worked to assign a code. A form’s upcode rate is the percentage of previously uncoded, open-ended text responses to that form that were able to be coded by project staff during data editing.

<sup>12</sup> Mini paper survey completers were excluded from coder analyses because the mode of completion does not allow respondents or telephone interviewers to use a coder ( $n = 30$ ).



names necessitate that the elementary/secondary school databases be updated regularly, and some U.S. locations can have an extensive list of possible zip codes from which to choose. Only 4 percent of text strings for the postsecondary institution coder were upcoded, an equal percentage of text strings from the major coder were upcoded, and 2 percent of text strings for the traditional occupation coder were upcoded.

Upcoding rates, overall and by mode of completion for each coding form, are shown in Table C-23.

**Table C-23. Percentage of uncoded survey responses that were upcoded for B&B:08/18 field-test respondents, by mode of completion and coder form: 2017**

Coder form	Overall	Mode of completion		
		Web nonmobile	Web mobile	Telephone
Postsecondary institution	4.3	3.7	6.1	5.0
Major or field of study	0.8	0.4	1.3	4.5
Zip code	7.7	4.4	15.7	0.9
Occupation (traditional)	1.8	1.3	3.6	#
Occupation (predictive)	11.2	9.8	13.0	18.0
K–12 school	7.8	8.6	10.1	12.6

# Rounds to zero.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. A coder form's percent upcoded is the percentage of open-ended text responses left uncoded during the survey that were assigned a valid code by project staff during data editing.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

Recommendations for implementing occupation coders in the full-scale survey are presented in section C.4.2.

**Recoding.** Twenty-five percent of major and occupation codes assigned in the survey were randomly selected for review for quality control purposes. The randomly selected codes were “recoded;” that is, staff upcoded the open-ended response and compared the result to the code assigned during the survey. The recoding process resulted in one of three outcomes: (1) the staff-assigned code *agreed* with the original selected in the survey, (2) staff *changed* the code from what was originally selected in the survey, or (3) the original text string provided by the respondent was too vague to code independently, or *uncodable*.

Overall, for the major code review, coding staff agreed with the respondent's choice from the survey 93 percent of the time. For the occupation code review, coding staff agreed with 92 percent of responses chosen in the survey from the traditional occupation coder and with 92 percent of responses chosen in the survey from the predictive occupation coder.

Of the occupation codes assigned by the traditional occupation coder that were selected for recoding, 8 percent were assigned a different code by expert coding staff, compared with only 1 percent of the codes assigned by the predictive occupation coder ( $t = 2.76, p < .01$ ). Among the uncodeable text strings, 7 percent of the strings from respondents who used the predictive coder were too vague to upcode, significantly more than from respondents who used the traditional coder, none of

which were too vague to upcode ( $t = -3.43, p < 0.001$ ). Recoding rates across mode of completion were not significantly different for either occupation coder.

A practical interpretation suggests that, although respondents tend to code occupations more accurately with the predictive coder, resulting in a higher rate of intercoder reliability, the traditional coder is more likely to capture strings that can later be upcoded by project staff. This result may be due to respondents editing their text strings as they search and interact with the immediate results provided in the predictive coder. Therefore, ways to improve the functionality of the predictive occupation coder will be investigated before full-scale implementation.

Of the major codes selected for recoding, 7 percent were assigned a different code by expert coders. Fourteen percent of majors coded on mobile devices were recoded to a different code, compared to only 6 percent of majors coded on nonmobile devices; however, this agreement rate was not statistically different across modes of completion. Improvements to the mobile mode experience for respondents are ongoing, particularly for coders.

Table C-24 shows the results of recoding conducted by the coding staff for the major and occupation coders.

**Table C-24. Percentage of recoded survey responses for B&B:08/18 field-test respondents, by recode outcome, mode of completion, and coder form: 2017**

Coder form	Recode agreed				Code changed				Uncodable			
	Overall	Mode of completion			Overall	Mode of completion			Overall	Mode of completion		
		Web nonmobile	Web mobile	Telephone		Web nonmobile	Web mobile	Telephone		Web nonmobile	Web mobile	Telephone
Major	92.7	94.2	85.7	100.0	7.3	5.8	14.3	#	#	#	#	#
Occupation (traditional)	92.3	92.3	95.0	81.8	7.7	7.7	5.0	18.2	#	#	#	#
Occupation (predictive)	91.6	91.3	89.2	100.0	1.3	1.9	#	#	7.1	6.7	10.8	#

# Rounds to zero.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. Twenty-five percent of codes assigned to the Major and Occupation coder forms during the survey were randomly selected for "recoding." The recoding process resulted in one of three outcomes: (1) the staff-assigned code *agreed* with the original selected in the survey, (2) staff *changed* the code from what was originally selected in the survey, or (3) the original text string provided by the respondent was too vague to code independently, or *uncodable*. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

### C.3.3.5 Help Text

In the B&B:08/18 field-test survey, respondents and telephone interviewers could select a help button provided on each survey screen to obtain a pop-up box containing question-specific help text. The text contained definitions of key terms and phrases used on the screen and other explanations to help clarify and standardize meaning for respondents. For example, the item *Born in the United States (or U.S. territory)* (B18FUSBORN) asks, “Were you born in the United States [including Puerto Rico or another U.S. territory]?” The corresponding help text stated “United States territories and outlying areas include American Samoa, the Federated States of Micronesia, Guam, Midway Islands, Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands. If you were born in any of these, indicate Yes. If you were born on a U.S. military base outside of the U.S., please indicate Yes.”

In addition to the help button that is available on every screen, some questions included embedded hyperlinks to the help text on specific terms or phrases in the survey question itself. This approach was used for terms or phrases most likely to require further explanation. Whether accessed with the help button or through a hyperlink, each question had unique help text to help respondents answer the question appropriately. Overall, the help-text access rate was less than 1 percent across all forms in the B&B:08/18 field-test survey.<sup>13</sup>

The form-level rate of help-text access was analyzed by survey completion mode to identify questions or modes that may have been problematic for users. Nineteen survey questions administered to at least 10 respondents had an overall help-text access rate of 1 percent or greater. Seventeen of the nineteen survey questions meeting this help-text access threshold in Table C-25 included embedded hyperlinks to the help text.<sup>14</sup> This result suggests that including help-text hyperlinks in survey questions can prompt respondents to review help text on forms that collect difficult or complex information. Generally, forms administered at least 10 times did not present significant differences in help-text access rates across modes of completion.

The form *Retirement accounts* (B18FRETIR1–3) collected information about five types of retirement savings accounts and had high help-text access rates. This form was

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<sup>13</sup> Overall help-text access rates were calculated by total number of times help text was accessed across all interview forms, divided by total instances all forms were administered. Form-level help-text access rates were calculated by totaling the number of times respondents or telephone interviewers accessed a form’s help text, divided by the total number of instances a form was administered. Only forms administered to 10 or more respondents were included in the help-text analysis.

<sup>14</sup> The two exceptions, B18FINWHO and B18DCURTL01, did not contain hyperlinks in questions or response options.

included in the questionnaire format experiment, assigning respondents one of three formats for selecting responses that applied to them: check all that apply and two forced-choice formats (yes/no and no/yes). Detailed analysis of the questionnaire format experiment is described in section C.3.3.8. The check-all-that-apply format (B18FRETIR1) produced the highest observed help-text access rate of any form in the field-test survey, 11 percent, which was significantly greater than the observed help-text access rate of 4 percent for the yes/no option of the same question (B18FRETIR3) ( $\chi^2(1, N = 1) = 6.94, p < .01$ ). The help-text access rate for the no/yes option of the question was also lower than the rate for the check-all-that-apply format, at 6 percent (B18FRETIR2), although not significantly different from the rates for the check-all-that-apply format or the yes/no option.

The form *Amount of private loans* (B18CPRIVAMT) had the next highest help-text access rate at 9 percent. This question used a numeric text box to collect the total amount of private loans taken out for any education a respondent has received since the last survey. There were no significant differences between modes of completion. Three questions that collect information from K–12 teachers about loan forgiveness awareness, grant programs, and formal induction programs had the next highest help-text access rates, likely due to the specificity of the programs referenced. *Aware of TEACH Grant Program* (B18ETCHGRT) produced an overall help-text access rate of 6 percent, and *Aware of loan forgiveness programs* (B18ELNFRGV) produced an overall help-text access rate of 5 percent. Finally, *First teaching job: participated in formal teacher induction program* (B18EIND) had an overall help-text access rate of 5 percent. There were no significant differences in help-text usage between modes for this group of questions.

The remaining 12 questions had overall help-text access rates of less than 4 percent each. Table C-25 shows the survey questions with the highest rates of help-text access.

**Table C-25. Number of B&B:08/18 field-test respondents administered an item and percentage that accessed help text, by mode of completion and item: 2017**

Item	Item label	Mode of completion							
		Overall		Web nonmobile		Web mobile		Telephone	
		Number administered to	Percent of help text accessed	Number administered to	Percent of help text accessed	Number administered to	Percent of help text accessed	Number administered to	Percent of help text accessed
B18FRETIR1	Retirement accounts: experimental check-all	250	10.6	160	6.7	70	20.8	10	#
B18CPRIVAMT	Amount of private loans	30	9.4	20	10.0	10	14.3	10	#
B18ETCHGRT	Aware of TEACH Grant Program	100	6.3	60	9.4	20	#	10	#
B18FRETIR3	Retirement accounts: experimental no/yes grid	240	5.9	160	6.2	60	#	20	22.2
B18ELNFRGV	Aware of loan forgiveness programs	100	5.3	60	7.8	20	#	10	#
B18EIND	First teaching job: participated in formal teacher induction program	40	5.0	30	7.4	10	#	#	#
B18CLICFILT	Had vocational or technical certification or occupational or industry license	730	4.1	500	4.6	190	1.6	50	8.3
B18FRETIR2	Retirement accounts: experimental yes/no grid	250	4.0	170	3.5	60	1.7	20	15.8
B18CFEDDEF	Ever defaulted on federal loans	470	2.8	310	2.6	130	3.1	30	3.1
B18CPRIVSTAT1	Private student loan status	80	2.4	50	4.1	20	#	10	#
B18AFINWHO	Type of adult in household sharing financial responsibilities	90	2.1	60	3.1	30	#	#	#
B18DNEGOTIAT	Since completing BA, negotiated salary/benefits at start of job	730	1.9	500	2.2	190	1.6	50	#
B18FHOMVAL	Current value of primary residence	470	1.9	330	2.1	120	1.7	30	#
B18CENRTDG01	Postbaccalaureate school 1: master's en route to doctoral	50	1.9	40	2.6	10	#	#	#
B18FLGBTQ	Sexual orientation	730	1.5	500	2.0	190	0.5	50	#
B18CPSTGRD	Attended for additional degree or certificate program since BA completion	940	1.4	630	1.9	230	#	80	1.3
B18CPRIVDEF	Ever defaulted on federal loans	80	1.3	50	2.2	20	#	10	#
B18DCURTL01	Jobs allow telecommuting	650	1.1	440	#	170	#	40	15.9
B18CELNSTAT1	Federal student loan status	490	1.0	320	1.6	140	#	30	#

# Rounds to zero.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. BA = bachelor's degree. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). Values are based on items administered to at least 10 respondents who completed the full or mini survey. Sample sizes rounded to the nearest 10.

Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

### C.3.3.6 Survey Item Nonresponse Rates

The rate of nonresponse for individual items in the survey is used to identify potentially burdensome items and better understand the experiences of respondents completing the survey. In the B&B:08/18 field-test survey, total nonresponse rates were calculated for items administered to at least 10 respondents. Items from forms included in the questionnaire format experiment (detailed in section C.3.3.8) were excluded from this analysis.

Results from the item-level nonresponse analysis demonstrated that 15 items, not including the questionnaire format items, had more than 10 percent of values missing. These 15 items were contained in the following nine survey questions: *Postbaccalaureate school 2* (B18CSCH02), *Postbaccalaureate school 3* (B18CSCH03), *Postbaccalaureate school 3: date first attended* (B18CFENR03), *Employer 6: Starting hours and salary* (B18DEMPLOYA06), *Employer 6: Current/ending hours and salary* (B18DEMPLOYC06), *Activity while not currently employed* (B18DEMPOTH), *Household income ranges 2016* (B18FINEST), *Spouse's income ranges 2016* (B18FINSRA), and *Spouse's student loans: monthly payment* (B18FSPLNPY). Table C-26 summarizes the item-level nonresponse for these items.



**Table C-26. Number of B&B:08/18 field-test respondents administered an item and percentage of missing responses, by mode of completion and item: 2017**

Item	Item label	Overall		Mode of completion					
				Web nonmobile		Web mobile		Telephone	
		Number administered	Percent missing	Number administered	Percent missing	Number administered	Percent missing	Number administered	Percent missing
B18CSCHST02	Postbaccalaureate school 2: school name, entered string	50	21.6	40	30.6	10	#	#	#
B18CSCH02	Postbaccalaureate school 2: school name, coded	50	17	40	15.8	10	16.7	#	33.3
B18CSCH03	Postbaccalaureate school 3: school name, coded	10	14.3	10	15.4	#	#	#	#
B18CFENMY03	Postbaccalaureate school 3: date first attended	10	14.3	10	15.4	#	#	#	#
B18DEMPAMTB06	Employer 6: starting average hours per week	10	15.4	10	20	#	#	#	#
B18DEMPIMC06	Employer 6: ending salary timeframe	10	15.4	10	20	#	#	#	#
B18DEMPAMTD06	Employer 6: ending average hours per week	10	15.4	10	20	#	#	#	#
B18DEMPTRV	While not currently employed: traveling	50	12.8	30	15.6	10	12.5	10	#
B18DEMPVOL	While not currently employed: volunteering or unpaid internship	50	10.6	30	15.6	10	#	10	#
B18DEMPSCH	While not currently employed: enrolled in school	50	10.6	30	15.6	10	#	10	#
B18DEMPDIS	While not currently employed: unable to work because of disability	50	10.6	30	15.6	10	#	10	#
B18DEMPMP	While not currently employed: temp laid off/ on leave/waiting to report to work	50	10.6	30	15.6	10	#	10	#
B18FINEST	Respondent's income ranges 2016	20	31.3	10	18.2	#	50	#	66.7
B18FINSRA	Spouse's income ranges 2016	10	20	10	#	#	50	#	100
B18FSPLNPY	Spouse's student loans: monthly payment	150	13.3	100	12.6	40	14.3	10	15.4

# Rounds to zero.

NOTE: Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A respondent's mode of completion (web, telephone, or paper) is the mode associated with their final session. This table includes only those items that were administered to at least 10 respondents. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.



The item with the highest level of item nonresponse was *Respondent's income ranges 2016* (B18FINEST; 31 percent). This question asks respondents to provide their income range via radio-button selection. This nonresponse conversion item is only administered to respondents who did not provide a numeric response via text box on the previous household-income question (B18FINCOM). Of respondents who were administered this item, 31 percent did not provide an answer, and another 19 percent responded, “don’t know.” This rate of nonresponse is higher than that of the similar nonresponse conversion item for *Spouse's income ranges 2016* (B18FINSRA), for which 20 percent of respondents did not provide an answer, and another 20 percent responded, “don’t know.” These nonresponse rates and “don’t know” rates demonstrate the difficulty of providing financial data and refusal on the part of respondents who do not wish to provide financial data, particularly for spouses and partners.

The item with the next highest level of item nonresponse was *Postbaccalaureate school 2: school name, entered string* (B18CSCHST02; 22 percent), which records a text string entered by the respondent or telephone interviewer on the postsecondary institution coder. Of respondents who were administered this item, 22 percent did not provide an answer. However, all respondents with a missing postbaccalaureate school name string coded the school, meaning that the school’s numeric IPEDS identifier was collected during the survey. Conversely, 17 percent of the text strings for the second postbaccalaureate school coder that were not coded in the instrument by the respondent could not be upcoded by project staff (B18CSCH02). For more information about the functionality of coders and upcoding, see section C.3.3.4.

The survey captured high-level employment information for all employers since the last survey, starting with the current or most recent employer. Field-test results included information on a maximum of seven employers. *Employer 6: starting hours and salary* (B18DEMPLOYA06) and *Employer 6: current/ending hours and salary* (B18DEMPLOYC06) collected salary, salary time frame, and average hours worked per week for the respondent’s sixth employer reported in the survey. Of the respondents who were administered these forms, 15 percent did not complete the numeric text box for starting average hours per week (B18DEMPAMTB06), did not enter the ending or current average hours per week (B18DEMPAMTD06), and did not select a time frame range from a radio-button list of options for the ending salary (B18DEMP'TIMC06). The cognitive burden of recalling salary and hour information for a sixth employer after describing five other employers may have contributed to the higher nonresponse rate for these items.

Finally, the survey collected information on the activities of respondents while not employed. The form, *Activity while not currently employed* (B18DEMPOTH), contained a

yes/no grid list of activities. Eleven percent of respondents left each of the items missing, except for the *traveling* response item (B18DEMPTRV), which was left missing by 13 percent of respondents. Given that these items collect data about behavior at the time of the survey, they are unlikely to result in high levels of cognitive burden. One possible explanation for this rate of nonresponse is that the form did not provide an option for “other activity.” In this case, nonresponse suggests that, faced with a series of options that did not apply, individuals reacted by not selecting any radio buttons at all, rather than quickly selecting “no,” with minimal deliberation, for all items.

Item-level nonresponse rates were also examined by mode of completion for the 15 survey items with more than 10 percent of values missing. Item-level nonresponse rates did not differ across modes for any of the 15 survey items included in this analysis. Only items included on the form *Activity while not currently employed* (B18DEMPOTH) and the item *Spouse’s student loans: monthly payment* (B18FSPLNPY) had adequate numbers of potential responses for comparisons across all three modes of completion, although no statistically significant differences in nonresponse were observed.

### C.3.3.7 Cognitive Testing Results

RTI, on behalf of NCES, contracted with Shugoll Research to conduct qualitative in-depth interviews with respondents who graduated with their bachelor’s degree between July 1, 2006, and June 30, 2007, to obtain feedback on some of the questions that were used in the B&B:08/18 field test. The field-test cognitive and usability testing provided an opportunity to test items that were either new to this B&B cohort or were improvements to prior-round items. The cognitive and usability interviews collected feedback on survey security and identity verification; new potential external data collection sources (e.g., LinkedIn and résumés); an expanded employment section that collected employment history for a 6-year period; and a background section that included items related to family formation, biological sex, gender identity, sexual orientation, and the impact of undergraduate education. Based upon results of the cognitive interviews, survey questions in the field-test instrument were revised to ensure quality, performance, and reliability of the items, as well as the overall usability of the survey.

Respondents were recruited by Shugoll Research using its consumer database of individuals in the Washington, DC area; respondents were recruited to represent a mix of undergraduate institutions and demographics. Shugoll Research also used a variety of other recruiting methods to enhance its consumer database. These methods included networking and referrals; e-mails to individuals in the database and

online screening; and a variety of social media outlets, including Facebook, Twitter, and LinkedIn.

Respondents participating in these interviews had to meet three requirements. Specifically, they

- must have completed the requirements for their bachelor's degree between July 1, 2006, and June 30th, 2007;
- must have been employed at some point since receiving their bachelor's degree; and
- must be over 18 years of age.

A total of thirty 90-minute, in-depth, virtual interviews were conducted between September 26 and November 29, 2016. The 30 interviews were broken out into the following segments:

- four interviews with respondents who had been K–12 teachers;
- four interviews with respondents who had an undergraduate major in a science, technology, engineering, or mathematics (STEM) field; and
- twenty-two interviews with respondents who were not K–12 teachers and did not have an undergraduate STEM major.

During the cognitive interviews, usability testing was conducted by allowing respondents to complete the survey either on a computer (e.g., desktop or laptop) or on a mobile device (e.g., smartphone or tablet). This allowed respondents to provide feedback on versions of the questions formatted for different devices. Shugoll Research used a remote cognitive interviewing/usability methodology in which respondents used their own computer or mobile device to complete the survey. Shugoll Research's web-based remote interviewing/usability solution included webcam technology; streaming video; and an audio connection to provide real-time, face-to-face interaction between the respondent and facilitator via a shared desktop on their computer. Technology checks were performed with respondents before each interview to minimize technological difficulty during the sessions.

Approximately half of the respondents used their computer to complete the survey, and the remainder used their mobile device. Respondents recruited for usability testing on a mobile device were sent a document camera so that live video of how the respondent proceeded through the mobile version of the survey was visible to the respondent, facilitator, and client observers. At the end of each interview, the

facilitator conducted a debrief to obtain feedback on how easy or difficult it was to use the computer or mobile device to answer the questions, and to ascertain ways the questions could be modified to improve mobile usability. Clients could log in and watch all interviews remotely.

**Findings from cognitive testing.** In general, respondents considered the survey easy to complete from both a usability standpoint and a content standpoint. They understood most terminology in the survey and thought the questions were clear. They made one overarching suggestion about the layout of the questions that used a scale for response options (i.e., strongly disagree, disagree, agree, strongly agree). Respondents felt the scales should be switched to go from positive to negative instead of negative to positive.

Additionally, respondents felt they would be more cooperative in taking the survey if they had more information about the purpose of the survey and how the information was going to be used. Respondents suggested that they be provided some of this information before they completed the survey so they would know why they were being asked to respond to so many questions and provide such detailed information about themselves. The remainder of this section details specific findings by form.

**Detailed findings from cognitive testing.** Figure C-3 shows the form with security questions used to ensure that the correct individual was invited to take the survey.

**Figure C-3. Screenshot of identity verification form: 2017**

Before we start the survey, we'd like your opinion on some questions regarding identity verification and external data sources.

First, take a look at these sample questions regarding identity verification below. Note that this is using hypothetical data, so please imagine data reflecting you and your life.

1. In order to verify that you are the JOHN DOE who was enrolled at at some point during the 2006-2007 school year, you must correctly answer a security question. Please enter the last four digits of your Social Security Number.

2. Have you lived on any of the following streets?

- ☐ Main Street
- ☐ Front Road Avenue
- ☐ Airport Road
- ☐ Magnolia Boulevard

3. From the list below, please select the option that correctly reflects the last four digits of your phone number:

- ☐ 7890
- ☐ 2340
- ☐ 6780
- ☐ 9120

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

This form was administered to everyone at the beginning of each interview. Many respondents said they had seen security questions like those on this form before and did not have any issues providing this information in the survey.

*"I am fine with this section; I think it is typical to any background check." (STEM, Computer)*

However, many also reported they did not understand why this information was needed for this survey, and it made some skeptical or nervous. Specifically, providing the last four digits of their Social Security number made some respondents uncomfortable. Some indicated they would prefer that the survey just confirm the last four digits of their Social Security number rather than asking respondents to provide them.

*"I am ok with the phone number part of the question because they can get that information easily. I am not really comfortable providing my social security number." (Teacher, Tablet)*

*"It takes away my anonymity so that my survey responses will be linked directly to me. I don't like that." (Other, Mobile phone)*

*“I am not sure about providing my social security number. I don’t really like providing it. I would like something explaining why they need my social security number and assuring me that they will not use it for any other purposes.” (Other, Tablet)*

Figure C-4 shows the form that asks respondents if they would be willing to share their LinkedIn data.

**Figure C-4. Screenshot of LinkedIn access request form: 2017**

Now we have some questions about external data sources.

Typically, the B&B survey takes about 35 minutes to complete, with the majority of that 35 minutes being the employment section. If given the option to securely log in to LinkedIn through our survey to reduce time to complete the employment section, would you do so?

By securely logging in to LinkedIn, we would have access to your LinkedIn data. We could then use that data within the survey to potentially reduce your time to complete the interview.

☐ Yes  
☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents who had a LinkedIn account were divided on whether their information on LinkedIn was up to date and comprehensive. Most respondents who said they would not provide access to their LinkedIn account said it was because they were not particularly active on LinkedIn or their information was not up to date. A few said they would have preferred to provide their résumé because it was more up to date and comprehensive.

*“No, I wouldn’t link my account because I don’t update my LinkedIn page. If I did link to it, it might save time, but I have also had experiences where it takes longer to import the information because of formatting.” (Teacher, Tablet)*

*“My LinkedIn is not exactly up-to-date. My job has been the same for 8 years and my job does not require networking. I would say my profile is pretty general.” (STEM, Computer)*

*“I do use LinkedIn. My profile is current but not very detailed; it is not anywhere near as detailed as my résumé.” (Other, Computer)*

Others said they were unwilling to provide LinkedIn access due to security concerns. They did not want to provide their username and password to a third party.

*“I wouldn’t want to allow you access to my profile because I wouldn’t know when you could cease having access to my account.” (Other, Computer)*



*"I don't feel safe giving my passwords to external sites. I wouldn't want to share my account with a third party." (Other, Computer)*

Figure C-5 shows the form asking respondents whether they uploaded their résumés.

**Figure C-5. Screenshot of résumé upload request form: 2017**

Within an email you received from Shugoll Research, there was a request for you to upload your resume. Did you upload a resume to the secure survey website?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

When asked if their résumé was current and up to date, they had an equal mixture of up to date résumés and those that were not. Respondents who said their résumés were not up to date reported that it was because they were not currently looking for new employment.

*"My résumé is not current because I am not looking for a job right now." (Teacher, Tablet)*

Others reported their résumé was not up to date and comprehensive because they tailored their résumé to only include job history that was relevant to their current field of interest and to limit their résumé to one page.

*"My résumé includes everything in education that I have done after college because that is my current field." (Teacher, Tablet)*

*"It doesn't have my entire history, but it's the majority of it. Based on the type of jobs I'm targeting now, I only include the relevant history. I want my résumé to be clear and concise and only one page, so I deleted some jobs during and right after college." (Other, Mobile phone)*

Respondents who decided not to upload their résumé before the interview stated it was because they felt uncomfortable providing their résumé without further explanation of how it would be used. Others did not want their personal information like phone number and e-mail address available in "cyberspace."

*"No, I wasn't comfortable with uploading it. If they needed something they could ask for it during the session. I don't want too much information like my phone number and e-mail out there in the world." (Other major, Tablet)*

Figure C-6 shows the form asking respondents to enter the zip code or city and state of their primary place of employment.

**Figure C-6. Screenshot of employer zip code form: 2017**

What is the ZIP code for the primary location where you work(ed)?

(If you do not know the ZIP code you can enter the city name. If you are still unable to find your ZIP code, click "ZIP Code not listed" and hit "Next.")

Employer zip code

☐ Location not in the United States or a US territory

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents who worked offsite or in a different location than their employer's headquarters tended to have a more difficult time providing the zip code. Similarly, those whose companies had more than one office had a difficult time providing the zip code, often stating they did not know the answer.

*"There's only one office for my company, but I'm not there much. I work all around the city so I had to think about it for a minute before providing my answer." (Teacher, Tablet)*

*"My company has multiple urgent care centers and I work at different ones so it's hard to know which zip code to enter." (STEM, Computer)*

*"It is not the only location; we have offices all over the country and I couldn't remember the zip code." (Other major, Computer)*

*"I didn't know it. If I was not doing the interview I would've Googled it. Not everyone is going to fit into this employment mold. My company is based in Wisconsin and I don't go to the headquarters." (Other major, Tablet)*

*"I don't live in the same city where I work. If I lived there too I'd remember more easily." (Other major, Tablet)*

*"It is not the only location; we have offices all over the country and I couldn't remember the zip code." (Other major, Computer)*

Others felt that the question was easy to answer, especially if they worked in a traditional office setting, but they did have to take extra time to think about the answer because they seldom received mail at the office.

*“It was relatively easy, but it did take me a minute since I don’t usually have to enter the zip code for my office.” (Other major, Tablet)*

*“I gave the zip code of my school only. It was easy to provide because I write the address often. This question could be difficult to answer if you wanted me to provide the main office address of the school district and not my school.” (Teacher, Tablet)*

*“My company has one other location in Maryland. It was pretty easy for me to answer.” (STEM, Tablet)*

Figure C-7 shows the form asking respondents to enter the month and year they began working at a particular employer.

**Figure C-7. Screenshot of employer start date form: 2017**

In what month and year were you first employed by this employer?

Starting month:

-Select one- ▼

Starting year:

-Select one- ▼

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

In general, respondents found this question easy to answer and were very confident in their responses.

*“No, I did not have any trouble. I just started in January.” (Other major, Computer)*

*“I had no trouble answering the question and I am very confident.” (STEM, Computer)*

However, a small number of respondents found this question slightly difficult to answer, particularly when there was a significant difference between their hire date and their start date.

*“I had to think about it. I was hired in July and processed, but I didn’t start teaching until August, so I didn’t know how to answer.” (Teacher, Tablet)*

*“I don’t know what to answer here. I interviewed and got offered the job in one month, but signed the contract and started working in a different month.” (Other major, Mobile phone)*

Figure C-8 shows the form asking respondents to enter the month and year they last worked at a previous employer.

**Figure C-8. Screenshot of employer end date form: 2017**

In what month and year were you last employed by this employer?

(If you are currently employed by this employer select the checkbox below).

☐ Currently employed by this employer

Ending month:

-Select one- ▼

Ending year:

-Select one- ▼

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents found the layout of this question to be somewhat confusing. Many did not notice the checkbox for “currently employed.” They would have preferred the survey directly ask them, “Are you still currently employed by this employer?” and, if “yes,” they would skip ending month and year, and if “no,” they would select ending month and year.

*“This question assumes you’re no longer employed, which is weird. First they should ask if you’re still employed there.” (Other major, Computer)*

Many believed this question was designed for those with a traditional job and did not necessarily fit people who held nontraditional jobs.

*“It was straightforward for my situation. I liked that it had the checkbox, this makes it simpler.” (STEM, Computer)*

Figure C-9 shows the form asking respondent whether they ever took an unpaid break longer than 1 month from a particular employer.

**Figure C-9. Screenshot of unpaid break in employment form: 2017**

Between July 2012 and November 2016, did you take any unpaid breaks from this employer that lasted longer than one month (i.e., your employment was not one continuous period)?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Generally, respondents did not have trouble answering this question. They provided examples of unpaid breaks that included maternity leave, unpaid medical leave, family medical emergency, and unpaid vacation.

*“It is asking if I took any time off during my employment history...anything that wasn’t paid time off.” (Other major, Computer)*

*“I think of taking time to care for a family member with medical issues, extended vacation without pay, the office shuts down and you get laid off or your contract ends.” (Other major, Mobile phone)*

*“It is asking if I took any breaks from my employment. Some examples are sabbaticals, maternity leave or unpaid vacation.” (Teacher, Tablet)*

*“It means any undocumented breaks in your employment history. Examples are leave without pay, illness, family medical emergency or maternity leave.” (STEM, Computer)*

Contractual employees and some teachers had trouble answering this question because they were not paid year-round. They felt the question was designed for people with traditional jobs versus nontraditional jobs.

*“My job doesn’t go in the summer since I’m a teacher so I’m not sure how to respond to this question. It’s not really a break though because you know you’re going back. After the summer I always get a new contract. So, I’m not really sure how to answer.” (Teacher, Tablet)*

Figure C-10 shows the form asking respondents to select the months they were employed by a particular employer. Figure C-11 shows the form asking respondents to select the months they were on an unpaid break from a particular employer.

**Figure C-10. Screenshot of months employed form: 2017**

Select which months you were employed by this employer.  
*(Please click the box containing the month you want to select. Selected months will be shaded blue.)*

2012	2013	2014
July	January	January
August	February	February
September	March	March
October	April	April
November	May	May
December	June	June
July	July	July
	August	August
	September	September
	October	October
	November	November
	December	December
Select all	Select all	Select all

2015	2016
January	January
February	February
March	March
April	April
May	May
June	June
July	July
August	August
September	September
October	October
November	November
December	
Select all	Select all

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

**Figure C-11. Screenshot of unpaid break in employment months form: 2017**

In this second version, select which months you took an unpaid break from this employer.

2012	2013	2014
July	January	January
August	February	February
September	March	March
October	April	April
November	May	May
December	June	June
July	July	July
August	August	August
September	September	September
October	October	October
November	November	November
December	December	December
Select all	Select all	Select all

2015	2016
January	January
February	February
March	March
April	April
May	May
June	June
July	July
August	August
September	September
October	October
November	November
December	
Select all	Select all

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

When asked which version of the question they preferred, many respondents preferred the first version, which asked which months they were employed, because they felt it was more difficult to remember the timing of the unpaid breaks than the months in which they were employed. Respondents who took maternity leave were the exception; they felt it was easier to provide the months in which they took an unpaid break.

*“I preferred selecting the months I was employed over selecting the months I was not employed.”*  
(Teacher, Tablet)

*“I liked the first version that asked which months I was employed. I did not have trouble answering this question. I am 100 percent confident about when my unpaid break was.”*  
(STEM, Tablet)

These questions were difficult to answer for contractual employees because their jobs/projects were discontinuous. They were also uncertain of what to mark for “partial months.” Similarly, it was confusing for those who were self-employed and sometimes took breaks from their company.

*“I prefer the first version, but the overall question is complicated because I haven’t worked continuously. I am in promotions so I cannot remember every break. My job is contractual so some months I work and others I don’t.” (Other major, Tablet)*

*“The question was challenging because I was an independent teaching contractor so I did projects at different times. I am 90 percent sure I have my months right, but I might be a month off in some places.” (Teacher, Tablet)*

*“I thought this was a little overwhelming. I had to read it through several times to be able to answer. Do I count partial months? If I was employed for half the month it’s not clear exactly how to fill it out and they should have an instruction about that.” (Other major, Computer)*

*“If I go back to work on August 29th, do I click on the month of August? How do we handle partial months?” (Teacher, Tablet)*

Figure C-12 shows the form asking whether respondents considered a particular job to be part of their career.

**Figure C-12. Screenshot of job as part of career form: 2017**

When you were employed, did you consider this job to be part of a career you were pursuing in your occupation or industry?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents did not have any issues answering this question. They described “career” as long-term growth within connected fields, as opposed to “filler” jobs, which were just to pay the bills.

*“A career is a professional choice in a field or industry that is long-term. It can evolve and change, but it’s very intentional.” (Other major, Tablet)*

*“It’s asking whether I see this as a position I took just to have a job and pay the bills, or if it’s a stepping stone to my next position.” (Other major, Mobile phone)*

*“A career is long-term employment or pursuit of a particular goal or field.” (Teacher, Tablet)*

*“Where I am working now is helping further my career goals. A career is a profession within your occupational industry.” (STEM, Tablet)*

They also defined a career as something they were interested in and passionate about.



*“A career is your passion, something you enjoy doing with potential to progress.” (Other major, Computer)*

Figure C-13 shows the form asking respondents to report their earnings and average hours worked per week for a particular employer at the start and end of the job.

**Figure C-13. Screenshot of employment earnings and hours form: 2017**

We are interested in learning more about your employment with this employer and how it may have changed.

What was your starting and ending...

	Starting Job	Same as Starting Job?	Ending Job
Salary (including bonuses, tips, and commissions)	\$ <input type="text"/> <input type="radio"/> Per hour <input type="radio"/> Per week <input type="radio"/> Per month <input type="radio"/> Per year	<input type="checkbox"/>	\$ <input type="text"/> <input type="radio"/> Per hour <input type="radio"/> Per week <input type="radio"/> Per month <input type="radio"/> Per year
Average hours per week	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

This question was difficult to answer for those in nontraditional employment settings (e.g., contract work, teaching, sales, event planning) whose average work hours and salaries varied dramatically from week to week. For example, some contract workers would have entered their salary “per day” if that had been an option. Many respondents said they just provided their “base salary” because their bonuses, tips, and commission varied greatly, and they did not know how to provide this information.

*“I wish they had a per day option because I was a contract worker and that is how my contract was set up. I work 30 hours per week - it is a full-time job. I am paid for a full 8 hours even if I only worked ½ days.” (STEM, Tablet)*

*“My salary was never set because I was in sales. So, I knew my base salary, but my total salary ranged so much because of bonuses and commission. This is very hard to answer.” (Other major, Tablet)*

*“For contractual workers or part-time workers, there’s a lot of variance for those people. The question seems to be developed for full-time employment, not contractual or part-time. They need a separate box saying, ‘it varies’ that people can check and then have an open text field for people to enter details for their specific situations.” (Other major, Mobile phone)*

Additionally, some respondents had a hard time providing the average number of hours worked. In some instances, people worked 30 to 37.5 hours per week and considered that full-time employment. Others worked varying hours that were different from week to week, which made it difficult to answer the question.

*“I work at an urgent care center and my hours vary so much per week that it’s very hard to answer. For people who do shift work, this would be confusing to answer.” (STEM, Computer)*

*“I struggled with the average hours per week. I’m exempt from overtime pay so I didn’t know how to answer. I really work more than 40 hours per week, but I’m only supposed to report 40 hours, so what would I put here?” (Other major, Computer)*

The “starting job” and “ending job” language was somewhat confusing. Those who were currently employed with a particular company did not understand why it said “ending job” instead of “current.”

*“I don’t understand ‘ending job.’ I think it means when you ended your employment. It is not clear, especially because I am still employed. I think you should use words like ‘current’ and ‘when employment ended’ instead of ‘starting job’ and ‘ending job.’” (Teacher, Tablet)*

*“It was confusing. At first, I thought it was asking about a previous company because of the language ‘starting job’ and ‘ending job.’ It needs to be clearer about which job it is asking about.” (Other major, Computer)*

Many respondents were confused by the format of this question, particularly the “Same as starting job” middle column. They did not understand why this was there or what its purpose was. Some felt providing ranges would have made the question easier to answer.

*“The middle column is weird. I’m not really sure what it’s meant to do and the placement is weird. Would it auto fill the ‘ending job’? I’m not sure. I think they could just have salary and hourly ranges and that would work better.” (Teacher, Tablet)*

*“You could make it easier to read by deleting ‘same as starting job’ because it’s throwing me off.” (Other major, Computer)*

Some respondents did not like that they could not use a decimal for partial hours worked per week or a comma when providing their salary. They felt there should have been formatting instructions for how the survey would accept salary and hour numbers.

A small number of people did not feel comfortable providing their current salary information. They felt this information was private and confidential.

*“The question is intrusive and I don’t want to answer it.” (Other major, Computer)*

*“I don’t like the salary question and I don’t want to answer it.” (Other major, Tablet)*

**Employment characteristics.** Respondents were asked a series of questions about their first employer after completing their bachelor’s degree requirements (shown in Figure C-13 through Figure C-21). These questions collected information about the name of that employer, salary and hours, and zip code for that employer. They were asked for feedback on the entire series.

Start dates, starting salary, and zip code were all difficult pieces of information for respondents to provide for their first employer after college because it was around 10 years ago. They were not confident in their answers to these questions.

*“It was hard. I had to reference my résumé because I didn’t know the answers. I am confident in my answer only because I looked at my résumé. The most difficult items to answer were the zip codes and dates of employment.” (STEM, Tablet)*

*“I had to look up the zip code. The salary I know is correct because the start and end salary were the same. The start and end dates are probably 75 percent accurate.” (STEM, Computer)*

*“I remembered the company name, but the dates were a little foggy. I’d say it was about 50 percent accurate.” (Other major, Computer)*

*“I really had to think about it because it’s been over 10 years. The start date, starting salary and zip code were the most difficult.” (Other major, Tablet)*

Most respondents felt that providing this level of detail was “a lot” of information, and they would have preferred more information about why they were providing this type of information.

*“It’s a lot of information to provide. I would want to know more about the purpose of why I had to provide this information to keep filling it out.” (Teacher, Tablet)*

*“It reminds me of filling out job applications. I don’t know what reason I should provide all of this information. I’d be frustrated and irritated by this point. If I was getting something out of the survey I would be more open to doing it. I need an incentive that’s motivating or I’d just quit.” (Other major, Tablet)*

Respondents also felt that it would have helped to have access to their résumé to fill out this level of detailed information for each employer since 2011, especially zip codes. Employment dates and zip codes were among the most difficult pieces of

information for respondents to provide. They felt recent employer information was much easier to report than historical employment information.

*“I would’ve grabbed my résumé or looked up the zip codes if we weren’t doing the interview. The hardest parts were the months worked. Because I am a contract teacher, it was so variable. I was fine providing the detail, it didn’t make me uncomfortable.” (Teacher, Tablet)*

*“It was difficult for me to remember my past employment dates since 2011. Listing the previous employers at the top is helpful. I had to look up the zip codes on my smartphone. I am not sure about my confidence regarding the information given, I like things to be accurate and it kind of made me feel like I was lying since I wasn’t sure.” (STEM, Tablet)*

*“Maybe the survey should ask about three jobs max since 2011. Some people work multiple jobs per year, so this is a lot of information to make people enter.” (STEM, Computer)*

*“For the more recent jobs it was easy, but the further back it goes the harder it gets.” (Other major, Computer)*

*“It wasn’t complicated to provide the information, but it would’ve been helpful to have my résumé in front of me. The most difficult information was the employment dates because I am contracted. The level of detail is a lot of information and I feel like at this point they should offer me an incentive to take the survey.” (Other major, Tablet)*

Figure C-14 shows the form asking respondents to select an occupation category using a traditional coder format.

**Figure C-14. Screenshot of traditional coder for employment form: 2017**

Next, we're going to ask you to search and classify your job in two different ways.

In this first version, we need your job title and job duties for your employment at RTI International so we can select the closest match from the options returned.

1. - Type in job title:   
(Example: accountant or cosmetologist)

2. - Type in job duties:   
(Example: examine financial records or beauty services)

3. - LAST click:

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Figure C-15 shows the form asking respondents to select an occupation category using a predictive text coder format.

**Figure C-15. Screenshot of predictive text coder for employment form: 2017**

Now, in this second version, we only need your job title for your employment at RTI International. Enter your job title and select the closest match from the options returned.

(If you are unable to find a close match for your job title, click "Job title not listed" and hit "Next.")

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents were asked to provide their job title and duties in two different ways: a traditional coder (B18DOCC01) and a predictive text coder (B18D1OCC01). The traditional coder required respondents to provide complete text strings of their job title and job duties and then wait for a list of results to populate. The predictive coder produced results while the respondent was typing. Many respondents had trouble with the occupation coders.

Most people were very unsatisfied with the selections provided and felt that none of the options truly matched their occupation. They felt they had to “settle” and select something in order to move on to the next question because they could not find the “match” they were looking for. Additionally, respondents wanted to be able to enter their own occupation description rather than trying to fit it into precoded categories. The survey design made some feel “pigeon-holed.”

*“I didn’t find an occupation that accurately matched. I am an art instructor for young kids. There was only one option for a postsecondary art teacher, not a more general art teacher. The first version was tedious; the list was several pages long. The second version didn’t have a long list, the drop down was easier.” (Teacher, Tablet)*

*“I can’t really find something that actually fits. The education ones don’t really apply. I don’t know how much to keep scrolling and reading. There are just so many options; it’s a lot of stuff. I don’t understand why all of these choices came up.” (Teacher, Mobile)*

*“I am a patent examiner, and my occupation was not in either version. When the first version didn’t have it, I tried to play with the words in the second version. I used key words like ‘intellectual property’ and it still wasn’t there. If both versions stay like this they will need to be more accurate and have more choices to reflect all of the jobs in the world that each person does. If not, they should have a text box so that someone like me could fill in my job title. If I wasn’t on the phone with you, I would feel frustrated because I would leave both blank and then they would think I just skipped the questions.” (STEM, Computer)*

*“I’m frustrated. I even went back and changed the search terms to something more basic. I’m surprised that what I entered is not the first option to populate on the list. It was a lot to scroll through.” (Other major, Computer)*

*“I was able to find something similar to what I do in both versions. I didn’t have a preference for either version. The functionality is useful in that it provides options for you, but there should be a blank text box option if you can’t find your exact occupation.” (Other major, Computer)*

Mobile device functionality for these questions varied for respondents. Many had trouble selecting options at the bottom of the scroll list. They could see and read these options but were unable to select them. One respondent did not even notice that there were options to scroll through and select because they were not visible on the phone screen.

*“When I scrolled down on my phone I could see ‘job title not listed,’ but I physically could not click on that option. Also, sometimes on my phone it was hard to see that there were lots of job descriptions to scroll through and select so I might have missed this part.” (Other major, Mobile phone)*

When asked which version of the occupation coder they preferred, there seemed to be an equal split of those that preferred version 1, the traditional coder (B18DOCC01) and those that preferred version 2, the predictive text coder (B18D1OCC01). Those who preferred version 1 stated it was because version 2 was too general and did not provide enough detail, and it was easier to find their occupation in version 1. One respondent stated that, although the layout of version 2 was easier on his/her phone, version 1 provided clearer results.

*“Version one was easier because version two is so general. In version one I liked that it listed out detailed descriptions.” (Other major, Computer)*

*“The second version has too many questions and drop downs you have to go through if you can’t find your occupation.” (Other major, Mobile phone)*

*“Considering the layout on my phone, the second way was far easier, but the first way provided better results.” (Other major, Mobile phone)*

Those that preferred version 2 mentioned they were overwhelmed by version 1 because it included a lot of text and the options were not in alphabetical order.

*“I felt overwhelmed and irritated by the first option. It took up a huge amount of space and had way too much text. And the order was not alphabetical.” (Other major, Tablet)*

Respondents were asked to provide their employer’s industry in two ways: radio button and then open-ended coder where they could type in their response and select the industry from the results returned. Figure C-16 shows the first part of a two-part form asking respondents to select an employer industry. Figure C-17 shows the second part of the two-part form. Figure C-18 shows an alternative form asking respondents to select an employer industry using a predictive text coder.

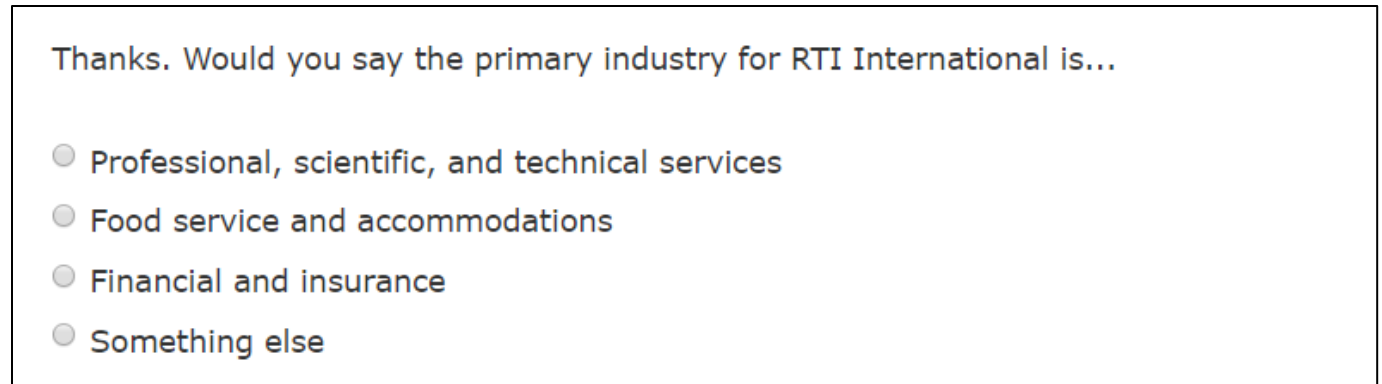
**Figure C-16. Screenshot of first part of two-part employer industry form: 2017**

Next, we're going to ask you to classify the industry for RTI International in two different ways.

In this first version, would you classify the primary industry for RTI International as...

- ☐ Education
- ☐ Healthcare
- ☐ Retail Sales
- ☐ Government
- ☐ Something else

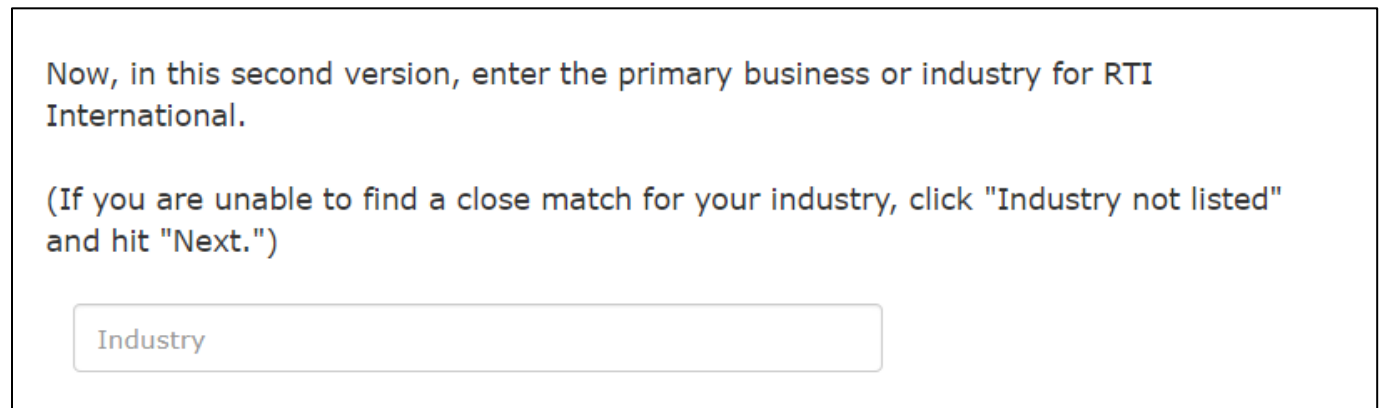
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

**Figure C-17. Screenshot of second part of two-part employer industry form: 2017**

Thanks. Would you say the primary industry for RTI International is...

- ☐ Professional, scientific, and technical services
- ☐ Food service and accommodations
- ☐ Financial and insurance
- ☐ Something else

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

**Figure C-18. Screenshot of predictive text coder for employer industry form: 2017**

Now, in this second version, enter the primary business or industry for RTI International.

(If you are unable to find a close match for your industry, click "Industry not listed" and hit "Next.")

Industry

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Generally, respondents had difficulty with these industry questions. Most people were very unsatisfied with the selections provided, much as they were with the occupation coder, and felt that none of the options truly matched their industry. They felt they had to “settle” and select something to move on to the next question. Additionally, respondents wanted to be able to enter their own description of the industry instead of trying to fit it into precoded categories.

Although some respondents found the radio-button version to be the quickest of the two, they felt the industry categories were outdated and limited, specifically on the radio buttons.

*“I was able to find it in both, but ‘educational services’ is a weird option for teachers. It is less clear in the second version, so I guess I prefer the first one.” (Teacher, Tablet)*



*“I couldn’t find as close an industry as I would like. ‘Educational services’ is a broad option; to me it sounds more like text book designers. The second version was easier.” (Teacher, Tablet)*

*“In the first version I was able to find it, but ‘healthcare’ isn’t totally accurate for a nurse. Both are equally as difficult.” (STEM, Tablet)*

*“There is an issue...I can’t click on ‘Industry not listed’ on my tablet so I have to click on something.” (Other major, Tablet)*

*“I went with something that was close, but nothing was exact. In the second version I tried to type ‘non-profit,’ but that wasn’t one of the options.” (Other major, Computer)*

*“I only found my industry in the first version. I don’t like the second version where you had to type it in. And how is that even helpful if you have to select ‘not listed’? There should be more options to choose from. These questions are not helpful. There are so many industries out there, how is this helpful to have such limited options?” (Other major, Mobile phone)*

*“I missed that the second version was a drop down and I had to select something. When the keyboard on the phone is up, it makes the viewing portion of the screen really short and it’s hard to see. This is definitely hard to navigate on your phone. When you close the keyboard it like automatically selects the one you were last on, even if that’s not the one you want to select.” (Other major, Mobile phone)*

Figure C-19 shows a form asking respondents to describe employment characteristics using a yes/no format. Figure C-20 shows a form asking respondents to describe employment characteristics using a five-point agreement (Likert) scale format.

**Figure C-19. Screenshot of yes/no employment characteristics form: 2017**

Next, we're going to ask you a question about some characteristics of your employer in two different ways.

In this first version, did RTI International provide...

	Yes	No
Opportunities to grow and develop	<input type="radio"/>	<input type="radio"/>
Appropriate recognition for your work	<input type="radio"/>	<input type="radio"/>
Career guidance	<input type="radio"/>	<input type="radio"/>
Adequate resources and supports	<input type="radio"/>	<input type="radio"/>
An environment of diversity and inclusion	<input type="radio"/>	<input type="radio"/>

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

**Figure C-20. Screenshot of agreement (Likert) scale employment characteristics form: 2017**

Now, in this second version, please indicate how much you agree with the following statements.

Did RTI International provide...

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Opportunities to grow and develop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriate recognition for your work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career guidance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adequate resources and supports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An environment of diversity and inclusion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Most respondents preferred the five-point scale (B18DDEVX01) question because it allowed for more nuances in their responses. However, several people would have preferred that the scale be reversed and start with “strongly agree.”

*“I prefer the 5-point scale. It is more exact. Some of the items on the list cannot be answered with ‘yes’ or ‘no’ except maybe for ‘adequate resources and supports’ – but the rest should be on a scale.” (Teacher, Tablet)*

*“The ‘yes/no’ feels too strong or too final. The 5-point scale gives more diversity to your answer.” (Other major, Computer)*

*“I like the second version, but I think ‘strongly agree’ should be on the left. It should read from left to right. The first version doesn’t allow for any gray area, it has to be 100 percent either way.” (Other major, Tablet)*

*“The first version is simple, but there really needs to be some more scale points like ‘don’t know’ or ‘not sure.’ The second version makes more sense because a binary ‘yes/no’ doesn’t always fit.” (Other major, Tablet)*

*“It’s easier to answer the first one, but the second one is more detailed and is best for this survey because people can provide different degrees in their answer.” (STEM, Computer)*

A few others preferred the yes/no (B18DDEV01) because it was “quicker,” but indicated it was not the most accurate.

*“As a respondent I like ‘yes’ or ‘no’ because it is easier, but as a data collector I would think the scale version is better for gathering data.” (STEM, Tablet)*

Some respondents interpreted “environment of diversity and inclusion” to mean an environment that is inclusive of many different backgrounds (e.g., age, race, gender, disabilities, socioeconomic, level within the organization, etc.) and opinions or ideas. Most did not have trouble with the “diversity” part of the question, but some struggled to understand the meaning of “inclusion.”

*“An environment of diversity and inclusion means employees/ students of a variety of different cultures, races, socioeconomic and educational backgrounds. It is a place that values differences in opinions.” (Teacher, Tablet)*

*“An environment of diversity and inclusion is racial and socioeconomic diversity and inclusion. It a place where everyone in the company feels important.” (Other major, Computer)*

*“It means diversity in terms of age, gender, sexual orientation, race, personality, etc. It’s keeping everybody included.” (Other major, Tablet)*

*“An environment of diversity and inclusion means that diversity is encouraged and that everyone is included. No one is singled out.” (Other major, Mobile phone)*

Figure C-21 shows a form asking respondents to describe employment duties using a yes/no format.

**Figure C-21. Screenshot of employment duties form: 2017**

As a/an Education Analyst at RTI International, did you...		
	Yes	No
Supervise the work of others?	<input type="radio"/>	<input type="radio"/>
Participate in hiring and/or firing decisions?	<input type="radio"/>	<input type="radio"/>
Participate in setting salary rates for other employees?	<input type="radio"/>	<input type="radio"/>

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents interpreted “supervise the work of others” to mean that there were employees who report to them whose work they were responsible for reviewing.

*“It means supervising other employees who work under me or report directly to me.” (Teacher, Tablet)*

*“Providing guidance for those who work under me and fostering their career growth.” (STEM, Computer)*

*“It is reviewing an employee’s work and giving that person feedback.” (Other major, Computer)*

*“Overseeing employees’ duties throughout the day; like completion of projects, etc.” (Other major, Computer)*

*“It means you’re responsible for delegating tasks and ensuring their completion. You make sure people under you uphold certain standards and are doing what they should be doing.” (Other major, Tablet)*

Some teachers were not sure how to answer this question because they technically supervise the work of students, but most do not supervise other teachers.

*“It’s sort of difficult to answer this as a teacher. I do supervise the work of students, so I’d say ‘yes,’ but I don’t supervise other teachers.” (Teacher, Tablet)*

Figure C-22 shows a form asking respondents to describe the level of autonomy they experienced in a particular job.

**Figure C-22. Screenshot of employment level of autonomy form: 2017**

Which of the following statements best describes your job as a/an Education Analyst at RTI International?

- ☐ Someone else decided what I did and how I did it
- ☐ Someone else decided what I did, but I decided how I did it
- ☐ I had the freedom in deciding what I did and how I did it
- ☐ I was basically my own boss

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Most respondents selected “Someone else decided what I did, but I decided how I did it.” They said they were given defined tasks or objectives, but they often had the freedom to decide how to complete the tasks or what path to take to reach the objectives.

*“The school decides the curriculum and the timing of the school year, but I decide how to present it to students.” (Chose option 2) (Teacher, Tablet)*

*“I am assigned cases, but the way I approach the cases is my choice. There is some level of supervision that watches over me.” (Chose option 2) (STEM, Computer)*

*“Based on the consulting aspects of my job, I gather input from employees and clients and build systems based on that input.” (Chose option 2) (Other major, Computer)*

*“With my company you are given instructions on how to do each job, but you can adjust various tactics to get a better result.” (Chose option 2) (Other major, Tablet)*

*“This is a little tricky. I’m given a lot of freedom, but I do have certain things that I have to get done, but it’s up to me to get the tasks done however I see fit.” (Chose option 2) (Other major, Mobile phone)*

*“I was a nurse supervisor so I was given authority to make decisions and delegate tasks.” (Chose option 3) (STEM, Tablet)*

*“I don’t have complete autonomy, but my company does promote an entrepreneurial spirit.” (Chose option 3) (Other major, Computer)*

Figure C-23 shows a form asking respondents whether demands at home had slowed down their progress in their professional activities.

**Figure C-23. Screenshot of effects of demands at home form: 2017**

During your employment at RTI International, did demands at home slow down progress on your professional activities?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents interpreted “demands at home” to include family obligations: taking care of children, sick parents, and marital problems.

*“Demands at home’ mean family obligations, transportation issues, parenting or spousal issues.” (STEM, Tablet)*

*“Examples include having young kids at home, keeping the house running, parenting or emotional demands with a spouse. And these things may have kept somebody from pursuing development at work.” (Other major, Tablet)*

*“These are things that pop up in your personal life that are time consuming. A wedding, pregnancy or caring for a family member are some examples.” (Teacher, Tablet)*

*“Maybe you have children or parents to take care of who might have an illness and it has resulted in decreased productivity at work.” (Teacher, Tablet)*

Respondents also interpreted “slow[ed] down progress” to mean that they were unable to dedicate the time needed to advance in their career or that they had been inhibited in moving forward in their career.

*“Things at home are not allowing me to devote the time I need to devote to the job and I have to say ‘no’ to things that could help me advance.” (Other major, Mobile phone)*

*“Not being able to commit to extra work so you can’t go above and beyond. It could be looked at as a lack of one’s commitment to their job.” (Other major, Tablet)*

Some interpreted “professional activities” to mean their day-to-day job responsibilities, while others interpreted it to mean activities above and beyond day-to-day activities, like work dinners, training, and continuing education.

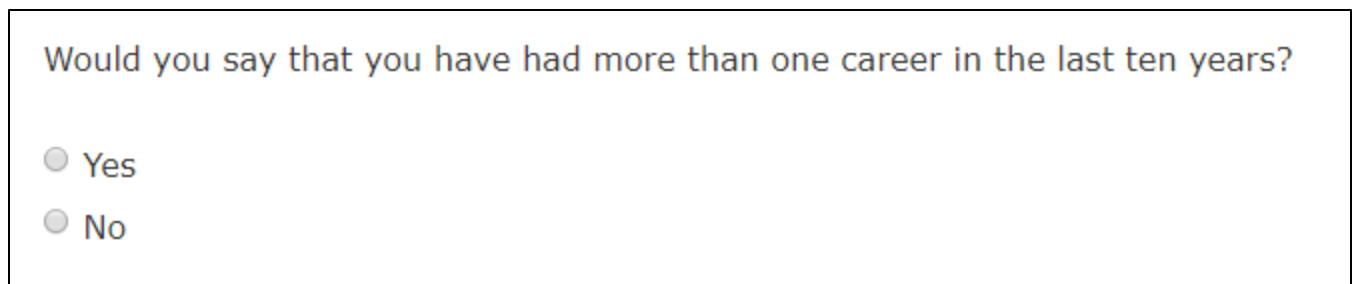
*“‘Professional activities’ is not your actual job; its extracurricular things (e.g. work dinners).” (Teacher, Tablet)*

To respond, people thought about their current personal situation and determined whether or not they felt it had slowed them down at work.

*“I thought about my current situation and I have minimal demands at home right now.” (Other major, Computer)*

Figure C-24 shows a form asking respondents whether they had more than one career in the last 10 years.

**Figure C-24. Screenshot of number of careers form: 2017**



Would you say that you have had more than one career in the last ten years?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

There was some confusion about this question. Some interpreted it as asking whether they had multiple “job titles.” Others interpreted it as asking whether they had changed “job fields,” “industry,” or “career paths.”

*“It’s asking if I’ve made a career change. I haven’t changed; I’ve been a teacher for 10 years.” (Teacher, Tablet)*

*“The question is asking if I have pursued a different career path within my long-term career goal in the last 10 years. I thought about teaching art education (my field) and that has been my only career, even though I have had some other money-maker jobs.” (Teacher, Tablet)*

*“If you’ve been employed by more than one employer or if you had different career paths like finance and sales.” (STEM, Tablet)*

*“Have I pursued more than one field of employment? I answered by not including being a student as part of a career or a job that doesn’t count toward the career.” (STEM, Computer)*

*“I started out as an interior designer, but then re-evaluated what I wanted to do and so I started down a different track.” (Other major, Mobile phone)*

*“It’s asking if you have changed paths in different industries in the last 10 years.” (Other major, Computer)*

*“Maybe it’s asking how many titles I’ve had in the last 10 years? I’m not really sure.” (Other major, Computer)*

When deciding on their response, most thought about whether all the jobs they held had been in the same industry or field. If not, they answered “more than one.”

Figure C-25 shows a form asking respondents whether they expected to be doing the same type of work in 3 years.

**Figure C-25. Screenshot of expectation of continuing in employment field form: 2017**

Do you expect to be doing the same type of work three years from now?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Many respondents did not understand what this question was asking and felt the term “same type of work” was ambiguous. The language in the survey alternated primarily between “career,” “job,” or “industry.” Then this question asked about “same type of work,” and respondents were unclear about what this term really meant. They were unsure whether “same type of work” was the same as career. Because of this, responses to this probe varied greatly.

*“It is asking if I plan to be in a position similar to the one I hold now. It is slightly different than a career. Like if I stayed in education, but not art education, I would still consider myself in the same career, but not the same type of work.” (Teacher, Tablet)*

*“The wording was a little weird so I wasn’t sure. I guess it’s ‘Will I be doing work within the same industry?’” (Teacher, Tablet)*

*“It means either the same job or the same field. No, it is not the same as a career.” (STEM, Computer)*

*“It means similar responsibilities to what I am doing now. It could be the same as career, but not necessarily...I am not sure.” (Other major, Computer)*

*“Will you be doing the same duties or in the same industry altogether? They are not necessarily the same. ‘Type of work’ may be talking about day-to-day duties.” (Other major, Computer)*

*“No, it’s not the same thing. A career is long-term, but I could have the same job. I don’t know, this is confusing.” (Other major, Computer)*

Figure C-26 shows a form asking respondents whether they ever negotiated compensation when beginning a new job.

**Figure C-26. Screenshot of ever negotiated compensation form: 2017**

Since completing your bachelor's degree requirements, have you ever negotiated salary or benefits when beginning a new job?

☐ Yes

☐ No

☐ Not applicable

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Teachers and government employees answered “no” or “not applicable” because they were not allowed to negotiate salary or benefits. They had to accept the offer that was given to them.

*“Not applicable. I can’t negotiate salary or benefits as a teacher for public schools. They just give me an offer and I say ‘yes’ or ‘no.’” (Teacher, Tablet)*

*“There has never been an opportunity in my field. In education you have set pay scales that are universal. It is based on cost of living and school board determining salary.” (Teacher, Tablet)*



*“I do contract work so I can’t negotiate. They just tell me, ‘This is your pay.’” (Other major, Tablet)*

*“No, I haven’t negotiated; it is not applicable because it is a government job.” (STEM, Computer)*

Those in other fields had at some point negotiated salary or benefits. Some negotiated through a temporary employment agency, and some used Google to find out what the going rates were for their industry. Others used current salary to leverage when interviewing with a new company and provided information about their salary expectations. Of those who had negotiated their salary in some way, many felt the best time to negotiate salary and benefits was when starting a new role or position.

*“I always feel when you start a position that’s the best time to negotiate. There is a threshold or range that is in their budget, but you should negotiate. I negotiate all the time.” (STEM, Tablet)*

*“I negotiated based on my experience and what the national salary average is for my industry. I used statistics to get the appropriate salary to ask for.” (STEM, Computer)*

*“I researched what others were making in the industry plus factored in my degree and experience and used this to negotiate.” (Other major, Mobile phone)*

*“I give them a salary number when they ask what I’m looking for and I leverage what I’m currently making now to get a higher salary.” (Other major, Computer)*

Figure C-27 shows a form asking respondents whether they have ever requested a raise or promotion from any employer since completing their bachelor’s degree requirements.

**Figure C-27. Screenshot of ever requested raise or promotion form: 2017**

Since completing your bachelor's degree requirements, have you ever asked for a raise or promotion from any employer?

☐ Yes

☐ No

☐ Not applicable

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents who were teachers or government employees reported that they could apply for a promotion but could not ask for one.

*"N/A—same as the salary question. I can apply for a promotion, but cannot ask for one. I have to fill out an application, and yes I have applied." (Teacher, Tablet)*

*"No, it is not the way the system works. Raises are obtained through higher education or getting your Master's." (Teacher, Tablet)*

*"No, because what I have to do is clearly delineated to get to the next pay level since I work for the government." (STEM, Computer)*

A few said that, when they asked for a raise or promotion, they prepared a list of talking points about their accomplishments and contributions to help them justify to their employer why they were deserving of a raise/promotion.

*"Yes, I know what I am worth so when it is time for reviews I do ask for a raise or I switch jobs. I always think about how I have helped the company advance and explain it to them. I have asked at multiple jobs." (STEM, Tablet)*

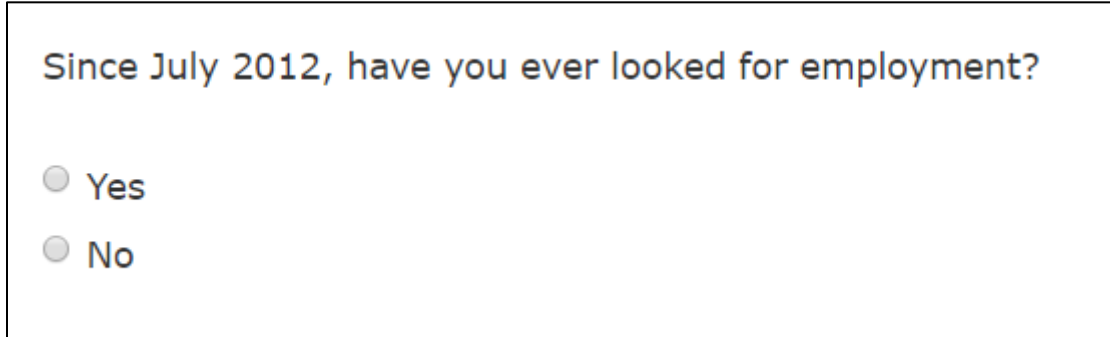
*"I've asked for a promotion after a certain amount of time at a company or if I've done a certain amount of work to achieve certain goals. I would tell my boss those accomplishments." (Other major, Computer)*

*"I asked at my annual review. I prepared a list of talking points looking at my accomplishments, contributions and salary comps [comparable values] to justify what I'm worth." (Other major, Computer)*

*"I was asked to take on an additional job or more responsibility in addition to my current role, so I asked for more money." (Other major, Mobile phone)*

Figure C-28 shows a form asking respondents whether they had ever sought employment since July 2012.

**Figure C-28. Screenshot of ever sought employment form: 2017**

The image shows a screenshot of a survey form. The question is "Since July 2012, have you ever looked for employment?". Below the question are two radio button options: "Yes" and "No". The "Yes" option is selected, indicated by a filled grey circle.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents were asked if they had any examples of types of activities that could be considered as “looking for employment.” Many considered the following types of activities as having “looked for employment”:

- searching job boards and various internet sites;
- submitting résumés;
- talking to recruiters;
- attending job fairs;
- networking with friends;
- looking for jobs in other departments;
- updating their résumé and their LinkedIn profile;
- taking interviews;
- contacting a temp agency; and
- going to school-district websites looking for openings (teachers).

*“Looking at job postings, applying on different websites, looking at job fairs.” (Teacher, Tablet)*

*“Taking interviews, applying to multiple schools, looking at other school district websites.” (Teacher, Tablet)*

*“Looking at online job boards, Craigslist, looking at other places on the internet with the intent to change jobs.” (STEM, Computer)*

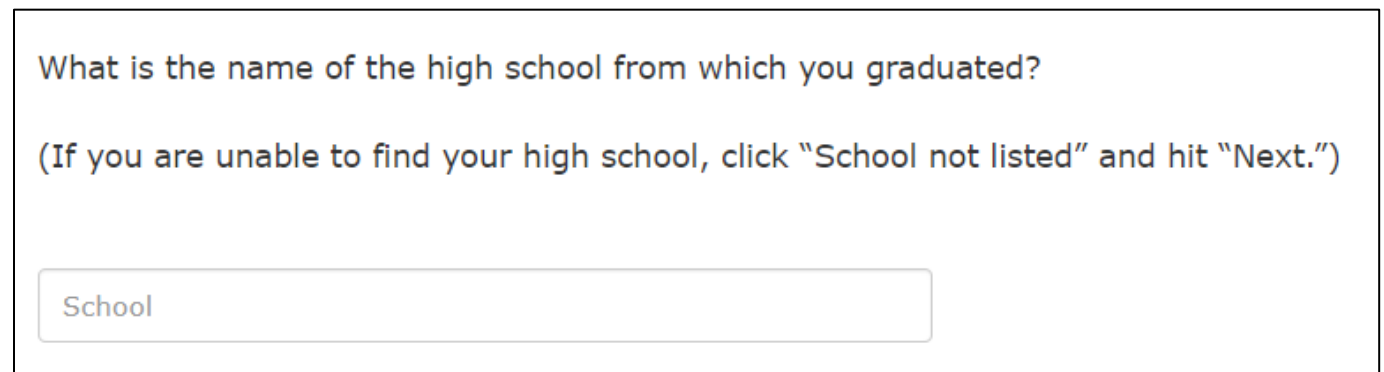
*“Word-of-mouth networking, career job search engines, online websites, posting my résumé online, attending open houses/job fairs.” (STEM, Computer)*

*“Scouring job listings online, speaking to people in your professional network, networking events, talking to Career Services.” (Other major, Computer)*

*“Participating in phone or face-to-face interviews, soliciting companies with my résumé, any active searching.” (Other major, Mobile phone)*

Figure C-29 shows a form that used a predictive text coder format to ask respondents the name of the high school from which they graduated.

**Figure C-29. Screenshot of high school predictive coder form: 2017**



What is the name of the high school from which you graduated?

(If you are unable to find your high school, click “School not listed” and hit “Next.”)

School

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Most respondents did not have any issues providing a response to this question. However, one respondent noticed that there were names of schools in the drop-down menu that were clearly not high schools, and they found it frustrating that they had to scroll through schools that did not qualify.

Many liked that when they started entering the name of their high school the rest of the responses began to autofill. Respondents also liked that the address was shown in the drop-down menu so they could verify they were selecting the right school. Additionally, one respondent would have preferred to search by city and state first and then put the school name in to limit the relevant choices appearing in the drop-down menu.

*“I liked that the options popped up so I didn’t have to type the full name of the school.” (Teacher, Tablet)*

*“It had the information I was looking for and it was accurate.” (STEM, Tablet)*

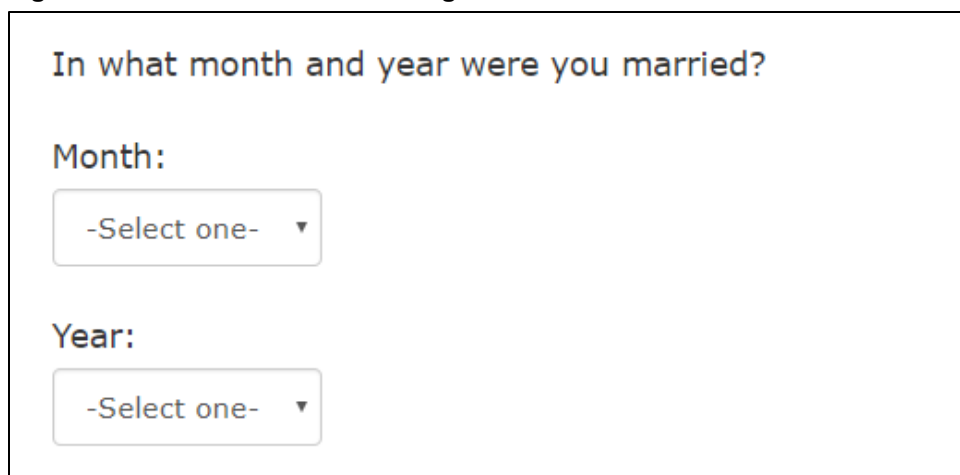
*“The search function was good. I liked that it auto populated before I got halfway through typing the name of the school.” (Other major, Tablet)*

*“It worked nicely. My high school is not a common school, but I liked that it narrowed down the list to only two choices and then I confirmed by checking the address.” (Other major, Computer)*

*“I like that it shows the address in case you’re not sure.” (Other major, Mobile phone)*

Figure C-30 shows a form asking respondents the month and year they were married.

**Figure C-30. Screenshot of marriage date form: 2017**

The image is a screenshot of a web-based form titled "In what month and year were you married?". Below the title, there are two sections. The first section is labeled "Month:" and contains a dropdown menu with the text "-Select one-" and a downward arrow. The second section is labeled "Year:" and also contains a dropdown menu with the text "-Select one-" and a downward arrow. The form is enclosed in a thin black border.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Many respondents questioned the purpose of this question and often asked why it was relevant. They did not understand what it had to do with their employment or education history. One respondent was asked to provide the month and year she was divorced, which she felt was totally inappropriate.

*“It was very specific...surveys don’t usually ask how long you’ve been married.” (Teacher, Tablet)*

*“It is a random question. I didn’t really want to answer it. They should tell me why they need it.” (Other major, Tablet)*

*“It’s sort of a weird question. What does this have to do with the survey? It makes me a little paranoid.” (Other major, Computer)*

*“I guess it’s ok, but at first I was wondering if I really needed to share this information. What is the survey for?” (Other major, Computer)*

*“What month and year were you divorced?’ This is too prying and inappropriate.” (Other major, Phone)*

Figure C-31 shows a form asking respondents their gender assigned at birth.

**Figure C-31. Screenshot of sex assigned at birth form: 2017**

These next few questions will help us better understand the experiences of people of all sexual orientations and gender identities.

What sex were you assigned at birth (what the doctor put on your birth certificate)?

☐ Male

☐ Female

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents did not have any issues understanding this question and did not have issues answering the question themselves, but some felt it might bother other people to answer the question. A few respondents assumed that this question was designed for those who were transgender and had changed genders from the one they were born at birth.

*“They are asking sex at birth not your gender. It doesn’t bother me because I am a woman and was born a woman, but it might bother someone else.” (Teacher, Tablet)*

*“It’s asking exactly what it says...what gender were you born as?” (Teacher, Tablet)*

*“The question would be for someone with a gender identity situation, whether you identify as a male or female.” (STEM, Computer)*

*“It is asking my birth gender and it provides clarity for those who have changed their gender.” (STEM, Tablet)*

*“It is 2016 so it clarifies what sexual orientation is.” (Other major, Computer)*

*“It’s asking what’s on your birth certificate.” (Other major, Computer)*

*“This is the first time I’ve seen this question phrased this way. It’s more gender sensitive.”*  
*(Other major, Mobile phone)*

Figure C-32 shows a form asking respondents their gender using a check-all-that-apply format.

**Figure C-32. Screenshot of gender identity form: 2017**

What is your gender?

Your gender is how you feel inside and can be the same or different from your biological or birth sex.

(Please check all that apply.)

- ☐ Male
- ☐ Female
- ☐ Transgender, male-to-female
- ☐ Transgender, female-to-male
- ☐ Genderqueer or gender nonconforming, or some other gender
- ☐ Not sure

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Several respondents did not understand why this question was necessary for the survey and thought it was irrelevant. Some said this question was a “little extreme” and “none of your business.”

*“This question is a bit extreme.” (Other major, Computer)*

*“How is this relevant? How is this important? What is this survey for anyway? This is no one’s business.” (Other major, Computer)*

Some respondents liked the definition provided; however, a few stated that they did not agree.

*“Yes, this definition is something I knew. The definition is pretty comprehensive and I agree with it. It’s inclusive.” (Teacher, Tablet)*

*“I disagree with the definition. Gender is not something we choose or how we feel.” (Other major, Mobile phone)*

*“I don’t necessarily agree with the definition.” (STEM, Computer)*

Many respondents understood what “transgender” meant but had trouble understanding what “genderqueer” meant.

*“Transgender means you were born one sex but you identify with a different gender.” (Teacher, Tablet)*

*“I haven’t heard of ‘genderqueer.’” (STEM, Tablet)*

*“Transgender means the person identifies with a gender other than what they were born with.” (Other major, Tablet)*

Figure C-33 shows a form asking respondents their sexual orientation using a radio-button format.

**Figure C-33. Screenshot of sexual orientation form: 2017**

Do you think of yourself as...

- ☐ Lesbian or gay, that is, homosexual
- ☐ Straight, that is, heterosexual
- ☐ Bisexual
- ☐ Another sexual orientation
- ☐ Don't know

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Many respondents questioned the purpose of this survey item and wanted to know why it was relevant. They did not understand what sexual orientation had to do with their employment or education. Some even felt this question was too personal.

*“This is a strange question to ask.” (Other major, Computer)*

*“How does this pertain to the survey?” (Other major, Computer)*

*“I can’t believe these questions are on here.” (Other major, Computer)*

*“This is an interesting question. I don’t have a problem with it, but what do they need this for? It has nothing to do with my job.” (Other major, Tablet)*



*“This is asking too much. The last two questions are too personal. You don’t need to ask people’s sexual orientation.” (Other major, Mobile phone)*

When answering the question, respondents seemed to understand what the question was asking, and some thought “asexual” and “hermaphrodite” were missing from the list options.

*“This is what I identify myself to be.” (Other major, Tablet)*

*“I answered based on my desires. I’m married to a woman.” (Other major, Mobile phone)*

*“I chose my answer because I am bisexual; I’ve considered myself bisexual for the past 11 years. ‘Another sexual orientation’ covers most everything that is not on the list, but I think ‘asexual’ is pretty big so it should be on the list too.” (Teacher, Tablet)*

*“None of the terms are unfamiliar to me. ‘Hermaphrodite’ may be missing from the list.” (STEM, Tablet)*

*“‘Asexual’ is missing.” (Other major, Computer)*

Figure C-34 shows a form asking respondents what proportions of family members, friends and social acquaintances, and supervisors and coworkers were aware of their sexual orientation.

**Figure C-34. Screenshot of awareness of sexual orientation form: 2017**

Of the following groups of people, how many of these people are aware of your sexual orientation (meaning they are aware of whether you consider yourself straight, gay, etc.)?

	Most	Some	None
Members of your immediate family (e.g. family and siblings)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People you socialize with (e.g. friends and acquaintances)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People you work with (e.g. supervisors and coworkers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

In response to this question, several respondents mentioned that the gender preference series of questions seemed intrusive. They felt these questions did not pertain to a study about education and employment history.

*“These questions do not pertain to career and education. Sexual orientation has nothing to do with this subject matter.” (Other major, Computer)*

*“This is pretty intrusive depending on the lifestyle you are choosing to live.” (Other major, Computer)*

*“Again, what do you need this for? You said this was an educational survey, how will you use this information?” (Other major, Tablet)*

*“I would totally shut down here. I don’t want to answer this stuff. This is no one’s business. There should be an ‘NA’ category so I can just move on to a different question.” (Other major, Mobile phone)*

Some respondents did not personally have a problem answering the question because they felt they were part of the majority demographic (straight); however, they could see how this question could be upsetting or intimidating to others. Several respondents felt there should be an option for “all” on the scale.

*“I am fine with it because I don’t have a situation that would be an issue, like I am not in the closet.” (STEM, Computer)*

*“I am fine to answer this, but I can see where this might be difficult for someone else depending on their background.” (Other major, Computer)*

*“I am a straight, white woman, so it is easy for me to answer. For me it is not a problem.” (Teacher, Tablet)*

*“It’s weird that there’s not an ‘all’ answer option. If I was uncomfortable with my sexuality it might intimidate me to answer this, or I might just lie and you would get data that is not accurate.” (Other major, Computer)*

Many respondents said they did not talk about their sexuality at work and felt this aspect of the question was inappropriate.

*“To answer the question, I thought about a specific example of all of the people in my life. I don’t purposely hide my bisexuality, but I don’t necessarily talk about it to my coworkers or family.” (Teacher, Tablet)*

*“People know me and my dating background so I guess it’s fine. It’s easier for me to answer this compared to someone who has a different sexual orientation than what people perceive as ‘normal.’ It shouldn’t matter if employees and co-workers know my sexual orientation.” (Other major, Tablet)*

Figure C-35 shows a form asking respondents the months and years of birth of their dependent children.

**Figure C-35. Screenshot of dependent children’s birth dates form: 2017**

	Date of Birth	
	Month	Year
Dependent 1	- Select one - ▼	- Select one - ▼
Dependent 2	- Select one - ▼	- Select one - ▼

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Only a few respondents received this question, but they felt the layout was fine. Of those who received this question, some reported they would only feel OK providing the information if they knew it was an important study. Others felt uncomfortable providing this level of detail about their children.

*“Providing this information is fine with me after all of the other information I’ve had to provide. I have no issues with the layout.” (STEM, Computer)*

*“The layout is pretty clear.” (STEM, Tablet)*

*“I don’t know why the month is necessary. Why is that important?” (Other major, Computer)*

*“I think this is overkill. Providing the number of dependents is sufficient or ask for their ages, but providing the month and year they were born is overkill.” (Other major, Tablet)*

*“This makes me uncomfortable. It’s too much detail.” (Other major, Mobile phone)*

Figure C-36 shows a form asking respondents the months and years that their dependent children became financially dependent on them. For each child, there is an option to check a box indicating that the date the child became financially dependent is the same date as the child's birth.

**Figure C-36. Screenshot of date children became financially dependent form: 2017**

For each dependent child, we would like to know when he or she became financially dependent upon you. If he or she became dependent upon you at a time other than his or her birth (through adoption, foster care, etc.) please indicate the month and year he or she became your dependent.

	Date dependent child became financially dependent		
	Same as date of birth	Month	Year
Dependent Child 1	<input type="checkbox"/>	- Select one - ▼	- Select one - ▼
Dependent Child 2	<input type="checkbox"/>	- Select one - ▼	- Select one - ▼

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Only a few respondents received this question. Those that received this question understood what the question was asking, but some felt uncomfortable answering it. Examples of scenarios in which a child's dependency date would differ from his/her date of birth include if someone fathered a child they were not aware of, fostered or adopted children, or blended families.

*"This is too invasive. Why do you have to know if I have a foster or adopted child? It's really none of your business." (Other major, Computer)*

*"I guess an example would be if the child didn't live with you at first. I think this is too detailed and it makes me very uncomfortable. My suggestion is to not ask this question." (Other major, Mobile phone)*

*"The question is trying to find out when I became financially responsible for my kids. Some examples could include if someone didn't know they were the father of a child." (STEM, Computer)*

*“It is asking you to identify when the kids became dependents. For people with fostered or adopted children or blended families, these dates might be different from the child’s birthday.”*  
(STEM, Tablet)

Figure C-37 shows a form asking respondents whether they had ever taken paid or unpaid leave for the birth or adoption of a child, to raise a child, or for medical care for a child.

**Figure C-37. Screenshot of family and medical leave form: 2017**

Since July 2011, have you taken either paid or unpaid leave for any of the following reasons: the birth or adoption of a child, to raise your children, or the medical care of your children?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Only a few respondents received this question. Those who received the question did not have any issues understanding what the question was asking. Examples of paid or unpaid leave included maternity leave and medical leave for their child.

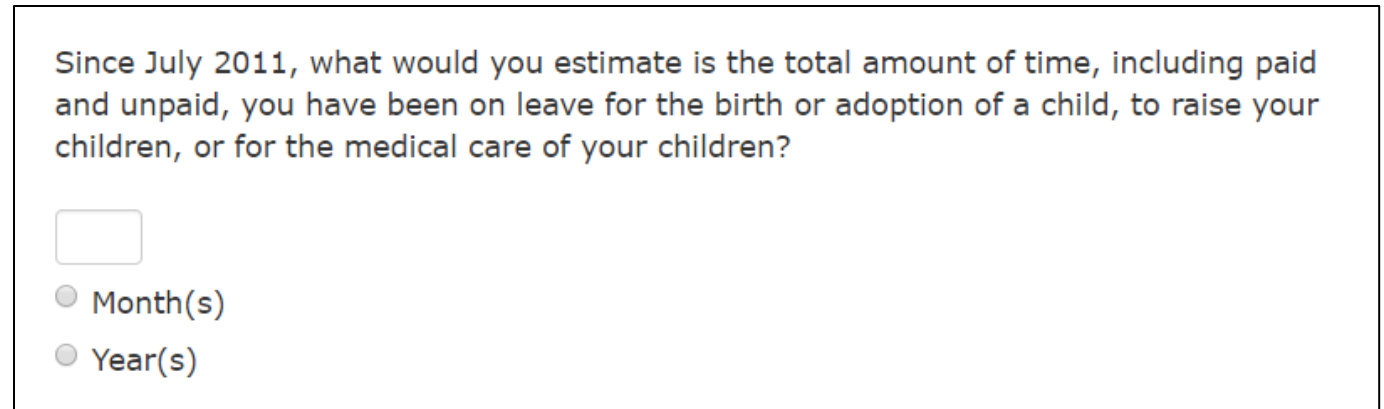
*“Taking your kids to the doctor, family medical appointments or family trips.”* (STEM, Computer)

*“I took time off after childbirth. I can’t think of any other situations.”* (STEM, Tablet)

*“Hospitalization for birthing a child.”* (Other major, Mobile phone)

*“If you had surgery, FMLA, time away for whatever reason. Again, why do they need to know this? It feels too personal—too nosy.”* (Other major, Computer)

Figure C-38 shows a form asking respondents how many months or years, in total, they used in paid and unpaid leave for the birth or adoption of a child, to raise a child, or for medical care for a child.

**Figure C-38. Screenshot of total time on family and medical leave form: 2017**

Since July 2011, what would you estimate is the total amount of time, including paid and unpaid, you have been on leave for the birth or adoption of a child, to raise your children, or for the medical care of your children?

☐ Month(s)

☐ Year(s)

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Of those who received this question, most understood what the question was asking. Women who reported on the maternity leave they took had an easy time answering this question. Others felt it was difficult to think back to 2011.

*“It was difficult remembering back that far; I just ball-parked it.” (STEM, Computer)*

*“It is easy because I went right back to work after the childbirth leave.” (STEM, Tablet)*

One respondent was not sure how to answer the question because the total time he took off for the birth or adoption of his child was less than 1 month. For example, he wanted to choose 2 to 3 weeks, but the only options provided in the question are months or years.

*“What if the time was less than one month? They don’t have enough options. I wanted to answer two to three weeks, but that wasn’t an option.” (Other major, Mobile phone)*

Figure C-39 shows a form asking respondents whether they have any other dependents they support financially.

**Figure C-39. Screenshot of other dependents form: 2017**

Do you have any other dependents that you support financially?

Dependents need not live with you. They may include siblings, parents, other relatives, or other individuals for whom you provide 50% or more of their financial support.

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Respondents did not have any problems understanding this question. Many provided examples of the type of expenses they would incur, including health care, rent or mortgage, groceries, car payments, tuition, utilities or household bills, clothing, and transportation. They also provided examples of who they thought about when answering this question, which included in-laws, parents, siblings, close friends, and cousins.

*“It is asking if there is anyone you support financially beyond kids. It was easy for me, but the explanation was helpful.” (Teacher, Tablet)*

*“If people are dependent on you for their own livelihood. Expenses would be rent, mortgage, food, household bills, car payments, any type of insurance.” (Teacher, Tablet)*

*“It includes everything like food, clothing, housing, utilities and transportation.” (STEM, Tablet)*

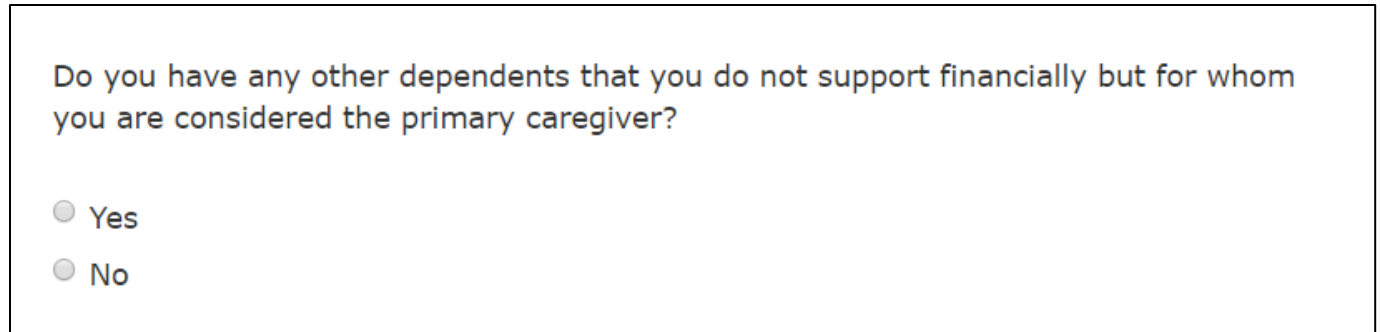
*“It is asking if there are people who are not your children who you support financially. Financial support includes daycare, food, and private school. I would include a family member who couldn’t work, siblings, parents or a spouse.” (Other major, Computer)*

*“I think it would be a car payment, education, lodging, clothes, food, daycare, medical expenses and health insurance. I would include siblings, parents, aunts and uncles, significant others, grandparents, children of a significant other if they didn’t live with us. I would exclude anyone that lives with me.” (Other major, Computer)*

*“Financial support would include private school, college, health insurance, car payments or a paying for a retirement home.” (Other major, Tablet)*

Figure C-40 shows a form asking respondents whether they have any other dependents that they do not support financially but for whom they are the primary caregiver.

**Figure C-40. Screenshot of dependents not supported financially form: 2017**



The screenshot shows a survey question within a black rectangular border. The question is: "Do you have any other dependents that you do not support financially but for whom you are considered the primary caregiver?". Below the question are two radio button options: "Yes" and "No". Both radio buttons are currently unselected.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

A few respondents found this question confusing. One respondent pointed out that she did not think she should have received this question since she had previously answered that she had no dependents. Others thought of elderly relatives, parents, children out of wedlock, or friends.

*"This might include a parent who needs non-financial or physical support. It would exclude anyone you support financially." (Teacher, Tablet)*

*"This would be someone who was dependent on you for your car, but not for finances." (Teacher, Tablet)*

*"An example would be if we had any other children and we did not give money to support them, but we are the primary caregiver." (STEM, Tablet)*

*"You're taking care of someone—like maybe if you're married to someone with a child that's not yours and you don't do anything financially, but you still help take care of them." (STEM, Computer)*

*"The question is asking if you support someone, but not financially. Perhaps helping someone under 18 make decisions, like an orphaned child of a friend or relative." (Other major, Computer)*

*"It's asking if there is anyone who you are a primary caregiver for...perhaps looking after them medically." (Other major, Computer)*



*“Maybe it would be relatives that depend on your time and help, but not your finances. An elder, or like a grandparent.” (Other major, Computer)*

*“It’s a weird question. It almost seems like a double negative or something. And I don’t understand why I got it since I said ‘no’ to having dependents earlier, so I don’t feel like I should have to answer it again.” (Other major, Computer)*

Figure C-41 shows a form asking respondents what behaviors they have undertaken as a result of the costs of their undergraduate education.

**Figure C-41. Screenshot of effects of undergraduate education costs form: 2017**

As a result of your financial costs for undergraduate education, have you...

(Please check all that apply.)

- ☐ Had to work more than desired
- ☐ Taken a job outside your field of study or a less desirable job
- ☐ Taken a job instead of enrolling for additional education
- ☐ Delayed buying a home
- ☐ Delayed getting married
- ☐ Delayed having children
- ☐ None of the above

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Many were OK with answering the question and generally understood what the question was asking. Some even thought it was a good, thought-provoking question. Some said it made them feel sad or angry, while others said the question was too personal.

*“The question is referring to your student loans and how it has affected the post-graduate choices you have made.” (Teacher, Tablet)*

*“I think it’s asking if you have any debt from college, whether you have had to make sacrifices or changed your ideal path.” (Teacher, Tablet)*

*“I’m fine with answering this question. It is relevant to what is going on in today’s economy and social situations.” (STEM, Computer)*

*"I felt angry answering this question. You go to school to advance your career, but you are taking out loans to do it that you will have to pay back and that can impact things." (STEM, Tablet)*

*"It is asking if due to financial obligations I have had to compromise in any way." (Other major, Computer)*

*"I am fine to answer it...it is a good question to ask." (Other major, Computer)*

*"It's about the repercussions of paying student loans or having fewer resources as a result of paying for your education and its impact on your personal life." (Other major, Computer)*

*"It made me a little sad to answer this. I'm just lucky that I only checked off two answers, but I know people who would have to check off all of them." (Other major, Mobile phone)*

To answer, respondents thought about their own situations and described the answer choices that were pertinent to their situation.

*"I thought about how I've had multiple jobs to make more income to pay off my loans. And I had to take a job outside of my field during the depression. More school would have been too much of a financial commitment so I didn't do that. And I did hold off on a house so that I can pay off my education debt first." (Other major, Computer)*

Figure C-42 shows a form asking respondents whether they think their undergraduate education was worth its cost and whether they think their graduate education was worth its cost.

**Figure C-42. Screenshot of perceived value of undergraduate and graduate education form: 2017**

Do you think your **undergraduate** education was worth its financial cost?

☐ Yes

☐ No

Do you think your **graduate** education was worth its financial cost?

☐ Yes

☐ No

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Many respondents had to think hard about their answer to this question. Some thought the question was difficult to answer because, whereas they understood what the word “worth” meant, measuring the worth of education was difficult to them.

*“Worth’ is what I got out of my education. Was the money spent worth the return on the investment?” (STEM, Tablet)*

*“Did all the pain pan out into something you’re proud of and would you do it again?” (STEM, Computer)*

*“Has it been financially worth it? Is the money I make worth what I paid for my education? I said ‘yes,’ but someone who went to a more expensive school may answer differently.” (Teacher, Tablet)*

*“Did the services and quality of the education match the price the school charged me?” (Teacher, Tablet)*

*“This was a little challenging. Were the trade-offs worth the debt? Has my degree helped me get to where I am and would I do it again? Has my degree added value?” (Other major, Tablet)*

Several respondents did not think their education was worth the financial cost. They felt they could have gotten a similar education for a lower cost. Others said it was worth the cost because a degree is a necessity in today’s job world.

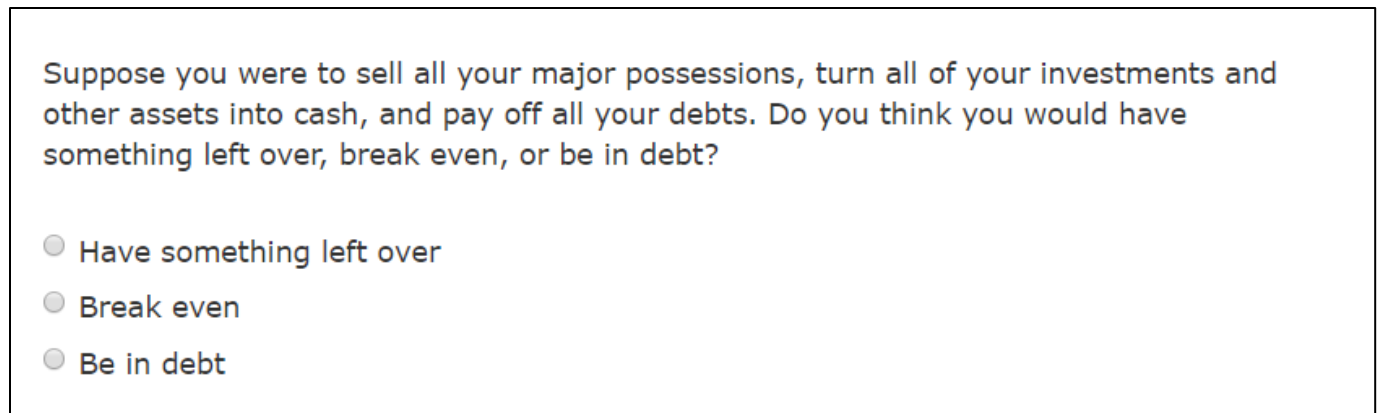
*“No, I do not think it was worth it. Looking at my situation with undergraduate education, I might not be as far in debt as some, but I still have to think about my debt and whether I could’ve gotten to the same place having gotten a public education.” (STEM, Tablet)*

*“I have mixed thoughts. I work with people who do not have a bachelor’s. But overall I think my education helps with things like networking.” (Other major, Computer)*

*“This is a difficult question to answer. It’s hard to measure if it’s worth it. Society values education, so you sort of have to suck it up and do it. But is it really worth all the debt? I don’t know. But because of societal pressures to get a degree, I answered ‘yes.’” (Other major, Computer)*

Figure C-43 shows a form asking respondents to imagine that they sold all their major possessions and investments and paid off all their debts. It then asks respondents whether they would have money left over, break even, or be in debt.

**Figure C-43. Screenshot of net assets and debt form: 2017**



Suppose you were to sell all your major possessions, turn all of your investments and other assets into cash, and pay off all your debts. Do you think you would have something left over, break even, or be in debt?

☐ Have something left over

☐ Break even

☐ Be in debt

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Most respondents found this question relatively easy to answer, although they often took a few minutes to think about their response. Many respondents chose the first response—“have something left over.” Many said their possessions were insignificant (few respondents currently own a house). When prompted to provide examples of major possessions, some considered clothes, jewelry, car, furniture, major electronics, and savings.

*“I gave a rough estimate. It is a little difficult because there is some math involved. I included my car, large furniture and TV.” (Teacher, Tablet)*

*“I don’t have too many major possessions. So...I guess my car, electronics, furniture, and jewelry. I don’t own a home or anything.” (Teacher, Tablet)*

*"It would include a house, cars, electronics, jewelry, tools and anything over \$500. I am 90 percent confident with my answer; it depends on how much I could sell my house for." (STEM, Tablet)*

*"I didn't have to think too much about it. I don't have any major debts so it was easy to answer." (Other major, Computer)*

*"It was not difficult to answer. I included my car and investment accounts." (Other major, Tablet)*

*"I had to think about it at first, but then it was fine." (Other major, Computer)*

Figure C-44 shows a form asking respondents to describe how much each of four personality traits describes them. The traits are "dependable, self-disciplined"; "open to new experiences, complex"; "disorganized, careless"; and "conventional, uncreative." The response options, from left to right, are "strongly disagree," "moderately disagree," "disagree a little," "neither agree nor disagree," "agree a little," "moderately agree," and "strongly agree."

**Figure C-44. Screenshot of personality traits form: 2017**

I see myself as...							
	Strongly disagree	Moderately disagree	Disagree a little	Neither agree nor disagree	Agree a little	Moderately agree	Strongly agree
Dependable, self-disciplined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open to new experiences, complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disorganized, careless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conventional, uncreative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test cognitive testing.

Many respondents were frustrated by this question. They did not agree with the adjective pairings and felt they should not be connected (i.e., you can be conventional but not uncreative or you can be disorganized but not careless). They felt each adjective should be its own survey item.

*"The question was fairly easy. The only thing that was a little difficult to answer was 'open to new experiences, complex' because they don't really go together." (Teacher, Tablet)*

*“The question is fine, but I don’t get option two—‘open to new experiences, complex’—I don’t necessarily think the former means ‘complex.’” (STEM, Tablet)*

*“It was difficult to answer. I liked the scale choices, but I don’t think some of the pairs go together like ‘dependable, self-disciplined’ and ‘open to new experiences, complex.’” (Other major, Computer)*

*“Being honest can be hard. And a lot of these pairings don’t go together. I wouldn’t want to answer this. What’s the purpose? Why am I going to tell someone I’m disorganized?” (Other major, Mobile phone)*

Some mobile phone respondents thought it was difficult to navigate the screen and there was too much scrolling involved.

*“It doesn’t fit on my whole tablet screen so it’s kind of annoying. There are too many choices. Maybe make it only five choices.” (Teacher, Tablet)*

*“This was difficult. The screen was hard to navigate on my phone.” (Other major, Mobile phone)*

Some respondents said the scale should be reversed (i.e., start with agree and end with disagree), and others said there were too many scale points and would have preferred it be cut down from seven to five.

*“The scale is long so I can’t see the whole thing on my screen. Because I couldn’t see the whole scale I didn’t know the rest of it was there.” (Other major, Tablet)*

*“Also, the last two pairings were in conflict. They’re such different traits. I mean, I’m disorganized, but not careless. I’m conventional, but I’m also creative. These pairings just don’t make sense.” (Other major, Mobile phone)*

### **C.3.3.8 Forced-choice Instrumentation Experiment**

Check-all-that-apply questions are used to collect information on whether a series of items or events apply to the respondent. These check-all-that-apply questions are typically asked in two alternative formats: (1) the traditional check-all-that-apply format, in which respondents are asked to check a box for each item that applies to them, and (2) the forced-choice format that presents respondents with explicit yes/no options for each item. Experimental studies suggest that forced-choice formats yield consistently higher rates of affirmative responses, suggesting deeper cognitive processing, and higher data quality (Smyth et al. 2006; Thomas et al. 2017).

A recent meta-analysis based on studies that compared the two formats challenged this conclusion. The meta-analysis posited that two competing mechanisms—with very different implications for data quality—are consistent with higher affirmative response rates (Callegaro et al. 2015). The first mechanism is that the forced-choice format fosters deeper cognitive processing of each item. Forced-choice formats simplify the task of responding because they instruct the respondent to process each item individually and are thus associated with higher data quality. The second mechanism is based on acquiescence bias (i.e., the respondent's tendency to agree), which is associated with higher affirmative response rates in the forced-choice format but implies lower data quality.

To disentangle the effects of these mechanisms, respondents in the B&B:08/18 field test were randomly assigned to one of three conditions upon log-in to the web survey.<sup>15</sup> The control group was shown the traditional check-all-that-apply format ( $n = 240$ ), treatment group one was shown the forced-choice format with yes/no options ( $n = 240$ ), and treatment group two was shown the forced-choice format with no/yes options ( $n = 220$ ). Each survey question selected for the experiment had the following criteria: high number of expected administrations, four or more items on the form, and randomized item order to eliminate the impact that item order may have upon responses. Figure C-45 shows a screenshot of each format type.

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<sup>15</sup> The formats were indistinguishable from one another when administered by telephone; therefore, the experiment excluded sample members who were administered the interview by telephone.

**Figure C-45. Example screenshots of the B&B:08/18 field-test instrumentation forced-choice experiment, by experimental group: 2017**

Experimental group	Question format	Example screenshot															
Control group	Check-all-that-apply	<p>Which of the following best describes your current military status?</p> <p><i>(Please check all that apply.)</i></p> <p><input type="checkbox"/> Veteran</p> <p><input type="checkbox"/> Active duty</p> <p><input type="checkbox"/> Reserves</p> <p><input type="checkbox"/> National Guard</p> <p><input type="checkbox"/> None of the above</p> <p><b>Next &gt;</b></p>															
Treatment group 1	Forced-choice yes/no	<p>Please indicate which of the following does or does not describe your current military status.</p> <table border="1"> <thead> <tr> <th></th><th>Yes</th><th>No</th></tr> </thead> <tbody> <tr> <td>Veteran</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> <tr> <td>Reserves</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> <tr> <td>Active duty</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> <tr> <td>National Guard</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> </tbody> </table> <p><b>Next &gt;</b></p>		Yes	No	Veteran	<input type="radio"/>	<input type="radio"/>	Reserves	<input type="radio"/>	<input type="radio"/>	Active duty	<input type="radio"/>	<input type="radio"/>	National Guard	<input type="radio"/>	<input type="radio"/>
	Yes	No															
Veteran	<input type="radio"/>	<input type="radio"/>															
Reserves	<input type="radio"/>	<input type="radio"/>															
Active duty	<input type="radio"/>	<input type="radio"/>															
National Guard	<input type="radio"/>	<input type="radio"/>															
Treatment group 2	Forced-choice no/yes	<p>Please indicate which of the following does or does not describe your current military status.</p> <table border="1"> <thead> <tr> <th></th><th>No</th><th>Yes</th></tr> </thead> <tbody> <tr> <td>Veteran</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> <tr> <td>Reserves</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> <tr> <td>Active duty</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> <tr> <td>National Guard</td><td><input type="radio"/></td><td><input type="radio"/></td></tr> </tbody> </table> <p><b>Next &gt;</b></p>		No	Yes	Veteran	<input type="radio"/>	<input type="radio"/>	Reserves	<input type="radio"/>	<input type="radio"/>	Active duty	<input type="radio"/>	<input type="radio"/>	National Guard	<input type="radio"/>	<input type="radio"/>
	No	Yes															
Veteran	<input type="radio"/>	<input type="radio"/>															
Reserves	<input type="radio"/>	<input type="radio"/>															
Active duty	<input type="radio"/>	<input type="radio"/>															
National Guard	<input type="radio"/>	<input type="radio"/>															

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

Table C-27 provides the forms selected for the forced-choice experiment and the total number of items on the form.

**Table C-27. Number of item selected for the B&B:08/18 field-test forced-choice instrumentation experiment, by form: 2017**

Form	Form label	Total number of items on form
B18CFINAIDG01	Financial aid	12
B18DCHNG01	Reasons for employment change	10
B18FMILIT	Military status	4
B18AHCOMP	Current household	4
B18FRETIR	Type of retirement accounts	5
B18FAFFCOST	Result of undergraduate costs	6

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

All groups were compared with respect to the number of items with affirmative responses on each form, item missingness (measured as entire forms that were



skipped, as well as the number of items left blank), and average completion time of each form as proxies for cognitive processing.<sup>16</sup>

**Number of affirmative responses.** Across the questions for which the experiment was implemented, both forced-choice formats had significantly higher affirmative response rates compared with the check-all-that-apply format for three of the six forms. If the forced-choice format with yes/no options suffered from acquiescence bias, then the affirmative response rate would differ from the format with no/yes options, given the unintuitive nature of the response order. However, for most forms there were no detectable differences between the two forced-choice formats. These results support previous findings that the forced-choice format encourages deeper cognitive processing. Table C-28 shows the average number of affirmative responses, and Table C-29 shows the test statistics and *p* values.

**Table C-28. Average number of affirmative responses selected during the B&B:08/18 field-test forced-choice experiment, by experimental group and form: 2017**

Form	Form description	Control group: Check-all-that-apply	Treatment group: Forced choice	
			Yes/no options (group 1)	No/yes options (group 2)
B18CFINAIDG01	Financial aid	1.68	2.22	2.40
B18DCHNG01	Reasons for employment change	1.79	2.49	2.69
B18FMILIT	Military status	0.05	0.04	0.12
B18AHCOMP	Current household	1.28	1.32	1.26
B18FRETIR	Type of retirement accounts	1.32	1.40	1.43
B18FAFFCOST	Result of undergraduate costs	1.33	1.78	1.52

NOTE: Results exclude telephone respondents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

<sup>16</sup> Time stamps were used to capture total time spent on the form. To minimize the effect of extreme timing values on the results, outliers were excluded from these analyses. For more information about the identification of timing outliers, see section C.3.3.3.

**Table C-29. Test statistic and *p* value for difference in average number of affirmative responses selected during the B&B:08/18 field-test forced-choice experiment, by experimental group and form: 2017**

Form	Form description	Check-all-that-apply vs. Forced-choice yes/no format		Check-all-that-apply vs. Forced-choice no/yes format		Forced-choice yes/no vs. Forced-choice no/yes format	
		<i>z</i> value	<i>p</i> value	<i>z</i> value	<i>p</i> value	<i>z</i> value	<i>p</i> value
B18CFINAIDG01	Financial aid	2.65	0.008	3.28	0.001	0.77	0.444
B18DCHNG01	Reasons for employment change	3.83	0.001	4.74	0.001	1.02	0.307
B18FMILIT	Military status	-0.89	0.375	2.37	0.018	3.08	0.002
B18AHCOMP	Current household	-0.84	0.402	-1.40	0.162	-0.58	0.560
B18FRETIR	Type of retirement accounts	0.73	0.466	1.07	0.283	0.36	0.718
B18FAFFCOST	Result of undergraduate costs	3.89	0.001	1.71	0.087	-2.13	0.034

NOTE: Results exclude telephone respondents. Significance tests are based on Poisson models, and the first group listed is the reference category.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Item nonresponse.** Unless there is an explicit checkbox for “none of the above,” it is difficult to interpret the meaning of an unchecked box in a check-all-that-apply format. An unchecked box might mean that (1) the response option does not apply, (2) the respondent missed the item in the list, (3) the respondent was unsure, or (4) the response is actually “no.” Therefore, analysis of item-level nonresponse only includes the forced-choice formats, given that item-level nonresponse cannot be distinguished in the check-all-that-apply group.

Item-level nonresponse is calculated as the number of items per forced-choice form left missing among respondents who were administered the form. Comparing item nonresponse across both forced-choice formats, the results in Table C-30 demonstrate that both formats had similar item nonresponse rates across all six grids. This lack of significant differences in item nonresponse provides further evidence that higher numbers of affirmative responses in the forced-choice format are not due to acquiescence bias.

**Table C-30. Average number of affirmative responses selected during the B&B:08/18 field-test forced-choice experiment, and test statistic and *p* value for difference in average number selected, by treatment group and form: 2017**

Form	Form description	Treatment group: Forced-choice format		<i>t</i> statistic	<i>p</i> value
		Yes/no options (group 1)	No/yes options (group 2)		
B18CFINAIDG01	Financial aid	17.5	16.0	-0.29	.772
B18DCHNG01	Reasons for employment change	9.8	5.6	-1.43	.153
B18FMILIT	Military status	3.0	2.0	-0.75	.454
B18AHCOMP	Current household	4.1	3.7	-0.26	.798
B18FRETIR	Type of retirement accounts	10.3	10.0	-0.14	.886
B18FAFFCOST	Result of undergraduate costs	4.7	2.3	-1.42	.157

NOTE: Results exclude telephone respondents. Significance tests are based on simple linear regression models, and group 1 is the reference category.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Completion time.** The forced-choice formats took significantly longer for respondents to complete than the check-all-that-apply format for all six forms. On average, a check-all-that-apply format took 13.9 seconds compared with 16.4 seconds for the yes/no options and 16.5 seconds for the no/yes options (Table C-31). The differences in times across all grids for the two forced-choice formats were not statistically significant (Table C-32). This suggests that the forced-choice formats do not increase cognitive burden.

**Table C-31. Average time, in seconds, to complete the B&B:08/18 field-test forced-choice experiment, by experimental group and form: 2017**

Form	Form description	Control group: Check-all-that-apply format	Treatment groups: Forced choice format	
			Yes/no options (group 1)	No/yes options (group 2)
<b>Overall</b>		<b>13.86</b>	<b>16.43</b>	<b>16.45</b>
B18CFINAIDG01	Financial aid	15.3	29.59	29.92
B18DCHNG01	Reasons for employment change	19.14	31.48	28.22
B18FMILIT	Military status	8.51	9.62	9.66
B18AHCOMP	Current household	10.58	11.62	11.65
B18FRETIR	Type of retirement accounts	13.67	18.74	17.13
B18FAFFCOST	Result of undergraduate costs	18.27	23.18	23.13

NOTE: Results exclude telephone respondents. These calculations exclude respondents with an outlying form completion time. To detect outliers, the distribution of a form's completion time was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed form completion times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Table C-32. Test statistic and p value for difference in average time, in seconds, to complete the B&B:08/18 field-test forced-choice experiment, by experimental group and form: 2017**

Form	Form description	Check-all-that-apply vs. Forced-choice yes/no format		Check-all-that-apply vs. Forced-choice no/yes format		Forced-choice yes/no vs. Forced-choice no/yes format	
		t statistic	p value	t statistic	p value	t statistic	p value
B18CFINAIDG01	Financial aid	9.42	<.0001	9.09	<.0001	-0.16	0.8761
B18DCHNG01	Reasons for employment change	3.20	0.0017	3.57	0.0005	0.86	0.3905
B18FMILIT	Military status	3.10	0.002	3.00	0.0028	-0.12	0.9014
B18AHCOMP	Current household	2.41	0.0165	2.31	0.021	-0.08	0.9376
B18FRETIR	Type of retirement accounts	4.45	<.0001	6.08	<.0001	1.77	0.0765
B18FAFFCOST	Result of undergraduate costs	5.84	<.0001	5.80	<.0001	0.05	0.9630

NOTE: Results exclude telephone respondents. Significance tests are based on simple linear regression models, and the first group listed is the reference category. These calculations exclude respondents with an outlying form completion time. To detect outliers, the distribution of a form's completion time was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed form completion times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

Recommendations for using the forced-choice yes/no format in the full-scale survey are presented in section C.4.2.

### C.3.3.9 *Résumé Data Collection*

The B&B:08/18 field test marked the first time that a NPSAS-related survey collected résumés. This data collection was used to assess participant willingness to provide résumés and evaluate the quality of the content to determine its utility in full-scale data collection. Objectives of the résumé collection included the ability to internally evaluate alignment between employment history as reported via résumé and survey data, improve imputations, and ultimately reduce respondent burden.

Sample members who completed web surveys and expressed interest in uploading their résumé could do so immediately after the survey or they could elect to upload their résumé later. Sample members completing via telephone or paper were only able to agree to upload their résumé later. Those who elected to upload their résumé later were prompted via reminder calls and e-mails and received an additional reminder in the thank-you letter sent after survey completion.

Respondents who uploaded a résumé after completing the survey received an additional \$10 incentive. The résumé collection also served as a nonresponse conversion strategy during the final week of data collection. At this time, the survey was no longer available, but remaining nonrespondents were offered a \$20 incentive to upload their résumés.

**Résumé upload rates.** Overall, 22 percent of B&B:08/18 field-test respondents uploaded a résumé, for a total of 340 résumés received. Table C-33 shows the number and percentage of résumés uploaded during each phase of data collection. Approximately 60 percent of all résumés were uploaded by respondents during the early response phase. Comparatively, the résumé-only phase during the last week of data collection represented only 1 percent of the résumés received, which indicates a low nonresponse conversion rate solely using résumé collection.

**Table C-33. Number and percentage of respondents who uploaded a résumé for the B&B:08/18 field test, by data collection phase: 2017**

Data collection phase	Number	Percent
<b>Overall</b>	<b>340</b>	<b>100.0</b>
Early response phase	210	60.6
Production phase	80	22.4
Nonresponse conversion phase (mini survey)	50	15.9
Nonresponse conversion phase (résumé only)	#	1.2

# Rounds to zero.

NOTE: Total excludes approximately 20 cases not fielded. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

To assess the quality of data provided by résumé collection, the receipt of résumés by respondent characteristics, content of the résumé, and comparison with survey data were analyzed.

**Descriptive statistics.** In total, 340 respondents (36 percent of all respondents) uploaded a résumé. Table C-34 shows details on résumé uploads by type of survey completed (full, mini, or résumé only). Thirty-nine percent of those who completed the full survey uploaded their résumé, and 25 percent of those who completed the mini survey uploaded their résumé. One percent of résumés were uploaded during a nonresponse conversion effort that occurred during the final week of data collection. In this effort, individuals who had not responded to the survey were requested only to upload a résumé.

**Table C-34. Number and percentage of respondents who uploaded a résumé for the B&B:08/18 field test, by survey type: 2017**

Survey type	B&B:08/18 field-test respondents	Uploaded a résumé	
		Number	Percent of respondents
<b>Total</b>	<b>940</b>	<b>340</b>	<b>36.1</b>
Full complete	730	290	38.9
Mini complete	200	50	25.0
Résumé only	#	#	100.0

# Rounds to zero.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

**Analysis of résumé format and content.** To assess résumé quality by comparing résumé and survey data, project staff manually coded each uploaded résumé. Codes described the résumé format, including the type of electronic file uploaded by the respondent, and whether the résumé appeared to be authentic (i.e., to have usable content). The respondent's employment history was coded, including the number of unique employers, beginning and ending dates with each employer, the number of distinct unemployment spells, the length of the longest unemployment spell, and whether the respondent ever worked in a STEM field.

Table C-35 provides details on résumé upload file type. Most uploads (61 percent) were Microsoft Word documents. Thirty-five percent of résumés were uploaded as portable document format (PDF) documents, and 3 percent were uploaded as images. Less than 1 percent of résumé uploads were plain text or other file types. All résumés were analyzed and categorized by usability of content.

**Table C-35. Number and percentage of respondents who uploaded a résumé for the B&B:08/18 field test, by file type: 2017**

File type	Number of uploads	Percent
<b>Total</b>	<b>340</b>	<b>100.0</b>
Microsoft Word	210	61.2
Portable document format (PDF)	120	34.7
Image	10	3.2
Plain text	#	0.3
Other	#	0.6

# Rounds to zero.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

Of the uploaded files, less than 1 percent were deemed unusable and excluded from subsequent analyses. After uploading, respondents were asked to describe how accurate their résumés were with one of the following statuses:

- up to date and accurately reflecting employment history (63 percent);
- mostly up to date and generally reflecting employment history (33 percent);  
or
- not up to date or excluding several employers (3 percent).

To check data quality, project staff compared the number of employers reported in the survey with the number provided on the résumé as an indicator of résumé employment data quality. The number of employers provided on the résumé with a start date of July 2011 or later were counted to align with the employment time span collected in the field-test survey. This analysis included 260 respondents who uploaded a résumé, completed the full survey, reported at least one employer on their résumé with a start date of July 2011 or later, and reported at least one employer in the survey with a start date of July 2011 or later.

Forty-three percent of respondents reported the same number of employers in both the résumé and the survey, 29 percent of respondents listed more employers in their résumé than in the survey, and 28 percent of respondents reported more employers in the survey than in their résumé.

Additional analyses are needed to determine the direction of misreporting. Future studies will continue to explore the utility of collecting résumés and the value they may add to the survey. Data obtained from a résumé collected before the survey is distributed could be preloaded to reduce respondent burden. Data from résumés may also permit analysis of measurement error and could be used to assess and adjust nonresponse bias. Based on the results of the B&B:08/18 field-test résumé collection, résumés will continue to be collected and respondents will be offered incentives for submitting them, although the option to submit a résumé in lieu of the survey will not be used as a nonresponse conversion technique.

## Section C.4. Recommendations for B&B:08/18 Full Scale

The B&B:08/18 field test was conducted to test and evaluate design methods and results prior to implementation of the full-scale data collection. The following recommendations are based on the results of field-test collection and development of the survey.

### C.4.1 Recommendations for Data Collection Design

The data collection design proposed for the B&B:08/18 full-scale survey builds upon the designs implemented in the B&B:08/12 full-scale survey, the B&B:08/18 field test, and other related collections (e.g., B&B:16/17). A primary goal of the full-scale design is to minimize any potential nonresponse bias that could be introduced into B&B:08/18 data, especially bias that could be due to lower response among prior-round nonrespondents. Another important goal is to reduce the amount of time and cost of data collection efforts. A response rate of 75 percent is expected for full-scale data collection and would minimize potential nonresponse bias and optimize statistical power and enable subgroup analyses.

The full-scale collection will continue to use previously proven tracing and locating methods. These methods include varied means of contacting sample members (postcards, e-mails, and text messages) to encourage participation in the survey. The following modifications to data collection protocols are proposed for the full-scale collection.

#### ***C.4.1.1 Define Protocols by Prior-round Response Status***

The B&B:08/18 full-scale sample will be divided into two groups and receive differential treatments based on prior-round response status. As described below, the protocols will differ in terms of the amounts of incentives offered, how long certain incentives are available, and when prospective respondents are first approached by telephone. For the B&B:08/18 full-scale collection, the following groupings will be defined:



- **B&B:08/09 and B&B:08/12 survey respondents:** All sample members who responded to both the B&B:08/09 and B&B:08/12 surveys, *double respondents*, will receive the standard data collection protocol ( $n = 13,490$ ).
- **B&B:08/09 or B&B:08/12 survey nonrespondents:** Sample members who failed to respond to either of the prior two follow-ups (B&B:08/09 and B&B:08/12), *prior nonrespondents*, will receive the aggressive data collection protocol ( $n = 3,550$ ).

**Prepaid incentive.** Cash prepaid or unconditional incentives have been shown to significantly increase response rates in both interviewer-administered as well as self-administered surveys and hence reduce the potential for nonresponse bias (e.g., Cantor, O'Hare, and O'Connor 2008; Church 1993; Goeritz 2006; Medway and Tourangeau 2015; Messer and Dillman 2011; Parsons and Manierre 2014; Singer 2002). Medway and Tourangeau (2015) show that prepaid cash incentives not only significantly increase contact and response rates in telephone surveys but also decrease refusal rates.

A small prepaid incentive of \$2 will be offered to each sample member in the B&B:08/18 full-scale collection. This amount has been shown to effectively increase response rates at more efficient field costs compared with higher or lower prepaid incentives (e.g., Beebe et al. 2005; Millar and Dillman 2011; Tourangeau, Conrad, and Couper 2013, p. 48).

**Baseline incentive.** Double respondents will receive a \$30 baseline incentive, and prior nonrespondents will be offered a \$50 baseline incentive. This matches the amount offered to equivalent groups in previous data collections for the B&B:08 cohort as well as the B&B:16 cohort.

**Start telephone outreach earlier.** Early outbound telephoning of all individuals who previously completed a telephone interview will begin 2 weeks after data collection begins. This is earlier than in the B&B:08/18 field test; outbound telephone calling of the entire sample began roughly 4 weeks after the start of data collection. The goal is to obtain quick responses from these previous telephone respondents to reduce overall data collection costs, reduce the average length of time during which this group is contacted, and increase response rates. The recommendation for the rest of the sample is to begin telephoning the prior nonrespondents 6 weeks after the start of data collection and the double respondents 10 weeks after the start of data collection.

**Offer flash incentives.** Sample members will be offered a \$5 flash (short-term) incentive in addition to the baseline incentive. The flash incentive phase will last

2 weeks for the double respondents and 4 weeks for the prior nonrespondents. After the flash incentive period, the additional \$5 incentive will no longer be offered. While both groups will have the opportunity for the flash incentive, the prior nonrespondents will receive the offer earlier in the data collection period than the double respondents. Early-response incentives have been shown to result in faster responses (e.g., Coppersmith et al. 2016; LeClere et al. 2012), thereby increasing efficiency and reducing overall data collection costs and time. In line with these results, an increased response within the flash incentive period is expected, though not necessarily an increase in the overall response rates.

### **C.4.1.2 Offer Multiple Survey Types**

**Offer abbreviated surveys.** Unlike the field test, which offered only a mini and a mini-paper option, the full-scale collection will incorporate a medium-length abbreviated survey to increase response rates. The abbreviated survey will be 15 minutes and offered before the mini survey (5 minutes) or the mini-paper survey.

**Offer mini surveys.** Administering a mini survey shows no indication of negative effects,<sup>17</sup> is supported by Technical Review Panel (TRP) members and is low cost and easy to implement. The recommendation is for the full-scale collection to use a sequential approach such as offering the mini survey followed by the mini-paper survey.

### **C.4.1.3 Tailor Contact Materials**

Using contact materials that mention the student's major or field of study and that list the NCES study director (rather than the RTI International study director) as the primary signatory and sender is supported by the data collection experiments (see section C.3.2.3), the research literature,<sup>18</sup> and TRP members. It also shows promise in increasing response rates and reducing bias. Using the B&B:08/18 field test to estimate response propensities, this approach is expected to yield an approximate overall response rate of 72 percent.<sup>19</sup>

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<sup>17</sup> Except for the lower rate of résumé submission among mini-paper respondents compared with the mini survey respondents who completed on the Web.

<sup>18</sup> For tailoring, see Lynn (2016) and Tourangeau et al. (2010). For sponsorship, see Avdeyeva and Matland (2013), Edwards et al. (2014), and Groves et al. (2012). For mini-paper, see Biemer et al. (2016), Galesic and Bosnjak (2009), and Messer and Dillman (2011).

<sup>19</sup> The B&B:08/18 field test was a purposive sample and therefore is not strictly comparable to the full-scale sample.

#### ***C.4.1.4 Update Interviewer Training Procedures***

Offer data collection interviewers additional training and practice reviewing notes made during any prior B&B:08 cohort collections (i.e., NPSAS:08, B&B:08/09, and B&B:08/12). Additional review of difficult words in the pronunciation guide and providing context for survey questions is also recommended. Schedule additional time in quality meetings for interviewers to discuss successful and unsuccessful tactics, such as refusal aversion and conversion tactics, with each other.

#### ***C.4.1.5 Continue Administrative Records Matching***

Administrative records matching for the B&B:08/18 full-scale collection will be comparable to procedures conducted for the B&B:08/12 full-scale collection. A match with the Central Processing System (CPS) database for Free Application for Federal Student Aid (FAFSA) data will occur for both the 2015–16 and 2016–17 academic years. Each individual's record from the B&B:08/18 full-scale sample will be sent to CPS for the 2017–18 application data so that data can be used in final data files. Students will likely be matched with the NSLDS database for federal loan and Pell Grant data at two different times during data collection: one interim match will be performed to have preliminary data with which to work and one last match will be performed for final data. In addition to matching with CPS and NSLDS, the full-scale collection will involve administrative record matches with National Student Clearinghouse (NSC) records for enrollment and degree data and the Veterans Benefits Administration (VBA) records to measure receipt of federal veterans education benefits. The match with NSC records will only occur one time toward the end of data collection. The match with VBA records will occur in a similar time frame and will be performed only one time for all sample members.

#### ***C.4.1.6 Continue Résumé Collection***

As was done in the B&B:08/18 field test, at the end of the survey, all B&B:08/18 full-scale survey respondents will be offered the opportunity to upload a résumé. Respondents that upload a résumé will receive an additional \$5 incentive in appreciation of their added time and effort. The résumé files will be stored on secure NCES servers and will be downloaded to RTI's Enhanced Security Network through the same process by which survey data are downloaded. Résumé data will be used to assess the quality of the survey data collected by looking for inconsistencies between the survey responses and résumés. Résumés may also aid in imputations by potentially providing additional information about respondents' employment and education histories. The coverage and quality of data obtained from the full-scale

résumé collection will be reviewed to evaluate the benefits of using résumé data in future data collections.

## C.4.2 Recommendations for Survey Design

**Format of forced-choice yes/no items.** Based on the experiment results reported in section C.3.3.8, the full-scale instrument will implement the forced-choice yes/no format. This format promotes deeper cognitive processing, higher affirmative response rates, and lower item nonresponse compared with the check-all-that-apply format. Because there are no apparent differences in data quality between the two forced-choice formats, the full-scale instrument will display the response option that is intuitive for respondents: yes then no. The only item that will remain in check-all-that-apply format is the item on household composition (B18AHCOMP1), as this format greatly simplifies the response task for this question. Selecting the “live alone” option in this question automatically implies that the other options do not apply and therefore reduces respondent burden.

**Occupation coder analysis.** All B&B:08/18 field-test full survey respondents were randomly assigned either the traditional or predictive occupation coder and would only receive the occupation coder in that format for all job loops administered. (See section C.3.3.4.) The predictive occupation coder performed comparably or better than the traditional occupation coder in terms of data quality and respondent burden. The predictive occupation coder was significantly faster for respondents compared with the traditional occupation coder. The traditional occupation coder resulted in fewer missing codes from respondents during field-test data collection. However, the predictive occupation coder produced significantly higher rates of recode reliability. To summarize, respondents tend to select better occupation codes for their job titles with the predictive occupation coder and can do so in significantly less time compared with the traditional occupation coder. Therefore, it is recommended that the predictive occupation coder be administered in the B&B:08/18 full-scale instrument.

**Survey content.** TRP feedback, expert testing, telephone interviewer feedback, and analysis of the cognitive testing described in Section C.3, provided project staff valuable information for full-scale instrument development. Proposed modifications to the full-scale survey included item revisions, additions, and removals. Table C-36 through Table C-38 list the content section, item name and label, brief description of the modification, and proposed full-scale question wording and response options.

Table C-36 lists the items that were revised for the full-scale survey. Many revisions were made to question wording or response options to provide clarity on the concepts collected in the survey. For example, items related to certifications and licenses were revised to better distinguish between occupational or vocational certifications and licenses from education certificates and degrees.

Table C-37 lists proposed item additions to the full-scale survey. Some items added new concepts as requested by content experts, such as “loan prepayment,” while others were included to improve data quality given field-test performance. These additions to the full-scale survey are intended to improve the quality of data being collected from the survey and increase respondent comprehension.

Table C-38 lists items to be removed from the B&B:08/18 full-scale survey. Questions with multiple formats for the questionnaire design experiment in the field test were eliminated based on experiment results. Other items were removed due to limited analytic value as determined by field-test results, cognitive interviews, and TRP feedback.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018**

Item	Item label	Description of modification	Proposed item wording
<b>Postbaccalaureate education section</b>			
B18CPSTGRD	Attended for additional degree or certificate program	Revised question wording to distinguish occupational or vocational certifications and licenses from education certifications and diplomas.	<p>Have you attended a college, university, or trade school for an additional degree or certificate since completing your bachelor's degree at [NPSAS SCHOOL]? (Do not include certificates of completion such as those earned through participation in short-term training.)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
B18CDEG01	Postbaccalaureate school 1: degree or certificate type	Revised response options to distinguish occupational or vocational certifications/licenses from education certifications/diplomas.	<p>What was the type of degree or certificate you worked on at [SCHOOL NAME]? (You can only select one degree. You will have an opportunity to tell us about other enrollment later.)</p> <p> <input type="checkbox"/> Undergraduate certificate or diploma, including those leading to certification or license  <input type="checkbox"/> Associate's degree  <input type="checkbox"/> Bachelor's degree  <input type="checkbox"/> Postbaccalaureate certificate  <input type="checkbox"/> Master's degree  <input type="checkbox"/> Post-master's certificate  <input type="checkbox"/> Doctoral degree – professional practice (e.g., chiropractic, dentistry, law, medicine, optometry, pharmacy, podiatry, or veterinary medicine)  <input type="checkbox"/> Doctoral degree – research/scholarship (e.g., PhD, EdD)  <input type="checkbox"/> Doctoral degree – other </p>

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording																																				
Postbaccalaureate education section—Continued																																							
B18CFINAIDG01	Postbaccalaureate school 1: financial aid type	Revised response options to include all forms of work-study programs and clarified the distinction between personal loans and financial assistance.	<div>Please indicate whether you used any of the following to pay for your [DEGREE NAME] at [POST-BA SCHOOL].</div> <table><tr><td>Federal student loans</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Private student loans</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Grants or scholarships</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Assistantships</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Fellowships</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Work-study (i.e., federal, state, or institution)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Employer assistance</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Veterans education benefits</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Financial assistance from anyone</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Personal loan from a bank or other source (e.g., family friend)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Your own money (e.g., earnings from employment, savings)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Other sources</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Federal student loans	<input type="checkbox"/>	<input type="checkbox"/>	Private student loans	<input type="checkbox"/>	<input type="checkbox"/>	Grants or scholarships	<input type="checkbox"/>	<input type="checkbox"/>	Assistantships	<input type="checkbox"/>	<input type="checkbox"/>	Fellowships	<input type="checkbox"/>	<input type="checkbox"/>	Work-study (i.e., federal, state, or institution)	<input type="checkbox"/>	<input type="checkbox"/>	Employer assistance	<input type="checkbox"/>	<input type="checkbox"/>	Veterans education benefits	<input type="checkbox"/>	<input type="checkbox"/>	Financial assistance from anyone	<input type="checkbox"/>	<input type="checkbox"/>	Personal loan from a bank or other source (e.g., family friend)	<input type="checkbox"/>	<input type="checkbox"/>	Your own money (e.g., earnings from employment, savings)	<input type="checkbox"/>	<input type="checkbox"/>	Other sources	<input type="checkbox"/>	<input type="checkbox"/>
Federal student loans	<input type="checkbox"/>	<input type="checkbox"/>																																					
Private student loans	<input type="checkbox"/>	<input type="checkbox"/>																																					
Grants or scholarships	<input type="checkbox"/>	<input type="checkbox"/>																																					
Assistantships	<input type="checkbox"/>	<input type="checkbox"/>																																					
Fellowships	<input type="checkbox"/>	<input type="checkbox"/>																																					
Work-study (i.e., federal, state, or institution)	<input type="checkbox"/>	<input type="checkbox"/>																																					
Employer assistance	<input type="checkbox"/>	<input type="checkbox"/>																																					
Veterans education benefits	<input type="checkbox"/>	<input type="checkbox"/>																																					
Financial assistance from anyone	<input type="checkbox"/>	<input type="checkbox"/>																																					
Personal loan from a bank or other source (e.g., family friend)	<input type="checkbox"/>	<input type="checkbox"/>																																					
Your own money (e.g., earnings from employment, savings)	<input type="checkbox"/>	<input type="checkbox"/>																																					
Other sources	<input type="checkbox"/>	<input type="checkbox"/>																																					
B18CCERT	Had vocational or technical certification	Separated B18CLICFILT into two forms (B18CCERT and B18CLICENSE) to distinguish occupational or vocational certifications/licenses from education certifications/diplomas and updated the question wording to align with the Current Population Survey.	<div>Do you have a vocational or technical certificate or diploma? (Examples include a digital arts certificate, a cosmetology diploma, or a motorcycle mechanics diploma.)</div> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div>																																				
Financial aid section																																							
B18CPRIVAMT	Amount of private student loans	Revised the question wording to include help text on the form to clarify the distinction between private loans and federal loans.	<div>How much of that total amount was in private loans?</div> <div>Private loans are offered by private lenders, and no federal application forms are needed. Private loans are credit-based and may require a cosigner if the student does not have an established credit history.</div> <div>\$ <input type="text"/>.00</div> <div>Did not have any private student loans</div>																																				

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording
<b>Financial aid section—Continued</b>			
B18CPRIVDEF	Ever defaulted on private loans	Revised the question wording to include help text on the form to clarify the definition of default.	<p>Have you ever defaulted on a private student loan?</p> <p>(Default typically occurs when payments are not made for a certain length of time specified by the lender and arrangements [e.g., deferment or forbearance] have not been made to postpone payments. Students in default are contacted by a collection agency and defaults are often reported on a person's credit history.)</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> Don't Know</p>
B18CFEDDEF	Ever defaulted on federal loans	Revised the question wording to include help text on the form to clarify the definition of default.	<p>Have you ever defaulted on a federal student loan?</p> <p>(Default typically occurs when payments are not made for a certain length of time specified by the lender and arrangements [e.g., deferment or forbearance] have not been made to postpone payments. Students in default are contacted by a collection agency and defaults are often reported on a person's credit history.)</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> Don't know</p>
B18CIDRPART	Enrolled in income-driven repayment (IDR) program	Revised the question wording to include students in the process of enrolling in the IDR plan.	<p>Are you enrolled in an income-driven repayment (IDR) plan, or in the process of enrolling in an IDR plan, for your federal student loans?</p> <p>(An IDR plan sets your monthly student loan payment at an amount that is intended to be affordable based on your income and family size. These plans include the Revised Pay As You Earn Repayment [REPAYE] Plan, Pay As You Earn Repayment [PAYE] Plan, Income-Based Repayment [IBR] Plan, and Income-Contingent Repayment [ICR] Plan.)</p> <p><input type="checkbox"/> Yes  <input type="checkbox"/> No</p>

See notes at end of table.



**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording
<b>Financial aid section—Continued</b>			
B18DIDRWHY	Reasons not enrolled in income-driven repayment (IDR) program	Revised to reduce the number of response options to make the categories of IDR plans distinct for respondents.	<p>What are the reasons why you are not enrolled in an income-driven repayment plan for your federal student loans?</p> <p> <input type="checkbox"/> Did not think I was eligible  <input type="checkbox"/> Thought applying would take too much time or effort  <input type="checkbox"/> Did not need lower monthly loan payments  <input type="checkbox"/> Did not like terms of these plans (i.e. time to repayment)  <input type="checkbox"/> Other reasons </p>
<b>Employment section</b>			
B18CLICENSE	Had active professional certification or a state or industry license	Separated B18CLICFILT into two forms (B18CCERT and B18CLICENSE) to distinguish occupational or vocational certifications/licenses from education certifications/diplomas and updated the question wording to align with the Current Population Survey.	<p>Do you have an active professional certification or a state or industry license? (Examples of professional certifications or state or industry licenses include a real estate license, a medical assistant certification, an elementary or secondary education license, or an IT certification.)</p> <p> <input type="checkbox"/> Yes  <input type="checkbox"/> No </p>
B18DOCCEX01	Occupation coder: experimental predictive coder	Revised item wording for added clarity.	<p>When you were last [{if this employer = 'self-employment'} self-employed {else} employed by [this employer]], what was your job title? (If you are unable to find a close match for your job title, click "Job title not listed.")</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
B18D1IND01	Primary industry	Revised response options on B18D1IND01 to reflect the B&B:08/12 full-scale response frequencies and added all other industries on B18D2IND01.	<p>Would you classify the primary industry for [EMPLOYER NAME] as...</p> <p> <input type="checkbox"/> Accommodations and food service  <input type="checkbox"/> Education or education services  <input type="checkbox"/> Finance and insurance  <input type="checkbox"/> Health care, social assistance, or child care  <input type="checkbox"/> Professional, scientific, and technical services  <input type="checkbox"/> Retail sales or retail trade  <input type="checkbox"/> Something else </p>

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording
<b>Employment section—Continued</b>			
B18D2IND01	Primary industry: additional industries	Revised response options on B18D1IND01 to reflect the B&B:08/12 full-scale response frequencies and added all other industries on B18D2IND01.	<p>Would you say the primary industry for [EMPLOYER NAME] is...</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Administrative and support services</li> <li><input type="checkbox"/> Agriculture, forestry, fishing, and hunting</li> <li><input type="checkbox"/> Arts, entertainment, and recreation</li> <li><input type="checkbox"/> Automotive repair and maintenance</li> <li><input type="checkbox"/> Construction</li> <li><input type="checkbox"/> Information, motion pictures, internet, and telecommunication</li> <li><input type="checkbox"/> Management of companies or enterprises</li> <li><input type="checkbox"/> Manufacturing</li> <li><input type="checkbox"/> Mining</li> <li><input type="checkbox"/> Personal care services</li> <li><input type="checkbox"/> Public administration, government, public safety, and military</li> <li><input type="checkbox"/> Real estate, rental and leasing</li> <li><input type="checkbox"/> Transportation and warehousing</li> <li><input type="checkbox"/> Utilities</li> <li><input type="checkbox"/> Waste management and environmental remediation</li> <li><input type="checkbox"/> Wholesale trade</li> <li><input type="checkbox"/> Other industry not listed</li> </ul>
B18DCURTLC01	Job allows telecommuting	Revised the item wording to include “work remotely.”	<p>In your job as a(n) [JOB TITLE AT EMPLOYER NAME], were you allowed to telecommute or work remotely?</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Yes</li> <li><input type="checkbox"/> No, it did not make sense for your job</li> <li><input type="checkbox"/> No, it was possible but not offered for your job</li> </ul>
B18DNWINTRO	Nonworking loop: intro form	Revised to separate B18DNOWRK into two items (B18DNWINTRO and B18DNW01) to replicate the structure of the nonworking loop from the B&B:08/12 full-scale survey.	<p>Based on the employment dates you entered, it appears that there were [periods of not working] times you were not employed since July 2012. To better understand the employment paths of graduates, we would like to know what you were doing during each of the time periods you were not employed.</p>

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording
<b>Employment section—Continued</b>			
B18DNW01	Nonworking loop: activity while not employed	Revised to separate B18DNOWRK into two items (B18DNWINTRO and B18DNW01) to replicate the structure of the nonworking loop from the B&B:08/12 full-scale survey.	<p>What were you doing when you were not working from [[start and end month of period of not working] from current loop]?</p> <p>YesNo</p> <p>Looking for work <input type="checkbox"/> <input type="checkbox"/></p> <p>Taking a break from work <input type="checkbox"/> <input type="checkbox"/></p> <p>Enrolled in school <input type="checkbox"/> <input type="checkbox"/></p> <p>Not working due to personal health issues (e.g., disabled) <input type="checkbox"/> <input type="checkbox"/></p> <p>Caring for children <input type="checkbox"/> <input type="checkbox"/></p> <p>Caring for other family members <input type="checkbox"/> <input type="checkbox"/></p> <p>Something else <input type="checkbox"/> <input type="checkbox"/></p>
B18DNEGOTIAT	Negotiated salary/benefits since bachelor's degree	Revised item wording to capture any negotiating behavior since completing a bachelor's degree.	<p>Since completing your bachelor's degree requirements, have you ever negotiated salary or benefits with any employer?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Not applicable</p>
<b>Teaching section</b>			
B18EANYTCH	Type of K–12 teacher	Revised the question wording based on the addition of B18EINTRO and B18EANYTCHX.	<p>Since July 2012, have you held any of the following teaching positions at the K–12 level?</p> <p>(Please choose all that apply)</p> <p><input type="checkbox"/> Regular classroom teacher (full- or part-time)</p> <p><input type="checkbox"/> Substitute, short term</p> <p><input type="checkbox"/> Substitute, long term</p> <p><input type="checkbox"/> Teacher's aide</p> <p><input type="checkbox"/> Support teacher</p> <p><input type="checkbox"/> Itinerant teacher</p> <p><input type="checkbox"/> Student teacher</p> <p><input type="checkbox"/> Other teaching position</p>

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording
<b>Teaching section—Continued</b>			
B18EJBFD	Subjects taught in teaching	Revised response options and the item wording to show the school name.	<p>At [current/most recent school], what subjects did you teach? (Please choose all that apply)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Elementary education (general curriculum in elementary or middle grades)</li> <li><input type="checkbox"/> General education in middle or secondary grades</li> <li><input type="checkbox"/> English or language arts</li> <li><input type="checkbox"/> Mathematics or computer science</li> <li><input type="checkbox"/> Natural sciences (e.g., biology, chemistry)</li> <li><input type="checkbox"/> Social sciences (e.g., social studies, psychology)</li> <li><input type="checkbox"/> Special education</li> <li><input type="checkbox"/> Any other subject</li> </ul>
B18EJBFD2	Other subjects taught in teaching	Revised response options to make categories mutually exclusive.	<p>What subjects did you teach? (Please choose all that apply)</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Arts and music</li> <li><input type="checkbox"/> English as a second language (ESL)</li> <li><input type="checkbox"/> Foreign languages</li> <li><input type="checkbox"/> Health, physical education</li> <li><input type="checkbox"/> Vocational, career, or technical education</li> <li><input type="checkbox"/> Any other subject</li> </ul>
B18EJBGR	Grade levels taught	Revised item wording to show the school name to provide clarity.	<p>At [current/most recent school], what were the lowest and highest grades you taught? (If you only taught one grade level, please select the same grade level for both the lowest and highest grades.)</p> <p>Lowest grade level: Kindergarten – Twelfth grade</p> <p>Highest grade level: Kindergarten – Twelfth grade</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Taught ungraded students</li> </ul>

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording																											
Teaching section—Continued																														
B18EPRSUPP	Level of support from school leadership	Revised mentions of “principal” to “school leadership.”	<div>On a scale from 1 to 5, where 1 means “strongly disagree” and 5 means “strongly agree,” please indicate the extent to which you agree or disagree with the following statements about the school leadership where you last worked.</div> <table><tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>School leadership supported and encouraged staff.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>School leadership enforced school rules for students' conduct and backed me up when I needed it.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>School leadership communicated to the staff what kind of school they wanted.</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		1	2	3	4	5	School leadership supported and encouraged staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	School leadership enforced school rules for students' conduct and backed me up when I needed it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	School leadership communicated to the staff what kind of school they wanted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
	1	2	3	4	5																									
School leadership supported and encouraged staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
School leadership enforced school rules for students' conduct and backed me up when I needed it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
School leadership communicated to the staff what kind of school they wanted.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																									
B18EUNION	Union representation	Revised to simplify the item wording to provide more clarity on the concept.	<div>Was your most recent teaching position represented by a teacher or other labor union?</div> <div><input type="checkbox"/> Yes, and I was a dues-paying member</div> <div><input type="checkbox"/> Yes, and I was not a dues-paying member</div> <div><input type="checkbox"/> No</div> <div><input type="checkbox"/> Don't know</div>																											
B18ESCHLEVB01	Teacher mobility loop: reasons dissatisfied with school	Revised mentions of “principal” to “school leadership” and refined response options. Revised the format from check-all-that-apply to forced-choice yes/no grid per field-test formatting experiment results (see section C.3.3.8).	<div>Were you dissatisfied with...</div> <table><tr><td></td><td>Yes</td><td>No</td></tr><tr><td>Salary and benefits</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Workplace conditions (e.g., class size, grade level or subject area, facilities, classroom resources, school safety)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Student discipline and behavior</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Lack of support from student's parents</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Lack of support from school leadership</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Too many non-teaching responsibilities</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Limited opportunities to advance in career</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Other</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		Yes	No	Salary and benefits	<input type="checkbox"/>	<input type="checkbox"/>	Workplace conditions (e.g., class size, grade level or subject area, facilities, classroom resources, school safety)	<input type="checkbox"/>	<input type="checkbox"/>	Student discipline and behavior	<input type="checkbox"/>	<input type="checkbox"/>	Lack of support from student's parents	<input type="checkbox"/>	<input type="checkbox"/>	Lack of support from school leadership	<input type="checkbox"/>	<input type="checkbox"/>	Too many non-teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	Limited opportunities to advance in career	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No																												
Salary and benefits	<input type="checkbox"/>	<input type="checkbox"/>																												
Workplace conditions (e.g., class size, grade level or subject area, facilities, classroom resources, school safety)	<input type="checkbox"/>	<input type="checkbox"/>																												
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Too many non-teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>																												
Limited opportunities to advance in career	<input type="checkbox"/>	<input type="checkbox"/>																												
Other	<input type="checkbox"/>	<input type="checkbox"/>																												

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording																											
Teaching section—Continued																														
B18ETCHSAT	Teacher satisfaction	Revised the question wording to refer to “current teaching position” to improve clarity.	<div>In your current teaching position, are you satisfied with each of the following...</div> <table><thead><tr><th></th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>Student discipline and behavior</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Class size(s)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>The support you receive from student’s parents</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>The support you receive from administrators</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>School safety</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Requirements for standardized testing</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Non-teaching responsibilities</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Opportunities to advance in your career</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></tbody></table>		Yes	No	Student discipline and behavior	<input type="checkbox"/>	<input type="checkbox"/>	Class size(s)	<input type="checkbox"/>	<input type="checkbox"/>	The support you receive from student’s parents	<input type="checkbox"/>	<input type="checkbox"/>	The support you receive from administrators	<input type="checkbox"/>	<input type="checkbox"/>	School safety	<input type="checkbox"/>	<input type="checkbox"/>	Requirements for standardized testing	<input type="checkbox"/>	<input type="checkbox"/>	Non-teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	Opportunities to advance in your career	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No																												
Student discipline and behavior	<input type="checkbox"/>	<input type="checkbox"/>																												
Class size(s)	<input type="checkbox"/>	<input type="checkbox"/>																												
The support you receive from student’s parents	<input type="checkbox"/>	<input type="checkbox"/>																												
The support you receive from administrators	<input type="checkbox"/>	<input type="checkbox"/>																												
School safety	<input type="checkbox"/>	<input type="checkbox"/>																												
Requirements for standardized testing	<input type="checkbox"/>	<input type="checkbox"/>																												
Non-teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>																												
Opportunities to advance in your career	<input type="checkbox"/>	<input type="checkbox"/>																												
B18ETCHSTAY	Reasons stayed in teaching	Revised response options to include work-life balance.	<div>One of the purposes of B&amp;B is to learn about the teaching profession and what motivates someone to become a teacher and stay in teaching. According to our records, you reported teaching in the past and are currently teaching.</div> <div>What has motivated you to continue in the teaching profession? (Please choose all that apply)</div> <div><input type="checkbox"/> Prestige of occupation <input type="checkbox"/> Working with children <input type="checkbox"/> Opportunity to contribute to society <input type="checkbox"/> Ability to balance personal life and work <input type="checkbox"/> Relationships with colleagues <input type="checkbox"/> Other reason(s)</div>																											
B18ETCHLEVB	Reasons dissatisfied with teaching	Revised mentions of “principal” to “school leadership” and refined response options. Revised the format from check-all-that-apply to forced-choice yes/no grid per field-test formatting experiment results (see section C.3.3.8).	<div>Were you dissatisfied with...</div> <table><thead><tr><th></th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>Salary and benefits</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Teaching as a career</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Student discipline and behavior</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Lack of support from student's parents</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Lack of support from school leadership</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Too many non-teaching responsibilities</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Requirements for standardized testing</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Other</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></tbody></table>		Yes	No	Salary and benefits	<input type="checkbox"/>	<input type="checkbox"/>	Teaching as a career	<input type="checkbox"/>	<input type="checkbox"/>	Student discipline and behavior	<input type="checkbox"/>	<input type="checkbox"/>	Lack of support from student's parents	<input type="checkbox"/>	<input type="checkbox"/>	Lack of support from school leadership	<input type="checkbox"/>	<input type="checkbox"/>	Too many non-teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	Requirements for standardized testing	<input type="checkbox"/>	<input type="checkbox"/>	Other	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No																												
Salary and benefits	<input type="checkbox"/>	<input type="checkbox"/>																												
Teaching as a career	<input type="checkbox"/>	<input type="checkbox"/>																												
Student discipline and behavior	<input type="checkbox"/>	<input type="checkbox"/>																												
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Lack of support from school leadership	<input type="checkbox"/>	<input type="checkbox"/>																												
Too many non-teaching responsibilities	<input type="checkbox"/>	<input type="checkbox"/>																												
Requirements for standardized testing	<input type="checkbox"/>	<input type="checkbox"/>																												
Other	<input type="checkbox"/>	<input type="checkbox"/>																												

See notes at end of table.

**Table C-36. B&B:08/18 field-test items proposed for revision in the full-scale survey: 2018—Continued**

Item name	Label	Description of modification	Revised item wording																		
Background section																					
B18FDISCRIM	Employment discrimination	Revised response options to include “religion.”	<div>Discrimination may happen when people are treated unfairly because they are seen as different from others based on a personal characteristic (such as race, sex, sexual orientation, gender identity, national origin, citizenship status, or some other characteristic).</div> <div>Do you feel that you have ever been treated unfairly at work because of your...</div> <table><thead><tr><th></th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>Race or ethnicity</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Sex</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Gender identity or sexual orientation</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>National origin or citizenship status</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Religion</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></tbody></table>		Yes	No	Race or ethnicity	<input type="checkbox"/>	<input type="checkbox"/>	Sex	<input type="checkbox"/>	<input type="checkbox"/>	Gender identity or sexual orientation	<input type="checkbox"/>	<input type="checkbox"/>	National origin or citizenship status	<input type="checkbox"/>	<input type="checkbox"/>	Religion	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No																			
Race or ethnicity	<input type="checkbox"/>	<input type="checkbox"/>																			
Sex	<input type="checkbox"/>	<input type="checkbox"/>																			
Gender identity or sexual orientation	<input type="checkbox"/>	<input type="checkbox"/>																			
National origin or citizenship status	<input type="checkbox"/>	<input type="checkbox"/>																			
Religion	<input type="checkbox"/>	<input type="checkbox"/>																			
B18FACCEPT	Employer acceptance	Revised the question wording to specify “current workplace” to improve clarity.	<div>In general, how accepting would you say your current workplace is of gay, lesbian, bisexual, and transgender employees?</div> <div><input type="checkbox"/> Very accepting</div> <div><input type="checkbox"/> Somewhat accepting</div> <div><input type="checkbox"/> Not very accepting</div> <div><input type="checkbox"/> Not at all accepting</div>																		

NOTE: NPSAS = National Postsecondary Student Aid Study. BA = bachelor's degree. K–12 = kindergarten through 12<sup>th</sup>-grade.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) Field Test.

**Table C-37. B&B:08/18 field-test items proposed for addition to the full-scale survey: 2018**

Item name	Label	Description	Item wording
<b>Financial aid section</b>			
B18CPRIVMORE	Private loan prepayment	Added to capture the frequency of private loan prepayments.	<p>When repaying student loans, you can pay more than the minimum monthly payment in order to reduce the interest you pay and the total cost of your loan over time.</p> <p>In the last 12 months, have you paid more than the minimum monthly payment for your private student loans?</p> <p> <input type="checkbox"/> No, have not paid more than the minimum amount  <input type="checkbox"/> Yes, paid more than the minimum amount 1 or 2 times  <input type="checkbox"/> Yes, paid more than the minimum amount 3 or more times </p>
B18CFEDMORE	Federal loan prepayment	Added to capture frequency of federal loan prepayments.	<p>When repaying student loans, you can pay more than the minimum monthly payment in order to reduce the interest you pay and the total cost of your loan over time.</p> <p>In the last 12 months, how often have you paid more than the minimum monthly payment for your federal student loans?</p> <p> <input type="checkbox"/> No, have not paid more than the minimum amount  <input type="checkbox"/> Yes, paid more than the minimum amount 1 or 2 times  <input type="checkbox"/> Yes, paid more than the minimum amount 3 or more times </p>
B18IDRAWARE	Awareness of income-driven repayment (IDR) plans	Added “awareness of IDR plans” as a separate form to make the concept distinct from <i>usage</i> of IDR plans for respondents.	<p>Have you heard of income-driven repayment (IDR) plans for your federal student loans?</p> <p> <input type="checkbox"/> Yes  <input type="checkbox"/> No </p>
<b>Employment section</b>			
B18DJDUTY01	Job 1: job duties	Added collection of job duties to enable more accurate post-data collection coding of occupation. Administered to respondents who did not code the occupation on B18DOCCEX01.	<p>As a [job title at employer], what are your job duties?</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
<b>Teaching section</b>			
B18EINTRO	Teaching introduction form	Added introductory form due to new teaching gate (B18EANYTCHX) and B18EANYTCH item wording revisions.	<p>One of the goals of this study is to learn about experiences of teachers at elementary or secondary schools (kindergarten through 12th grade), even among graduates who did not major in an education field.</p>

See notes at end of table.



**Table C-37. B&B:08/18 field-test items proposed for addition to the full-scale survey: 2018—Continued**

Item name	Label	Description	Item wording
<b>Teaching section—Continued</b>			
B18EANYTCHX	Taught at K–12 level	Added a forced-choice yes/no gate item due to the high level of missingness on the checkbox list (B18EANYTCH) in B&B:08/18 field-test collection and cognitive interview feedback.	<p>Have you worked as a teacher at the K–12 level since July 2012? (Indicate “yes” only for teaching positions at elementary or secondary schools. Do not include positions such as a preschool teacher, SAT tutor or piano teacher in a non-school setting, guidance counselor or librarian, graduate teaching assistant, and college or university teacher.)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
B18ETCHLEVC	New education position type	Added to capture information about career trajectories in the K–12 education pathway.	<p>You just indicated you left classroom teaching but remained in education. What type of position did you hold after leaving the classroom?</p> <p><input type="checkbox"/> District leader (e.g., school district administrator, chief academic officer)  <input type="checkbox"/> School leader (e.g., principal or school head, assistant principal)  <input type="checkbox"/> Academic school specialist (e.g., instructional coordinator, academic coach or specialist)  <input type="checkbox"/> Other school specialist (e.g., librarian, library technician, counselor or school psychologist)  <input type="checkbox"/> Other position</p>
<b>Background section</b>			
B18FDEPSAM	Date of dependency the same as date of birth	Added as a gate item for B18FDEPDAT to clarify the type of information collected for dependents.	<p>Did you become financially responsible for all of your dependents at the same time as their birth? (Answer “no” if you started to financially support any of your dependents at a time other than their birth, such as through adoption, foster care, etc.)</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
B18FDISTNC	Zip code for primary residence	Added for analytic utility.	<p>What is the 5-digit zip code of your permanent address? Your permanent address is usually your legal residence, such as where you maintain your driver’s license or are registered to vote.</p> <div style="border: 1px solid black; height: 20px; width: 100%;"></div> <p><input type="checkbox"/> Check here if primary residence located outside of the U.S.</p>

NOTE: K–12 = kindergarten through 12<sup>th</sup>-grade.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

**Table C-38. B&B:08/18 field-test items proposed for removal from the full-scale survey: 2018**

Item name	Label	Rationale	Item wording																																							
Postbaccalaureate education/training																																										
B18CFINAIDG101	Postbaccalaureate school 1: financial aid type, experimental check-all-that-apply format	Questionnaire design experiment item is not needed for the full-scale survey.	<p>Which of the following did you use to pay for your [DEGREE NAME] at [POST-BA SCHOOL]? (Please choose all that apply)</p> <div><input type="checkbox"/> Federal student loans</div> <div><input type="checkbox"/> Private student loans</div> <div><input type="checkbox"/> Grants or scholarships</div> <div><input type="checkbox"/> Assistantships</div> <div><input type="checkbox"/> Fellowships</div> <div><input type="checkbox"/> Federal work-study</div> <div><input type="checkbox"/> Employer assistance</div> <div><input type="checkbox"/> Veterans education benefits</div> <div><input type="checkbox"/> Financial assistance or monetary gift from anyone {{if married} other than your spouse}</div> <div><input type="checkbox"/> Personal loan (to be paid back)</div> <div><input type="checkbox"/> Your own money (earnings from employment, savings, etc.)</div> <div><input type="checkbox"/> Other sources</div>																																							
B18CFINAIDG301	Postbaccalaureate school 1: financial aid type, experimental forced-choice no/yes grid	Questionnaire design experiment item is not needed for the full-scale survey.	<p>Please indicate whether or not you used any of the following to pay for your [DEGREE NAME] at [POST-BA SCHOOL].</p> <table><thead><tr><th></th><th>No</th><th>Yes</th></tr></thead><tbody><tr><td>Federal student loans</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Private student loans</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Grants or scholarships</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Assistantships</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Fellowships</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Federal work-study</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Employer assistance</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Veterans education benefits</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Financial assistance or monetary gift from anyone {{if married} other than your spouse}</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Personal loan (to be paid back)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Your own money (earnings from employment, savings, etc.)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Other sources</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></tbody></table>		No	Yes	Federal student loans	<input type="checkbox"/>	<input type="checkbox"/>	Private student loans	<input type="checkbox"/>	<input type="checkbox"/>	Grants or scholarships	<input type="checkbox"/>	<input type="checkbox"/>	Assistantships	<input type="checkbox"/>	<input type="checkbox"/>	Fellowships	<input type="checkbox"/>	<input type="checkbox"/>	Federal work-study	<input type="checkbox"/>	<input type="checkbox"/>	Employer assistance	<input type="checkbox"/>	<input type="checkbox"/>	Veterans education benefits	<input type="checkbox"/>	<input type="checkbox"/>	Financial assistance or monetary gift from anyone {{if married} other than your spouse}	<input type="checkbox"/>	<input type="checkbox"/>	Personal loan (to be paid back)	<input type="checkbox"/>	<input type="checkbox"/>	Your own money (earnings from employment, savings, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	Other sources	<input type="checkbox"/>	<input type="checkbox"/>
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Federal student loans	<input type="checkbox"/>	<input type="checkbox"/>																																								
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See notes at end of table.

**Table C-38. B&B:08/18 field-test items proposed for removal from the full-scale survey: 2018—Continued**

Item name	Label	Rationale	Item wording
<b>Employment section</b>			
B18DEMPBRK01	Employment break activities	Information is already captured in B18DNW01.	<p>You indicated you took an unpaid break from [EMPLOYER NAME]. Why were you not employed during this unpaid break?</p> <p><input type="checkbox"/> Employment was seasonal or temporary</p> <p><input type="checkbox"/> Resigned or left [EMPLOYER NAME]</p> <p><input type="checkbox"/> Took a medical, personal, or family leave</p> <p><input type="checkbox"/> Other reason(s)</p>
B18DOCC01	Occupation coder: traditional	Included in the field test only for the occupation coder experiment (see section C.3.3.3).	<p>What were your title and job duties of your job at [EMPLOYER NAME]? (If you are unable to find a close match for your job title, click "Job title not listed".)</p> <p>Job title: <input type="text"/></p> <p>Job duties: <input type="text"/></p>
B18DCHNG101	Why no longer employed by [employer]: experimental check-all-that-apply format	Questionnaire design experiment item is not needed for the full-scale survey.	<p>Why are you no longer employed by [EMPLOYER NAME]?</p> <p><input type="checkbox"/> Wanted better salary or benefits</p> <p><input type="checkbox"/> Wanted a different job in the same or similar field</p> <p><input type="checkbox"/> Wanted a job in a different field</p> <p><input type="checkbox"/> Wanted better opportunities (e.g. career advancement or job security)</p> <p><input type="checkbox"/> Position was temporary or seasonal</p> <p><input type="checkbox"/> Laid off, terminated, or contract not renewed</p> <p><input type="checkbox"/> Relocated to another area</p> <p><input type="checkbox"/> Care for children, family members, and other dependents</p> <p><input type="checkbox"/> Health reasons</p> <p><input type="checkbox"/> Other reason(s)</p>

See notes at end of table.

**Table C-38. B&B:08/18 field-test items proposed for removal from the full-scale survey: 2018—Continued**

Item name	Label	Rationale	Item wording																														
Employment section—Continued																																	
B18DCHNG301	Why no longer employed by [employer]: experimental forced-choice no/yes grid	Questionnaire design experiment item is not needed for the full-scale survey.	<div>For each of the following, please indicate whether or not it is a reason you are no longer employed by [EMPLOYER NAME]?</div> <table><tr><td>Wanted better salary or benefits</td><td>No</td><td>Yes</td></tr><tr><td>Wanted a different job in the same or similar field</td><td></td><td></td></tr><tr><td>Wanted a job in a different field</td><td></td><td></td></tr><tr><td>Wanted better opportunities (e.g., career advancement or job security)</td><td></td><td></td></tr><tr><td>Position was temporary or seasonal</td><td></td><td></td></tr><tr><td>Laid off, terminated, or contract not renewed</td><td></td><td></td></tr><tr><td>Relocated to another area</td><td></td><td></td></tr><tr><td>Care for children, family members, and other dependents</td><td></td><td></td></tr><tr><td>Health reasons</td><td></td><td></td></tr><tr><td>Other reason(s)</td><td></td><td></td></tr></table>	Wanted better salary or benefits	No	Yes	Wanted a different job in the same or similar field			Wanted a job in a different field			Wanted better opportunities (e.g., career advancement or job security)			Position was temporary or seasonal			Laid off, terminated, or contract not renewed			Relocated to another area			Care for children, family members, and other dependents			Health reasons			Other reason(s)		
Wanted better salary or benefits	No	Yes																															
Wanted a different job in the same or similar field																																	
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Laid off, terminated, or contract not renewed																																	
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Care for children, family members, and other dependents																																	
Health reasons																																	
Other reason(s)																																	
Teaching section																																	
B18EPRTIME	Length of time principal at school	Limited analytic utility and poor performance.	<div>When you last taught at [most recent school], how many years had your principal held that position?</div> <div><input type="checkbox"/> Less than 2 years</div> <div><input type="checkbox"/> 2–5 years</div> <div><input type="checkbox"/> 6–9 years</div> <div><input type="checkbox"/> 10 years or more</div>																														
Background section																																	
B18FDOB	Date of birth	To reduce respondent burden. (Date of birth has already been collected for the full-scale sample.)	<div>In what month and year were you born?</div> <div>Month: January–December</div> <div>Year: 1920–1992</div>																														

See notes at end of table.

**Table C-38. B&B:08/18 field-test items proposed for removal from the full-scale survey: 2018—Continued**

Item name	Label	Rationale	Item wording															
Background section—Continued																		
B18FMILIT1	Military status: experimental check-all-that-apply format	Questionnaire design experiment item is not needed for the full-scale survey.	<div>Which of the following describes your current military status? (Please choose all that apply)</div> <div><input type="checkbox"/> Veteran</div> <div><input type="checkbox"/> Active duty</div> <div><input type="checkbox"/> Reserves</div> <div><input type="checkbox"/> National Guard</div> <div><input type="checkbox"/> None of the above</div>															
B18FMILIT3	Military status: experimental forced-choice no/yes grid	Questionnaire design experiment item is not needed for the full-scale survey.	<div>Please indicate which of the following does or does not describe your current military status.</div> <table><tr><td></td><td>No</td><td>Yes</td></tr><tr><td>Veteran</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Active duty</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Reserves</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>National Guard</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		No	Yes	Veteran	<input type="checkbox"/>	<input type="checkbox"/>	Active duty	<input type="checkbox"/>	<input type="checkbox"/>	Reserves	<input type="checkbox"/>	<input type="checkbox"/>	National Guard	<input type="checkbox"/>	<input type="checkbox"/>
	No	Yes																
Veteran	<input type="checkbox"/>	<input type="checkbox"/>																
Active duty	<input type="checkbox"/>	<input type="checkbox"/>																
Reserves	<input type="checkbox"/>	<input type="checkbox"/>																
National Guard	<input type="checkbox"/>	<input type="checkbox"/>																
B18AHCOMP2	Current household composition: experimental forced-choice yes/no grid	Questionnaire design experiment item is not needed for the full-scale survey.	<div>Please indicate whether or not you currently live with any of the following individuals.</div> <table><tr><td></td><td>Yes</td><td>No</td></tr><tr><td>Spouse or partner</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Children and/or other dependents</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Parents or in-laws</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Another person (e.g., roommate)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		Yes	No	Spouse or partner	<input type="checkbox"/>	<input type="checkbox"/>	Children and/or other dependents	<input type="checkbox"/>	<input type="checkbox"/>	Parents or in-laws	<input type="checkbox"/>	<input type="checkbox"/>	Another person (e.g., roommate)	<input type="checkbox"/>	<input type="checkbox"/>
	Yes	No																
Spouse or partner	<input type="checkbox"/>	<input type="checkbox"/>																
Children and/or other dependents	<input type="checkbox"/>	<input type="checkbox"/>																
Parents or in-laws	<input type="checkbox"/>	<input type="checkbox"/>																
Another person (e.g., roommate)	<input type="checkbox"/>	<input type="checkbox"/>																
B18AHCOMP3	Current household composition: experimental forced-choice no/yes grid	Questionnaire design experiment item is not needed for the full-scale survey.	<div>Please indicate whether or not you currently live with any of the following individuals.</div> <table><tr><td></td><td>No</td><td>Yes</td></tr><tr><td>Spouse or partner</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Children and/or other dependents</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Parents or in-laws</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Another person (e.g., roommate)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		No	Yes	Spouse or partner	<input type="checkbox"/>	<input type="checkbox"/>	Children and/or other dependents	<input type="checkbox"/>	<input type="checkbox"/>	Parents or in-laws	<input type="checkbox"/>	<input type="checkbox"/>	Another person (e.g., roommate)	<input type="checkbox"/>	<input type="checkbox"/>
	No	Yes																
Spouse or partner	<input type="checkbox"/>	<input type="checkbox"/>																
Children and/or other dependents	<input type="checkbox"/>	<input type="checkbox"/>																
Parents or in-laws	<input type="checkbox"/>	<input type="checkbox"/>																
Another person (e.g., roommate)	<input type="checkbox"/>	<input type="checkbox"/>																
B18DLVCT	Since 2011 total time taken child-related leave	Limited analytic utility.	<div>Since July 2011, what would you estimate is the total amount of both paid and unpaid leave you have taken for the birth or adoption of a child, to raise your children, or for the medical care of your children?</div> <div><div></div><div><input type="checkbox"/> Month(s)</div><div><input type="checkbox"/> Year(s)</div></div>															

See notes at end of table.

**Table C-38. B&B:08/18 field-test items proposed for removal from the full-scale survey: 2018—Continued**

Item name	Label	Rationale	Item wording																		
Background section—Continued																					
B18DLVTP	Amount of time that was paid child-related leave	Limited analytic utility.	<div>How much of that leave for your child was paid leave?</div> <div><div></div><div><div><input type="checkbox"/> Month(s)</div><div><input type="checkbox"/> Year(s)</div><div><input type="checkbox"/> Did not take paid leave</div></div></div>																		
B18FRETIR1	Retirement accounts: experimental check-all-that-apply format	Questionnaire design experiment item is not needed for the full-scale survey.	<div>Which of the following retirement savings accounts, either provided by an employer, your own savings, or a combination do you have? (Please choose all that apply)</div> <div><div><input type="checkbox"/> IRA</div><div><input type="checkbox"/> 401(k)</div><div><input type="checkbox"/> 403(b)</div><div><input type="checkbox"/> Pension</div><div><input type="checkbox"/> Other retirement savings account</div><div><input type="checkbox"/> None of the above</div></div>																		
B18FRETIR3	Retirement accounts: experimental forced-choice no/yes grid	Questionnaire design experiment item is not needed for the full-scale survey.	<div>For each of the following please indicate whether or not you have each type of retirement savings account, either provided by an employer, your own savings, or a combination.</div> <table><tr><td></td><td>No</td><td>Yes</td></tr><tr><td>IRA</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>401(k)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>403(b)</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Pension</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Other retirement savings account</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>		No	Yes	IRA	<input type="checkbox"/>	<input type="checkbox"/>	401(k)	<input type="checkbox"/>	<input type="checkbox"/>	403(b)	<input type="checkbox"/>	<input type="checkbox"/>	Pension	<input type="checkbox"/>	<input type="checkbox"/>	Other retirement savings account	<input type="checkbox"/>	<input type="checkbox"/>
	No	Yes																			
IRA	<input type="checkbox"/>	<input type="checkbox"/>																			
401(k)	<input type="checkbox"/>	<input type="checkbox"/>																			
403(b)	<input type="checkbox"/>	<input type="checkbox"/>																			
Pension	<input type="checkbox"/>	<input type="checkbox"/>																			
Other retirement savings account	<input type="checkbox"/>	<input type="checkbox"/>																			
B18FAFFCOST1	Results of undergraduate financial costs: experimental check-all-that-apply format	Questionnaire design experiment item is not needed for the full-scale survey.	<div>Did you have to do any of the following as a result of your financial cost for your undergraduate [(if post-BA level degree in any loop or attended school after BA completion} and graduate] education. (Please choose all that apply)</div> <div><div><input type="checkbox"/> Worked more than desired</div><div><input type="checkbox"/> Took a job outside your field of study or a less desirable job</div><div><input type="checkbox"/> Took a job instead of enrolling for additional education</div><div><input type="checkbox"/> Delayed buying a home</div><div><input type="checkbox"/> Delayed getting married</div><div><input type="checkbox"/> Delayed having children</div><div><input type="checkbox"/> None of the above</div></div>																		

See notes at end of table.

**Table C-38. B&B:08/18 field-test items proposed for removal from the full-scale survey: 2018—Continued**

Item name	Label	Rationale	Item wording	No	Yes
<b>Background section—Continued</b>					
B18FAFFCOST3	Results of undergraduate financial costs: experimental forced-choice no/yes grid	Questionnaire design experiment item is not needed for the full-scale survey.	Did you have to do any of the following as a result of your financial cost for your undergraduate [if post-BA level degree in any loop or attended school after BA completion] and graduate] education.		
			Worked more than desired	<input type="checkbox"/>	<input type="checkbox"/>
			Took a job outside your field of study or a less desirable job	<input type="checkbox"/>	<input type="checkbox"/>
			Took a job instead of enrolling for additional education	<input type="checkbox"/>	<input type="checkbox"/>
			Delayed buying a home	<input type="checkbox"/>	<input type="checkbox"/>
			Delayed getting married	<input type="checkbox"/>	<input type="checkbox"/>
			Delayed having children	<input type="checkbox"/>	<input type="checkbox"/>

NOTE: BA = bachelor's degree.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18) Field Test.

## References

- Avdeyeva, O.A., and Matland, R.E. (2013). An Experimental Test of Mail Surveys as a Tool for Social Inquiry in Russia. *International Journal of Public Opinion Research*, 25(2): 173–194.
- Beebe, T.J., Davern, M.E., McAlpine, D.D., Call, K.T., and Rockwood, T.H. (2005). Increasing Response Rates in a Survey of Medicaid Enrollees: The Effect of a Prepaid Monetary Incentive and Mixed Modes (Mail and Telephone). *Medical Care*, 43: 411–420.
- Biemer, P., Murphy, J., Zimmer, S., Berry, C., Deng, G., and Lewis, K. (2016). *A Test of Web/PAPI Protocols and Incentives for the Residential Energy Consumption Survey*. Paper presented at the 2016 Annual Conference of the American Association for Public Opinion Research, Austin, TX.
- Blau, P.M. (1964). *Exchange and Power in Social Life*. Hoboken, NJ: Wiley.
- Box, G.E.P., and Cox, D.R. (1964). An Analysis of Transformations. *Journal of the Royal Statistics Society, Series B (Statistical Methodology)*, 26: 211–234.
- Callegaro, M., Murakami, H., Tepman, Z., and Henderson V. (2015). Yes-No Answers Versus Check-All in Self-Administered Modes. *International Journal of Market Research*, 57(2): 203–223.
- Cantor, D., O'Hare, B.C., and O'Connor, K.S. (2008). The Use of Monetary Incentives to Reduce Nonresponse in Random Digit Dial Telephone Surveys. In J.M. Lepkowski, N.C. Tucker, J.M. Brick, E. de Leeuw, L. Japec, P.J. Lavrakas, M.W. Link, and R.L. Sangster (Eds.), *Advances in Telephone Survey Methodology*. Hoboken, NJ: Wiley.
- Church, A.H. (1993). Estimating the Effect of Incentives on Mail Survey Response Rates: A Meta-Analysis. *Public Opinion Quarterly*, 57(1): 62–79.
- Cialdini, R.B. (1984). *Influence: The New Psychology of Modern Persuasion*. New York: Quill.
- Coppersmith, J., Vogel, L.K., Bruursema, T., and K. Feeney. (2016). Effects of Incentive Amount and Type of Web Survey Response Rates. *Survey Practice*, 9(1).



- Dillman, D.A., Smyth, J.D., and Christian, L.M. (2014). *Internet, Phone, Mail, and Mixed-Mode Surveys: The Tailored Design Method* (4<sup>th</sup> ed.). Hoboken, NJ: Wiley.
- Edwards, M.L., Dillman, D.A., and Smyth, J.D. (2014). An Experimental Test of the Effects of Survey Sponsorship on Internet and Mail Survey Response. *Public Opinion Quarterly*, 78(3): 734–750.
- Galesic, M., and Bosnjak, M. (2009). Effects of Questionnaire Length on Participation and Indicators of Response Quality in a Web Survey. *Public Opinion Quarterly*, 73(2): 349–360.
- Goeritz, A.S. (2006). Incentives in Web Studies: Methodological Issues and Review. *International Journal of Internet Science*, 1: 58–70.
- Groves, R.M., Cialdini, R., and Couper, M. (1992). Understanding the Decision to Participate in a Survey. *Public Opinion Quarterly*, 56(4): 475–495.
- Groves, R.M., and Couper, M. (1998). *Nonresponse in Household Interview Surveys*. Hoboken, NJ: Wiley.
- Groves R.M., and Heeringa, S.G. (2006). Responsive Design for Household Surveys: Tools for Actively Controlling Survey Errors and Costs. *Journal of the Royal Statistical Society, Series A (Statistics in Society)*, 169(3): 439–457.
- Groves, R.M., and McGonagle, K.A. (2001). A Theory-Guided Interviewer Training Protocol Regarding Survey Participation. *Journal of Official Statistics*, 17: 249–265.
- Groves, R.M., Presser, S., Tourangeau, R., West, B.T., Couper, M.P., Singer, E., and Toppe, C. (2012). Support for the Survey Sponsor and Nonresponse Bias. *Public Opinion Quarterly*, 76: 512–524.
- Groves, R.M., Singer, E., and Corning, A. (2000). Leverage-Saliency Theory of Survey Participation. Description and Illustration. *Public Opinion Quarterly*, 64: 299–308.
- Heberlein, T.A., and Baumgartner, R. (1978). Factors Affecting Response Rates to Mailed Questionnaires: A Quantitative Analysis of the Published Literature. *American Sociological Review*, 43(4): 447–462.
- LeClere, F., Plumme, S., Vanicek, J., Amaya, A., and K. Carris. (2012). *Household Early Bird Incentives: Leveraging Family Influence to Improve Household Response Rates*. Presented at the American Statistical Association Joint Statistical Meetings, Section on Survey Research, San Diego, CA.

- Lynn, P. (2016). Targeted Appeals for Participation in Letters to Panel Survey Members. *Public Opinion Quarterly*, 80(3): 771–782.
- Lynn, P. (2017). From Standardised to Targeted Survey Procedures for Tackling Non-Response and Attrition. *Survey Research Methods*, 17(1): 93–103.
- Massey D.S., and Tourangeau R. (2012). Where Do We Go From Here? Nonresponse and Social Measurement. *The Annals of the American Academy of Political and Social Science*, 645(1): 222–236.
- Medway, R.L., and Tourangeau, R. (2015). Response Quality in Telephone Surveys: Do Prepaid Incentives Make a Difference? *Public Opinion Quarterly*, 79(2): 524–543.
- Messer, B.L., and Dillman, D.A. (2011). Surveying the General Public Over the Internet Using Address-Based Sampling and Mail Contact Procedures. *Public Opinion Quarterly*, 75(3): 429–457.
- Millar, M.M., and Dillman, D.A. (2011). Improving Response to Web and Mixed-Mode Surveys. *Public Opinion Quarterly*, 75(2): 249–269.
- Mowen, J.C., and Cialdini, R.B. (1980). On Implementing the Door-in-the-Face Compliance Technique in a Business Context. *Journal of Marketing Research*, 17: 253–258.
- Parsons, L., and Manierre, M.J. (2014). Investigating the Relationship Among Prepaid Token Incentives, Response Rates, and Nonresponse Bias in a Web Survey. *Field Methods*, 26(2): 191–204.
- Shettle, C., and Mooney, G. (1999). Monetary Incentives in US Government Surveys. *Journal of Official Statistics*, 15(2): 231–250.
- Singer, E. (2002). The Use of Incentives to Reduce Nonresponse in Household Surveys. In R.M. Groves, D.A. Dillman, J.L. Eltinge, and R.J.A. Little (Eds.), *Survey Nonresponse*. Hoboken, NJ: Wiley.
- Smyth, J.D., Dillman, D.A., Christian, L.M., and Stern, M.J. (2006). Comparing Check-All and Forced-Choice Question Formats in Web Surveys. *Public Opinion Quarterly*, 70(1): 66–77.
- Satterthwaite, F.E. (1946). An Approximate Distribution of Estimates of Variance Components. *Biometrics Bulletin*, 2, 110–114.

- Thomas, R.K., Barlas, F.M., Buttermore, N.R., and Smyth, J.D. (2017). *Acquiescence Bias in Yes-No Grids? The Survey Says... No*. Presented at the 2017 Annual Conference of the American Association for Public Opinion Research, New Orleans, LA.
- Tourangeau, R., Conrad, F.G., and Couper, M. (2013). *The Science of Web Surveys*. New York: Oxford University Press.
- Tourangeau, R., Groves, R.M., and Redline, C.D. (2010). Sensitive Topics and Reluctant Respondents. Demonstrating a Link Between Nonresponse Bias and Measurement Error. *Public Opinion Quarterly*, 74(3): 413–432.
- Tukey, J.W. (1977). *Exploratory Data Analysis*. Reading, MA: Addison-Wesley.

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## Appendix E. Facsimile of Full-scale Instrument

**B18CINTRO**

[If B&B:08/12 survey respondent]

[{If telephone survey} I'd {else} We'd] like to ask you some questions about any additional education you've had since the last time we spoke to you in [B&B:08/12 survey date].

[else]

[{If telephone survey} I'd {else} We'd] like to ask you some questions about any additional education you've had since completing your bachelor's degree at [NPSAS institution].

**B18CPSTGRD**

[If B&B:08/12 survey respondent]

Have you attended a college, university, or trade school for a degree or certificate since [B&B:08/12 survey date]?

(Do not include certificates of completion such as those earned through participation in short-term training.)

[else]

Have you attended a college, university, or trade school for a degree or certificate since completing your bachelor's degree at [NPSAS institution]?

(Do not include certificates of completion such as those earned through participation in short-term training.)

– 1 = Yes

– 0 = No

**B18CPREVSCH01**

[If loop = 1]

Last time we contacted you, you provided us with the schools you attended since completing your bachelor's degree at [NPSAS institution].

Have you attended [{if more than 1 school left on pick list} any of these schools {else} this school] since [B&B:08/12 survey date]?

[else]

Have you attended [{if more than 1 school left on pick list} any of these schools {else} this school] since [B&B:08/12 survey date]?

– 1 = [postbaccalaureate institution from B&B:08/12 survey]

– 2 = [Postbaccalaureate institution 2 from B&B:08/12 survey]

– 3 = [Postbaccalaureate institution 3 from B&B:08/12 survey]

– 4 = [Postbaccalaureate institution 4 from B&B:08/12 survey]

– 5 = [Postbaccalaureate institution 5 from B&B:08/12 survey]

– 99 = Did not attend [{if more than 1 school left on pick list} any of these schools {else} this school] since [B&B:08/12 survey date]

**B18CSCH01**

What is the name of the school that you have attended since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} completing your bachelor's degree]?

([If loop = 1] If you have attended more than one other school since [if B&B:08/12 survey respondent] [B&B:08/12 survey date] {else} completing your bachelor's degree at [NPSAS institution], tell us about the most recent school first.] If you can't find your school, click "School not listed.")

– School name:

### **B18CCREN01**

[If B18COTH0\* = 1 from previous valid loop]

Are you currently attending [postbaccalaureate institution] for this additional degree or certificate?

[else]

Are you currently attending [postbaccalaureate institution]?

– 1 = Yes

– 0 = No

### **B18CDEG01**

[If B18CCREN01 = 1]

What [if B18COTH0\* = 1 in previous valid loop] other] degree or certificate are you currently working on at [postbaccalaureate institution]?

(You can select only one degree here. You will have an opportunity to tell us about other enrollment later.)

[else]

What was the [if B18COTH0\* = 1 in previous valid loop] other] type of degree or certificate you worked on at [postbaccalaureate institution]?

(You can select only one degree here. You will have an opportunity to tell us about other enrollment later.)

– 1 = Undergraduate certificate or diploma, including those leading to a certification or license

– 2 = Associate's degree

– 3 = Bachelor's degree

– 4 = Postbaccalaureate certificate

– 5 = Master's degree

– 6 = Post-master's certificate

– 7 = Doctoral degree - professional practice (e.g., chiropractic, dentistry, law, medicine, optometry, pharmacy, podiatry, or veterinary medicine)

– 8 = Doctoral degree - research/scholarship (e.g., PhD, EdD, etc.)

– 9 = Doctoral degree - other

### **B18CFENR01**

In what month and year did you first attend [postbaccalaureate institution] for your [postbaccalaureate degree or certificate]?

– Month:

– January - December

– Year:

– Before 2008 - 2019

**B18CCOMP01**

[If B18CCREN01 = 1]

Have you completed your program of study and received your [postbaccalaureate degree or certificate] from [postbaccalaureate institution]?

[else]

Did you complete your program of study and receive your [postbaccalaureate degree or certificate] from [postbaccalaureate institution]?

- 1 = Yes
- 0 = No

**B18CDGMY01**

In what month and year was your [postbaccalaureate degree or certificate] awarded by [postbaccalaureate institution]?

- Month
- January - December
- Year
- Before 2008 - 2019

**B18CENRTDG01**

[{If B18CCREN01 = 1} Have you received {else} Did you receive] a master's degree from [postbaccalaureate institution] while enrolled in your [postbaccalaureate degree or certificate] program?

(Answer "no" if you received a master's degree through a separate program for which the ultimate objective was a master's degree.)

- 1 = Yes
- 0 = No

**B18CENRTMY01**

In what month and year did you receive the master's degree that you earned on the way to your [postbaccalaureate degree or certificate]?

- Month
- January - December
- Year
- Before 2008 - 2019

**B18CLENR01**

In what month and year did you last attend [postbaccalaureate institution] for your [postbaccalaureate degree or certificate]?

- Month
- January - December
- Year
- Before 2008 - 2019

**B18CONLINE01**

[If B18CCREN01 = 1]

Is your entire [postbaccalaureate degree or certificate] program at [postbaccalaureate institution] online?

[else]

Was your entire [postbaccalaureate degree or certificate] program at [postbaccalaureate institution] online?

- 1 = Yes
- 0 = No

**B18CENROLL01**

If your [postbaccalaureate degree or certificate] program at [postbaccalaureate institution] was not available in an online format, how likely is it that you would have enrolled in an on-campus or in-person program?

- 1 = Not at all likely
- 2 = Somewhat likely
- 3 = Likely
- 4 = Very likely

**B18CMAJ01**

What [{if B18CCREN01 = 1} is {else} was] your primary major or field of study for your [postbaccalaureate degree or certificate] at [postbaccalaureate institution]?

(If you can't find your major or field of study, click "Major not listed".)

**B18CENST01**

[If B18CCREN01 = 1]

For the period of time you have been attending [postbaccalaureate institution] for your [postbaccalaureate degree or certificate], have you been mainly a full-time or part-time student, or an equal mix of both?

[else]

For the period of time you attended [postbaccalaureate institution] for your [postbaccalaureate degree or certificate], were you mainly a full-time or part-time student, or an equal mix of both?

- 1 = Full-time
- 2 = Part-time
- 3 = Equal mix of full-time and part-time

**B18CFINAIDG01**

[If B18CCREN01 = 1]

Please indicate whether or not you have used any of the following to pay for your [postbaccalaureate degree or certificate] at [postbaccalaureate institution].

[else]

Please indicate whether or not you used any of the following to pay for your [postbaccalaureate degree or certificate] at [postbaccalaureate institution].

- Federal student loans
  - 1 = Yes
  - 0 = No
- Private student loans
  - 1 = Yes
  - 0 = No
- Grants or scholarships
  - 1 = Yes
  - 0 = No
- Assistantships
  - 1 = Yes
  - 0 = No
- Fellowships
  - 1 = Yes
  - 0 = No
- Work-Study (i.e., federal, state, or institution work-study)
  - 1 = Yes
  - 0 = No
- Employer assistance
  - 1 = Yes
  - 0 = No
- Veterans education benefits
  - 1 = Yes
  - 0 = No
- Financial assistance from anyone
  - 1 = Yes
  - 0 = No
- Personal loan from a bank or other source (e.g., family, friend, etc.)
  - 1 = Yes
  - 0 = No
- Your own money (e.g., earnings from employment, savings, etc.)
  - 1 = Yes
  - 0 = No
- Other sources
  - 1 = Yes
  - 0 = No

**B18CHRDSP01**

Please indicate how much you disagree or agree with the following statement.

The financial cost of obtaining my [postbaccalaureate degree or certificate] at [postbaccalaureate institution] [{if B18CCREN01 = 1} poses {else} posed] a significant hardship for me. Financial cost includes tuition, fees, books, and lost income due to not working or working less.

Would you say...

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree

- 4 = Agree
- 5 = Strongly agree

**B18COTH01**

[If B&B:08/12 survey respondent]

Besides the [postbaccalaureate degree or certificate] you just told [{if telephone survey} me {else} us] about, have you attended [postbaccalaureate institution] for any additional degrees or certificates since the last time we spoke to you in [B&B:08/12 survey date]?

[else]

Besides the [postbaccalaureate degree or certificate] you just told [{if telephone survey} me {else} us] about, have you attended [postbaccalaureate institution] for any additional degrees or certificates since completing your bachelor's degree at [NPSAS institution]?

- 1 = Yes
- 0 = No

**B18CENR01**

[If loop = 1]

Besides the [postbaccalaureate degree or certificate] at [postbaccalaureate institution] you just told [{if telephone survey} me {else} us] about, have you attended any other schools for additional degrees or certificates since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} since completing your bachelor's degree requirements]?

[else]

You've told [{if telephone survey} me {else} us] that you have attended the following schools since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} since completing your bachelor's degree requirements]:

- [Postbaccalaureate institution 1]
- [Postbaccalaureate institution X]

Have you attended any other schools for a degree or certificate program since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} completing your bachelor's degree requirements]?

- 1 = Yes
- 0 = No

**B18CCERT**

Do you have a vocational or technical certificate or diploma?

(Examples of vocational or technical certificates and diplomas include a digital arts certificate, a cosmetology diploma, or a motorcycle mechanics diploma.)

- 1 = Yes
- 0 = No

**B18CNDGCWK**

[If B&B:08/12 survey respondent]



Since we last spoke to you in [B&B:08/12 survey date], have you attended a college, university, or trade school for any coursework that is not part of a degree or certificate program?

(Non-degree coursework may be for transfer credit, or for recreation, or personal enjoyment.)

[else]

Since completing your bachelor's degree at [NPSAS institution], have you attended a college, university, or trade school for any coursework that is not part of a degree or certificate program?

(Non-degree coursework may be for transfer credit, or for recreation, or personal enjoyment.)

– 1 = Yes

– 0 = No

### **B18CLNINTRO**

Next, [{if telephone survey} I {else} we] will be asking you questions about your education loans and loan repayment.

### **B18CLOANAMT**

[If B&B:08/12 survey respondent]

Including all federal and private student loans, how much have you borrowed for your education since the last time we spoke to you in [B&B:08/12 survey date]?

[else]

Including all federal and private student loans, how much have you borrowed for your education since completing your bachelor's degree requirements?

– \$\_\_\_\_\_.00

☐ Did not have any federal or private student loans

### **B18CPRIVAMT**

How much of that [{if B18CLOANAMT ne missing} \$[B18CLOANAMT] {else} total amount] was in private loans?

Private loans are offered by private lenders, and no federal application forms are needed. Private loans are credit-based and may require a cosigner if the student does not have an established credit history.

– \$\_\_\_\_\_.00

☐ Did not have any private student loans

### **B18CPRIVEST**

Please indicate the range for how much of that [{if B18CLOANAMT ne missing} \$[B18CLOANAMT] {else} total amount] was in private loans. Would you say it was...

– 0 = \$0

– 1 = \$1 - \$9,999

– 2 = \$10,000 - \$19,999

– 3 = \$20,000 - \$29,999

– 4 = \$30,000 - \$39,999

– 5 = \$40,000 - \$49,999

– 6 = \$50,000 - \$59,999

- 7 = \$60,000 - \$69,999
- 8 = \$70,000 - \$79,999
- 9 = \$80,000 - \$89,999
- 10 = \$90,000 - \$99,999
- 11 = \$100,000 or more
- -1 = Don't know

**B18CPRIVSTAT1**

What is the official status of your private student loan(s)?

(Please answer based on any private student loans including loans for your bachelor's degree and for any education since your bachelor's degree.)

- 1 = Already paid off
- 2 = In repayment
- 3 = Temporarily deferring payment
- 4 = In default
- 5 = Multiple loans in different repayment statuses

**B18CPRIVSTAT2**

You just indicated that you have multiple private student loans. Please indicate the official status for your private student loans.

- At least one loan has been paid back in full
- At least one loan in repayment
- At least one loan in deferment
- At least one loan in default

**B18CPRIVPMT**

How much do you typically pay each month on your private loans, even if it is different from your minimum monthly payment?

(Please answer based on any private student loans you have, including loans for your bachelor's degree and for any education since your bachelor's degree.)

- \$\_\_\_\_\_.00 per month

**B18CPRIVPEST**

Please indicate the range that best represents the total current monthly payment for your private loans. Would you say it was...

- 0 = \$0.00
- 1 = \$0.01 - \$49.99
- 2 = \$50.00 - \$99.99
- 3 = \$100.00 - \$149.99
- 4 = \$150.00 - \$199.99
- 5 = \$200.00 - \$249.99
- 6 = \$250.00 - \$499.99
- 7 = \$500.00 - \$749.99
- 8 = \$750.00 - \$999.99
- 9 = \$1,000.00 or more
- -1 = Don't know

**B18CPRIVMORE**

When repaying student loans, you can pay more than the minimum monthly payment in order to reduce the interest you pay and the total cost of your loan over time.

In the last 12 months, have you paid more than the minimum monthly payment for your private student loans?

- 0 = No, have not paid more than the minimum amount
- 1 = Yes, paid more than the minimum amount 1 or 2 times
- 2 = Yes, paid more than the minimum amount 3 or more times

**B18CPRIVMISS**

In the last twelve months, have you missed a private student loan payment?

- 0 = No, all payments were made on time
- 1 = Yes, missed 1 or 2 payments
- 2 = Yes, missed 3 or more payments

**B18CPRIVDEF**

Have you ever defaulted on a private student loan?

(Default typically occurs when payments are not made for a certain length of time specified by the lender and arrangements [e.g., deferment or forbearance] have not been made to postpone payments. Students in default are contacted by a collection agency and defaults are often reported on a person's credit history.)

- 1 = Yes
- 0 = No
- -1 = Don't know

**B18CELNSTAT1**

What is the official status of your federal student loan(s)?

(Please answer based on any federal student loans including loans for your bachelor's degree and for any education since your bachelor's degree.)

- 1 = Already paid off or forgiven
- 2 = In repayment
- 3 = Temporarily deferring payment
- 4 = In default
- 5 = Multiple loans in different repayment statuses

**B18CELNSTAT2**

You just indicated that you have multiple federal student loans. Please indicate the official status for your federal student loans.

- At least one loan has been paid back in full or forgiven
- At least one loan in repayment
- At least one loan in deferment
- At least one loan in default

**B18CFEDMORE**

When repaying student loans, you can pay more than the minimum monthly payment in order to reduce the interest you pay and the total cost of your loan over time.

In the last 12 months, how often have you paid more than the minimum monthly payment for your federal student loans?

- 0 = No, have not paid more than the minimum amount
- 1 = Yes, paid more than the minimum amount 1 or 2 times
- 2 = Yes, paid more than the minimum amount 3 or more times

**B18CFEDMISS**

In the last 12 months, have you missed a federal student loan payment?

- 0 = No, all payments were made on time
- 1 = Yes, missed 1 to 2 payments
- 2 = Yes, missed 3 or more payments

**B18CFEDDEF**

Have you ever defaulted on a federal student loan?

(Default typically occurs when payments are not made for a certain length of time specified by the lender and arrangements [e.g., deferment or forbearance] have not been made to postpone payments. Students in default are contacted by a collection agency and defaults are often reported on a person's credit history.)

- 1 = Yes
- 0 = No
- -1 = Don't know

**B18CIDRPART**

Are you enrolled in an income-driven repayment (IDR) plan, or in the process of enrolling in an IDR plan for your federal student loans?

(An income-driven repayment plan sets your monthly student loan payment at an amount that is intended to be affordable based on your income and family size. These plans include the Revised Pay As You Earn Repayment Plan [REPAYE Plan], Pay As You Earn Repayment Plan [PAYE Plan], Income-Based Repayment Plan [IBR Plan], and Income-Contingent Repayment Plan [ICR Plan].)

- 1 = Yes
- 0 = No

**B18CIDRAWARE**

Have you heard of income-driven repayment (IDR) plans for your federal student loans?

- 1 = Yes
- 0 = No

**B18CIDRWHY**

What are the reasons why you are not enrolled in an income-driven repayment plan for your federal student loans?

- Did not think I was eligible

- Thought applying would take too much time or effort
- Did not need lower monthly loan payments
- Did not like terms of these plans (i.e., time to repayment)
- Other

**B18DINTRO**

[If B&B:08/12 survey respondent]

In the next section, [{if telephone survey} I {else} we] would like to ask some questions about your employment since we last spoke to you in [B&B:08/12 survey date]. We are interested in all paid employment, including full-time and part-time employment, self-employment, [{if B18CDEG0\* > 3 in any loop} graduate assistantships,] and paid internships.

[else]

In the next section, [{if telephone survey} I {else} we] would like to ask some questions about your employment since July 2012. We are interested in all paid employment, including full-time and part-time employment, self-employment, [{if B18CDEG0\* > 3 in any loop} graduate assistantships,] and paid internships.

**B18DCUREMP**

Are you currently employed?

- 1 = Yes
- 0 = No

**B18DEMPFTPT**

Are you currently employed full-time or part-time?

- 1 = Full-time
- 2 = Part-time
- 3 = Both full-time and part-time

**B18DANYJOBS**

[If B&B:08/12 survey respondent]

Have you been employed at any time since [B&B:08/12 survey date]?

[else]

Have you been employed at any time since July 2012?

- 1 = Yes
- 0 = No

**B18DNUMEMP**

[If B&B:08/12 survey respondent]

How many employers have you had since [B&B:08/12 survey date]?

(If you have been self-employed at any point since [B&B:08/12 survey date] include yourself as an employer.)

[else]

How many employers have you had since July 2012?

(If you have been self-employed at any point since July 2012 include yourself as an employer.)

– \_\_\_\_\_ employer(s)

### **B18CLICENSE**

Do you have an active professional certification or a state or industry license?

(Examples of professional certifications or state or industry licenses include a real estate license, a medical assistant certification, an elementary or secondary education license, or an IT certification.)

– 1 = Yes

– 0 = No

### **B18DPRVEMP01**

[If loop = 1]

Last time we spoke with you, you provided us with the [{if 1 employer on pick list} name of the employer {else} names of all employers] you had since completing your bachelor's degree.]

Did you continue to work for [{if 1 employer on pick list} this employer {else} any of these employers] at any time since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} July 2012]?

[else]

Did you continue to work for [{if 1 employer on pick list} this employer {else} any of these employers] at any time since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} July 2012]?

– 1 = [Employer name 1 from B&B:08/12 survey]

– 2 = [Employer name 2 from B&B:08/12 survey]

– 3 = [Employer name 3 from B&B:08/12 survey]

– 4 = [Employer name 4 from B&B:08/12 survey]

– 5 = [Employer name 5 from B&B:08/12 survey]

– 6 = [Employer name 6 from B&B:08/12 survey]

– 7 = [Employer name 7 from B&B:08/12 survey]

– 8 = [Employer name 8 from B&B:08/12 survey]

– 9 = [Employer name 9 from B&B:08/12 survey]

– 10 = [Employer name 10 from B&B:08/12 survey]

– 11 = [Employer name 11 from B&B:08/12 survey]

– 12 = [Employer name 12 from B&B:08/12 survey]

– 99 = Did not work for [{if 1 employer on pick list} this employer {else} any of these employers] since [B&B:08/12 survey date]

### **B18DEMPLOY01**

[If loop = 1]

What is the name of your current or most recent employer?

(If you are not currently employed, please provide the name of the employer where you were last employed. If you have more than one employer, tell [{if telephone survey} me {else} us] about only one of them now. [{If telephone survey} I {else} We] will collect the names of any other employers later.)

[else]

What is the name of another employer you have worked for at any time since [{if B&B:08/12 survey date ne missing} [B&B:08/12 survey date] {else} July 2012]?

(If you have more than one additional employer, tell [{if telephone survey} me {else} us] about only one of them now. [{If telephone survey} I {else} We] will collect the names of any other employers later.)

- Employer name:
  - ☐ Check here to indicate self-employment

### **B18DEMPZIP01**

[If employer name ne missing]

What is the ZIP code for the primary location where you work(ed) with [employer name]?

(If you do not know the ZIP code you can enter the city name. If you are still unable to find your ZIP code, click “ZIP Code not listed.”)

[else]

What is the ZIP code for the primary location where you work(ed)?

(If you do not know the ZIP code you can enter the city name. If you are still unable to find your ZIP code, click “ZIP Code not listed.”)

- Employer ZIP code:
  - ☐ Location not in the United States or a US territory

### **B18DSTART01**

[If employer name ne missing]

In what month and year were you first employed by [employer name]?

[else if self-employed]

In what month and year were you first self-employed?

[else]

In what month and year were you first employed by this employer?

- Starting month
  - January - December
- Starting year
  - Before 2008 - 2019

### **B18DEND01**

[If employer name ne missing]

In what month and year were you last employed by [employer name]?

(If you are currently employed by [employer name] select the checkbox below.)

[else if self-employed]

In what month and year were you last self-employed?

(If you are currently self-employed select the checkbox below.)

[else]

In what month and year were you last employed by this employer?

(If you are currently employed by this employer select the checkbox below.)

- ☐ [If employer name ne missing]
- ☐ Currently employed by [employer name]
- ☐ [else if self-employed]
- ☐ Currently self-employed
- ☐ [else]
- ☐ Currently employed by this employer
- Month
- January - December
- Year
- 2012 - 2019

### **B18DWKCONT01**

[{If employer start date ne Unspecified Date and employer end date ne Unspecified Date} Between {else if employer end date ne Unspecified Date} Between {else} Since] [{if employer start date before B&B:08/12 survey date} [B&B:08/12 survey date] {else if employer start date ne Unspecified Date} [employer start date] {else} [B&B:08/12 survey date]] [{if currently employed} and today {else if employer end date ne Unspecified Date}] and [employer end date]], did you have any periods where you were not [{if employer name ne missing} employed by [employer name] {else if self-employed} self-employed {else} employed by this employer] that lasted longer than one month (i.e., your employment was not one continuous period)?

- 1 = Yes
- 0 = No

### **B18DWKMON01**

[{If B18DWKCONT01 = 1} You just indicated having a period of at least one month where you were not [{if employer name ne missing} employed by [employer name] {else if self-employed} self-employed {else} employed by this employer].]

[{If employer start date ne Unspecified Date and employer end date ne Unspecified Date} Between {else if employer end date ne Unspecified Date} Between {else} Since] [{if employer start date before B&B:08/12 survey date} [B&B:08/12 survey date] {else if employer start date ne Unspecified Date} [employer start date] {else} [B&B:08/12 survey date]] [{if currently employed} and today {else if employer end date ne Unspecified Date}] and [employer end date]], which months [{if currently employed} have you been {else} were you] [{if employer name ne missing} employed by [employer name] {else if self-employed} self-employed {else} employed by this employer]?

([{If employer start date ne Unspecified Date and employer end date ne Unspecified Date and employer start date not before B&B:08/12 survey date} The starting and [{if currently employed} current {else} ending] month of your [{if employer name ne missing} employment at [employer name] {else if self-employed} self-employment {else} employment at this employer] have been selected.] Selected months will be shaded blue. If you [{if currently employed} have you been {else} were you] employed for any portion of a month by this employer, select that month.)



– [Calendar displaying months [B&B:08/12 survey date] – [current month]]

### **B18DEMPLOYA01**

We are interested in learning more about your [{if employer name ne missing} employment with [employer name] {else if self-employed} self-employment {else} employment with this employer] and how it may have changed.

What was your starting salary (including bonuses, tips, and commissions)?

- \$ \_\_\_\_\_
- 1 = Per hour
- 2 = Per week
- 3 = Per month
- 4 = Per year

What were your starting average hours worked per week?

- \_\_\_\_\_ hours

### **B18DEMPLOYC01**

What [{if currently employed} is your current {else} was your ending] salary (including bonuses, tips, and commissions)?

- ☐ Starting salary and [{if currently employed} current salary are {else} ending salary were] the same

- \$ \_\_\_\_\_
- 1 = Per hour
- 2 = Per week
- 3 = Per month
- 4 = Per year

What [{if currently employed} is your current {else} was your ending] average hours worked per week?

- ☐ Starting hours per week and [{if currently employed} current hours per week are {else} ending hours per week were] the same
- \_\_\_\_\_ hours

### **B18DOTHJOB01**

[If B&B:08/12 survey date ne missing]

Aside from the [{if loop = 1} employer {else} employers] you already told [{if telephone survey} me {else} us] about, have you worked for any other employers since [B&B:08/12 survey date]?

(Answer "Yes" for any additional full-time and part-time employment, self-employment, [{if B18CDEG0\* > 3 in any loop} graduate assistantships,] and paid internships.)

[else]

Aside from the [{if loop = 1} employer {else} employers] you already told [{if telephone survey} me {else} us] about, have you worked for any other employers since July 2012?

(Answer "Yes" for any additional full-time and part-time employment, self-employment, [{if B18CDEG0\* > 3 in any loop} graduate assistantships,] and paid internships.)

- 1 = Yes

– 0 = No

### **INTJBLP01**

[If abbreviated survey respondent]

Now, we have a question that will focus on your employment at [employer name]].

[else if loop = 1]

We have some [{if number of employers = 1} more questions about the employer {else if number of jobs = 1} questions about one employer {else} questions about some of the employers] that you reported. The next questions will focus on your employment at [employer name]].

[else]

Next, we have some questions that will focus on your employment at [employer name]].

### **B18DOCCEX01**

[If currently employed]

What is your current job title for your employment at [employer name]] [{if telephone survey} so I can try to select the closest match from the options returned]?

([{If web survey} Select the closest match from the options returned.] If you are unable to find a close match for [{if telephone survey} this {else} your] job title, click “Job title not listed.”)

[else]

When you were last [{if employer name = 'self-employment'} self-employed {else} employed by [employer name]], what was your job title [{if telephone survey} so I can try to select the closest match from the options returned]?

([{If web survey} Select the closest match from the options returned.] If you are unable to find a close match for [{if telephone survey} this {else} your] job title, click “Job title not listed.”)

– Job Title:

### **B18DJDUTY01**

As [a/an] [job title], what [{if currently employed} are {else} were]] your job duties?

– Job Duties:

### **B18DEMPY01**

In this job, what type of company or organization [{if currently employed} do {else} did] you work for? [{If currently employed} Is {else} Was] it...

- 1 = The school where you are currently enrolled as a student
- 2 = A for-profit company
- 3 = A nonprofit organization
- 4 = A local, state, or federal government agency (including public schools and universities)
- 5 = The military (including civilian employees of the military)
- 6 = Other

### **B18DIIND01**

Would you classify the primary industry for [{if employer name = 'self-employment'} your self-employment {else} [employer name]] as...

- 2 = Accommodations and food service
- 1 = Education or education services
- 3 = Finance and insurance
- 4 = Healthcare, social assistance, or childcare
- 5 = Professional, scientific, and technical services
- 6 = Retail sales or retail trade
- 7 = Something else

**B18D2IND01**

Would you say the primary industry for [{if employer name = 'self-employment'} your self-employment {else} [employer name]] is...

- 8 = Administrative and support services
- 9 = Agriculture, forestry, fishing, and hunting
- 10 = Arts, entertainment, and recreation
- 11 = Automotive repair and maintenance
- 12 = Construction
- 13 = Information, motion pictures, Internet, and telecommunications
- 14 = Management of companies or enterprises
- 15 = Manufacturing
- 16 = Mining
- 17 = Personal care services
- 18 = Public administration, government, public safety, and military
- 19 = Real estate, rental and leasing
- 20 = Transportation and warehousing
- 21 = Utilities
- 22 = Waste management and environmental remediation
- 23 = Wholesale trade
- 24 = Other industry not listed

**B18DEDIND01**

In which level of the education industry [{if currently employed} is {else} was] this job?

- 1 = Preschool/Pre-K
- 2 = K-12 school
- 3 = College, university, trade school, other postsecondary institution
- 4 = Education support services (non-government)
- 5 = Other

**B18DJBRESP01**

As [a/an] [job title], [{if currently employed} do {else} did] you...

- Supervise the work of others?
  - 1 = Yes
  - 0 = No
- Participate in hiring and/or firing decisions?
  - 1 = Yes
  - 0 = No
- Participate in setting salary rates for other employees?
  - 1 = Yes

– 0 = No

### B18DAUTONM01

Which of the following statements best describes your job as [a/an] [job title]?

- 1 = Someone else [{if currently employed} decides {else} decided] what [{if telephone survey} you {else} I] [{if currently employed} do {else} did] and how [{if telephone survey} you {else} I] [{if currently employed} do {else} did] it
- 2 = Someone else [{if currently employed} decides {else} decided] what [{if telephone survey} you {else} I] [{if currently employed} do {else} did], but [{if telephone survey} you {else} I] [{if currently employed} decide {else} decided] how [{if telephone survey} you {else} I] [{if currently employed} do {else} did] it
- 3 = [{If telephone survey} You {else} I] [{if currently employed} have {else} had] the freedom in deciding what [{if telephone survey} you {else} I] [{if currently employed} do {else} did] and how [{if telephone survey} you {else} I] [{if currently employed} do {else} did] it
- 4 = [{If telephone survey} You {else} I] [{if currently employed} are {else} were] [{if currently employed} am {else} was] basically [{if telephone survey} your {else} my] own boss

### B18DCURTL01

In your job as [a/an] [job title], [{if currently employed} are {else} were] you allowed to telecommute or work remotely?

- 1 = Yes
- 2 = No, it [{if currently employed} does {else} did] not make sense for [(if telephone survey) your {else} my] job
- 3 = No, it [{if currently employed} is {else} was] possible but not offered for [{if telephone survey} your {else} my] job

### B18DCURFLX01

[{If not self-employed} Some employers allow their employees flexibility in the hours they work, that is, they do not have to work a set schedule as long as a minimum number of hours are worked in a pay period.]

Would you say your [{if currently employed} current schedule {else} schedule for your employment at [employer name]] [{if currently employed} is {else} was] very flexible, somewhat flexible, or not flexible?

- 1 = Very flexible
- 2 = Somewhat flexible
- 3 = Not flexible

### B18DBENANY01

[{If currently employed} Does {else} Did] [{if employer name = 'self-employment'} your self-employment {else} [employer name]] offer you any of the following benefits? Do not include salary, hourly pay, bonuses, tips, etc.

- Health insurance
  - 1 = Yes
  - 0 = No
- Retirement plans
  - 1 = Yes

- 0 = No
- Paid vacation, holidays, or sick leave
- 1 = Yes
- 0 = No

**B18DNSFA01**

[{If currently employed} Do {else} Did] your duties in this job require a bachelor's degree or higher?

- 1 = Yes
- 0 = No

**B18DCURL01**

[If currently employed]

Do you consider this [{if employer name = 'self-employment'} self-employment {else} job at [employer name]] to be part of a career you are pursuing in your occupation or industry?

[else]

When you were [{if employer name = 'self-employment'} self-employed {else} employed at [employer name]], did you consider this job to be part of a career you were pursuing in your occupation or industry?

- 1 = Yes
- 0 = No

**B18DLICREL01**

[If currently employed]

Is your certification or license related to the work you do at your job?

[else]

Was your certification or license related to the work you did at your job?

- 1 = Yes
- 0 = No

**B18DLICOND01**

[If currently employed]

Is your certification or license required for the work you do at your job?

[else]

Was your certification or license required for the work you did at your job?

- 1 = Yes
- 0 = No

**B18DCHNG01**

For each of the following, please indicate whether or not it is a reason you are no longer [{if employer name = 'self-employment'} self-employed {else} employed by [employer name]].

- Wanted better salary or benefits
- 1 = Yes

- 0 = No
- Wanted a different job in the same or similar field
  - 1 = Yes
  - 0 = No
- Wanted a job in a different field
  - 1 = Yes
  - 0 = No
- Wanted better opportunities (e.g. career advancement or job security)
  - 1 = Yes
  - 0 = No
- Position was temporary or seasonal
  - 1 = Yes
  - 0 = No
- Laid off, terminated, or contract not renewed
  - 1 = Yes
  - 0 = No
- Relocated to another area
  - 1 = Yes
  - 0 = No
- Care for children, family members, and other dependents
  - 1 = Yes
  - 0 = No
- Health reasons
  - 1 = Yes
  - 0 = No
- Other reason(s)
  - 1 = Yes
  - 0 = No

### **B18DSINGLE01**

Which of the following is the most important reason you are no longer [{if employer name = 'self-employment'} self-employed {else} employed by [employer name]]?

- 1 = Wanted better salary or benefits
- 2 = Wanted a different job in the same or similar field
- 3 = Wanted a job in a different field
- 4 = Wanted better opportunities (e.g. career advancement or job security)
- 5 = Position was temporary or seasonal
- 6 = Laid off, terminated, or contract not renewed
- 7 = Relocated to another area
- 8 = Care for children, family members, and other dependents
- 9 = Health reasons
- 10 = Other reason(s)

### **B18DJSAT01**

On a scale from 1 to 5, where 1 means “very dissatisfied” and 5 means “very satisfied”, please indicate your level of satisfaction or dissatisfaction with each of the following areas of this job.

- Wages and bonuses

- 1 = 1 (Very dissatisfied)
- 2 = 2 (Somewhat dissatisfied)
- 3 = 3 (Neither satisfied nor dissatisfied)
- 4 = 4 (Somewhat satisfied)
- 5 = 5 (Very satisfied)
- Benefits
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)
- Opportunities for promotion
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)
- Importance of your work
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)
- Challenge of your work
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)
- Job security
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)
- Ability to balance work and family obligations
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)
- Commute time
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither satisfied nor dissatisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)

**B18DNWINTRO**

Based on the employment dates you entered, it appears that there [{if number of non-working spans = 1} was one time {else} were [number of non-working spans] times] you were not employed since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} July 2012]. To better understand the employment paths of graduates, we would like to know what you were doing during each of the time periods you were not employed.

**B18DNW01**

What were you doing when you were not working from [dates of non-working period]?

- Looking for work
  - 1 = Yes
  - 0 = No
- Taking a break from work
  - 1 = Yes
  - 0 = No
- Enrolled in school
  - 1 = Yes
  - 0 = No
- Not working due to personal health issues (e.g., disabled)
  - 1 = Yes
  - 0 = No
- Caring for children
  - 1 = Yes
  - 0 = No
- Caring for other family members
  - 1 = Yes
  - 0 = No
- Something else
  - 1 = Yes
  - 0 = No

**B18DWRKS**

Since you are currently enrolled as a student and also working, would you say you are primarily...

- 1 = A student working to meet expenses, or
- 2 = An employee who decided to enroll in school

**B18DCARMLT**

Would you say that you have had more than one career in the last ten years?

- 1 = Yes
- 0 = No

**B18DCARDUR**

About how many years have you been working in your current career?

- \_\_\_\_\_ year(s)



**B18DNEGOTIAT**

Since completing your bachelor's degree requirements, have you ever negotiated salary or benefits with any employer?

- 1 = Yes
- 0 = No
- 2 = Not applicable

**B18DNEGOTOUT**

Have you ever received a higher salary or additional benefits as a result of your negotiations?

- 1 = Yes
- 0 = No

**B18DOTHOUT**

The next questions will focus on your job search experiences.

**B18DSEARCH**

[If currently employed at any employer]

Are you currently looking for a different job?

(Indicate "yes" if you are looking for full-time or part-time jobs [{if B18CDEG01 > 3 in any loop}, or graduate school jobs such as assistantships and fellowships].)

[else]

Are you currently looking for a job?

(Indicate "yes" if you are looking for full-time or part-time jobs [{if B18CDEG01 > 3 in any loop}, or graduate school jobs such as assistantships and fellowships].)

- 1 = Yes
- 0 = No

**B18DEVERLK**

[If B&B:08/12 survey respondent]

Since [B&B:08/12 survey date], have you ever looked for employment?

[else]

Since July 2012, have you ever looked for employment?

- 1 = Yes
- 0 = No

**B18DEMPOTH**

According to the information that you have provided, it does not appear you are currently employed.

Are you...

- Traveling (trip longer than two weeks)?
  - 1 = Yes
  - 0 = No
- Volunteering or participating in an unpaid internship?

- 1 = Yes
- 0 = No
- A full-time homemaker?
  - 1 = Yes
  - 0 = No
- Unable to work because of a disability?
  - 1 = Yes
  - 0 = No
- Temporarily laid off, on leave, or waiting to report to work for other reasons?
  - 1 = Yes
  - 0 = No
- Enrolled in school?
  - 1 = Yes
  - 0 = No

**B18DUNCM**

[If B&B:08/12 survey respondent]

Since [B&B:08/12 survey date], have you received either of the following?

[else]

Since July 2012, have you received either of the following?

- Unemployment compensation
  - 1 = Yes
  - 0 = No
- Disability benefits
  - 1 = Yes
  - 0 = No

**B18EINTRO**

One of the goals of this study is to learn about experiences of teachers at elementary or secondary schools (kindergarten through 12th grade), even among graduates who did not major in an education field.

**B18EANYTCHX**

Have you worked as a teacher at the K-12 level since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} July 2012]?

(Indicate "yes" only for teaching positions at elementary or secondary schools. Do not include positions such as preschool teacher, SAT tutor or piano teacher in a non-school setting, guidance counselor or librarian, graduate teaching assistant, and college or university teacher.

- 1 = Yes
- 0 = No

**B18EANYTCH**

Since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} July 2012], have you held any of the following teaching positions at the K-12 level?

- Regular classroom teacher (full- or part-time)

- Substitute, short term
- Substitute, long term
- Teacher's aide
- Support teacher
- Itinerant teacher
- Student teacher
- Other teaching position

**B18ETHNKINFL**

Please indicate whether each of the following factors had a negative influence, no influence, or a positive influence on your thinking about whether to pursue a teaching career.

- Financial compensation
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Prestige of occupation
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Working with kids
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Opportunity to contribute to society
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Teacher accountability for student achievement
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Teachers' working conditions
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Possibilities for career advancement
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence
- Subject or location (e.g., science or math, poor urban schools)
  - 1 = Negative influence
  - 2 = No influence
  - 3 = Positive influence

**B18EINT**

In your first teaching job, did you participate in a teacher internship program?

(By "teacher internship program" we mean a program in which you complete your teacher preparation coursework during your first year or two of teaching after receiving a bachelor's degree. Internship programs provide coursework and support from college or district faculty and result in a regular teaching certificate.)

– 1 = Yes

– 0 = No

### **B18EIND**

In your first teaching job, did you participate in a formal teacher induction program in which you were assigned a mentor teacher who provided guidance to you in your job?

– 1 = Yes

– 0 = No

### **B18EPRP**

In your first teaching job, did you feel adequately prepared to...

– Handle a range of classroom management or discipline situations?

– 1 = Yes

– 0 = No

– Use a variety of instructional methods?

– 1 = Yes

– 0 = No

– Work with parents and the community?

– 1 = Yes

– 0 = No

### **B18EHLF**

In your first teaching job, did you receive help from your school or school district in...

– Disciplining students?

– 1 = Yes

– 0 = No

– Selecting and implementing appropriate instructional methods and curriculum?

– 1 = Yes

– 0 = No

– Working with parents and the community?

– 1 = Yes

– 0 = No

### **B18ECURCRT**

Are you currently certified to teach at the K-12 level?

– 1 = Yes

– 0 = No

### **B18ECRTDT**

In what month and year were you first certified to teach?

– Month:

– January - December

- Year:
- Before 2008 - 2019

### **B18EALTCRT**

Did you enter teaching through an alternative route to certification?

(An example is Teach For America, which is a program designed to recruit non-teachers into the teaching field.)

- 1 = Yes
- 0 = No

### **B18ECRTLEVEL**

Are you certified to teach any grade in...

- Kindergarten through 5th grade
- 6th through 8th grade
- 9th through 12th grade

### **B18ELPINTRO**

Next, we're going to collect information on your current or most recent K-12 regular classroom teacher position.

### **B18EJBVER**

[If web survey]

If your current or most recent regular K-12 classroom teaching position is associated with one of the employers you told us about earlier, please select it from the list below.

[else]

Is your current or most recent regular K-12 classroom teaching position associated with one of the employers you told us about earlier?

- 1 = [Employer name 1]
- 2 = [Employer name 2]
- 3 = [Employer name 3]
- 4 = [Employer name 4]
- 5 = [Employer name 5]
- 6 = [Employer name 6]
- 7 = [Employer name 7]
- 8 = [Employer name 8]
- 9 = [Employer name 9]
- 10 = [Employer name 10]
- 11 = [Employer name 11]
- 12 = [Employer name 12]
- 13 = [Employer name 13]
- 14 = [Employer name 14]
- 15 = [Employer name 15]
- 99 = This teaching position is not associated with any of these employers

### **B18EJBSL**

What is the name of the school where you are currently teaching or have most recently taught?

(If you are unable to find your school, click “School not listed.”)

– School name:

### **B18ESTWK**

[If full survey respondent]

Are you currently working for [current or most recent school] as a regular classroom teacher?

[else]

Are you currently working as a regular classroom teacher?

– 1 = Yes

– 0 = No

### **B18ETCHMOS**

[If B18ESTWK = 1]

How many months per year do you work in this job?

[else]

How many months per year did you work in this job?

– Number of months:

– -9 = -Select one-

– 1 = 1

– 2 = 2

– 3 = 3

– 4 = 4

– 5 = 5

– 6 = 6

– 7 = 7

– 8 = 8

– 9 = 9

– 10 = 10

– 11 = 11

– 12 = 12

### **B18EJBFD**

At [current or most recent school], what subjects [{if B18ESTWK = 1} do {else} did] you teach?

– Elementary education (general curriculum in elementary or middle grades)

– General education in middle or secondary grades

– English or language arts

– Mathematics or computer science

– Natural sciences (e.g., biology, chemistry)

– Social sciences (e.g., social studies, psychology)

– Special education

– {If web survey} Other subject {else} Any other subject

### **B18EJBFD2**

What other subjects [{if B18ESTWK = 1} do {else} did] you teach?

- Arts and music
- English as a second language (ESL)
- Foreign languages
- Health, physical education
- Vocational, career, or technical education
- {If web survey} Other subject {else} Any other subject

### **B18ECRTFLD**

Are you currently certified to teach...

- Elementary education (general curriculum in elementary or middle grades)
- Special education
- Arts and music
- English or language arts
- English as a second language (ESL)
- Foreign languages
- Health, physical education
- Mathematics or computer science
- Natural sciences (e.g., biology, chemistry)
- Social sciences (e.g., social studies, psychology)
- Vocational, career, or technical education
- General education in middle or secondary grades
- {If web survey} Other subject area {else} Any other subject area
- None of the above

### **B18EJBGR**

[If B18ESTWK = 1]

At [current or most recent school], what are the lowest and highest grades that you teach?

(If you only teach one grade level, please select the same grade level for both the lowest and highest grades.)

[else]

At [current or most recent school], what were the lowest and highest grades you taught?

(If you only taught one grade level, please select the same grade level for both the lowest and highest grades.)

- Lowest grade level:
- Kindergarten - Twelfth grade
- Highest grade level:
- Kindergarten - Twelfth grade

☐ [{If B18ESTWK = 1} Teach {else} Taught] ungraded students

### **B18EPRSUPP**

On a scale from 1 to 5, where 1 means “strongly disagree” and 5 means “strongly agree”, please indicate the extent to which you agree or disagree with the following statements about [{if B18ESTWK = 1} your current school leadership {else} the school leadership where you last worked]?

- [{if B18ESTWK = 1} School leadership supports and encourages staff. {else} School leadership supported and encouraged staff.]
  - 1 = 1 (Strongly disagree)
  - 2 = 2 (Disagree)
  - 3 = 3 (Neither agree nor disagree)
  - 4 = 4 (Agree)
  - 5 = 5 (Strongly agree)
- School leadership [{if B18ESTWK = 1} enforces {else} enforced] school rules for students' conduct and [{if B18ESTWK = 1} backs [{if telephone survey} you {else} me] up when [{if telephone survey} you {else} I] need it {else} backed [{if telephone survey} you {else} me] up when [{if telephone survey} you {else} I] needed it].
  - 1 = 1 (Strongly disagree)
  - 2 = 2 (Disagree)
  - 3 = 3 (Neither agree nor disagree)
  - 4 = 4 (Agree)
  - 5 = 5 (Strongly agree)
- School leadership [{if B18ESTWK = 1} communicates {else} communicated] to the staff what kind of school they [{if B18ESTWK = 1} want. {else} wanted.]
  - 1 = 1 (Strongly disagree)
  - 2 = 2 (Disagree)
  - 3 = 3 (Neither agree nor disagree)
  - 4 = 4 (Agree)
  - 5 = 5 (Strongly agree)

### **B18EUNION**

[If B18ESTWK = 1]

Is your current teaching position represented by a teacher union or other labor union?

[else]

Was your most recent teaching position represented by a teacher union or other labor union?

- 1 = Yes, and I [{if B18ESTWK = 1} am {else} was] a dues-paying member
- 2 = Yes, and I [{if B18ESTWK = 1} am {else} was] not a dues-paying member
- 3 = No
- -1 = Don't know

### **B18ELVRA**

What is the main reason you left [current or most recent school]?

- 1 = Dissatisfied with [current or most recent school]
- 2 = Found better opportunities at another school
- 3 = Laid off or involuntarily transferred
- 4 = Did not obtain or maintain license
- 5 = Personal reasons (e.g. relocation, health or disability, to care for children or other dependents)
- 6 = Another reason not listed



**B18ELVRB**

Were you dissatisfied with...

- Salary and benefits
- Workplace conditions (e.g. class size, grade level or subject area, facilities, classroom resources)
- Student discipline and behavior
- Class size
- Lack of support from students' parents
- Lack of support from supervisors and administrators
- Too many non-teaching responsibilities
- Limited opportunities to advance in career
- School safety
- Other

**B18EADDSCH**

[If B&B:08/12 survey respondent]

Not including [current or most recent school], have you taught at any other schools as a K-12 regular classroom teacher since [B&B:08/12 survey date]?

[else]

Not including [current or most recent school], have you taught at any other schools as a K-12 regular classroom teacher since July 2012?

- 1 = Yes
- 0 = No

**B18ESCHNAM01**

What is the name of another school where you taught?

(If you are unable to find your school, click “School not listed.”)

- School name:

**B18ESCHLEVA01**

What is the main reason you left [other K-12 school]?

- 1 = Dissatisfied with [other K-12 school]
- 2 = Found better opportunity at another school
- 3 = Laid off or involuntarily transferred
- 4 = Did not obtain or maintain license
- 5 = Personal reasons (e.g. relocation, health or disability, to care for children or other dependents)
- 6 = Another reason not listed

**B18ESCHLEVB01**

Were you dissatisfied with...

- Salary and benefits
  - 1 = Yes
  - 0 = No

- Workplace conditions (e.g., class size, grade level or subject area, facilities, classroom resources, school safety)
  - 1 = Yes
  - 0 = No
- Student discipline and behavior
  - 1 = Yes
  - 0 = No
- Lack of support from student’s parents
  - 1 = Yes
  - 0 = No
- Lack of support from school leadership
  - 1 = Yes
  - 0 = No
- Too many non-teaching responsibilities
  - 1 = Yes
  - 0 = No
- Limited opportunities to advance in career
  - 1 = Yes
  - 0 = No
- Other
  - 1 = Yes
  - 0 = No

**B18ESCHMOR01**

[If B&B:08/12 survey respondent]

Aside from these schools you already told [{if telephone survey} me {else} us] about, have you taught as a K-12 regular classroom teacher at any additional schools since [B&B:08/12 survey date]?

- [Current or most recent school]
- [Other K-12 school 1]
- [Other K-12 school X]

[else]

Aside from these schools you already told [{if telephone survey} me {else} us] about, have you taught as a K-12 regular classroom teacher at any additional schools since July 2012?

- [Current or most recent school]
- [Other K-12 school 1]
- [Other K-12 school X]
- 1 = Yes
- 0 = No

**B18ETCHSAT**

In your current teaching position, are you satisfied with each of the following...

- Student discipline and behavior
  - 1 = Yes
  - 0 = No
- Class size(s)

- 1 = Yes
- 0 = No
- The support you receive from students' parents
  - 1 = Yes
  - 0 = No
- The support you receive from administrators
  - 1 = Yes
  - 0 = No
- School safety
  - 1 = Yes
  - 0 = No
- Requirements for standardized testing
  - 1 = Yes
  - 0 = No
- Non-teaching responsibilities
  - 1 = Yes
  - 0 = No
- Opportunities to advance in your career
  - 1 = Yes
  - 0 = No

**B18ETCHSTAY**

One of the purposes of B&B is to learn about the teaching profession and what motivates someone to become a teacher and stay in teaching. According to our records, you reported teaching in the past and are currently teaching.

What has motivated you to continue in the teaching profession?

- Prestige of occupation
- Working with children
- Opportunity to contribute to society
- Ability to balance personal life and work
- Relationships with colleagues
- Other reason(s)

**B18EMOVE**

How likely do you think it is that you will move into a non-teaching job in elementary or secondary education, such as a principal or an administrator?

- 1 = Not at all likely
- 2 = Somewhat likely
- 3 = Likely
- 4 = Very likely

**B18ETCHLEVA**

What is the main reason you are no longer teaching as a regular classroom teacher?

- 5 = Dissatisfied with teaching
- 1 = Left classroom teaching but remained in education
- 2 = Left to pursue another career or to enroll in school

- 3 = Laid off or involuntarily transferred
- 4 = Did not obtain or maintain license
- 6 = Personal reasons (e.g. relocation, health or disability, to care for children or other dependents)
- 7 = Another reason not listed

### **B18ETCHLEVB**

Were you dissatisfied with...

- Salary and benefits
  - 1 = Yes
  - 0 = No
- Teaching as a career
  - 1 = Yes
  - 0 = No
- Student discipline and behavior
  - 1 = Yes
  - 0 = No
- Lack of support from student's parents
  - 1 = Yes
  - 0 = No
- Lack of support from school leadership
  - 1 = Yes
  - 0 = No
- Too many non-teaching responsibilities
  - 1 = Yes
  - 0 = No
- Limited opportunities to advance in career
  - 1 = Yes
  - 0 = No
- Requirements for standardized testing
  - 1 = Yes
  - 0 = No
- Other
  - 1 = Yes
  - 0 = No

### **B18ETCHLEVC**

You just indicated you left classroom teaching but remained in education. What type of position did you hold after leaving the classroom?

- 1 = District leader (e.g., school district administrator, chief academic officer)
- 2 = School leader (e.g., principal or school head, assistant principal)
- 3 = Academic school specialist (e.g., instructional coordinator, academic coach or specialist)
- 4 = Other school specialist (e.g., librarian, library technician, counselor or school psychologist)
- 5 = Other position

### **B18ETCHGRT**

Have you heard of the TEACH Grant Program?

- 1 = Yes
- 0 = No

**B18ELNFRGV**

Are you aware of loan forgiveness programs which allow you to cancel all or part of your student loans in return for service to the community through teaching?

- 1 = Yes
- 0 = No

**B18ELNINCT**

Did knowing about a teacher loan forgiveness program influence you to become a teacher?

- 1 = Yes
- 0 = No

**B18ELNPRT**

Have you participated in a loan forgiveness program for teachers?

- 1 = Yes
- 0 = No

**B18FINTRO**

Now, [{if telephone survey} I {else} we] have some additional questions that will help us better understand the experiences of individuals from different backgrounds.

**B18FMOMED**

What is the highest level of education your mother (or female guardian) completed?

- 1 = Did not complete high school
- 2 = High school diploma or equivalent
- 3 = Vocational/technical training
- 4 = Some college but no degree
- 5 = Associate's degree (usually a 2-year degree)
- 7 = Bachelor's degree (usually a 4-year degree)
- 8 = Master's degree or equivalent
- 10 = Doctoral degree (PhD, EdD, etc.)
- 9 = Professional degree (chiropractic, dentistry, law, medicine, optometry, pharmacy, podiatry, or veterinary medicine)
- -1 = Don't know

**B18FDADED**

What is the highest level of education your father (or male guardian) completed?

- 1 = Did not complete high school
- 2 = High school diploma or equivalent
- 3 = Vocational/technical training
- 4 = Some college but no degree
- 5 = Associate's degree (usually a 2-year degree)
- 7 = Bachelor's degree (usually a 4-year degree)

- 8 = Master's degree or equivalent
- 10 = Doctoral degree (PhD, EdD, etc.)
- 9 = Professional degree (chiropractic, dentistry, law, medicine, optometry, pharmacy, podiatry, or veterinary medicine)
- -1 = Don't know

**B18FUSBORN**

Were you born in the United States (including Puerto Rico or another U.S. territory)?

- 1 = Yes
- 0 = No

**B18FCITZN**

Are you a U.S. citizen?

- 1 = Yes
- 2 = No - Resident alien, permanent resident, or other eligible non-citizen; hold a temporary resident's card or other eligible non-citizen temporary resident's card
- 3 = No - Student visa, in the country on an F1 or F2 visa, or on a J1 or J2 exchange visitor visa
- 4 = No - None of the above

**B18FHSTYP**

Was the high school from which you graduated public or private?

- 1 = Public
- 2 = Private
- 3 = Graduated from a foreign high school
- 4 = Home schooled
- 5 = Received a GED (General Educational Development) certificate or other equivalent credential

**B18FHSCDR**

What is the name of the high school from which you graduated?

(If you are unable to find your high school, click "School not listed.")

- School name:

**B18FENGL**

Is English your native language?

- 1 = Yes
- 0 = No

**B18FMILIT**

Please indicate whether or not each of the following describes your current military status.

- Veteran
  - 1 = Yes
  - 0 = No
- Active duty
  - 1 = Yes

- 0 = No
- Reserves
  - 1 = Yes
  - 0 = No
- National Guard
  - 1 = Yes
  - 0 = No

**B18AMARR**

What is your current marital status?

- 1 = Single, never married
- 2 = Married
- 3 = Separated
- 4 = Divorced
- 5 = Widowed

**B18AMARSMY**

[If B18AMARR = 3]

In what month and year were you separated?

[else if B18AMARR = 4]

In what month and year were you divorced?

[else]

In what month and year were you married?

- Month:
  - January - December
- Year:
  - Before 2008 - 2019

**B18AFINCON**

Is there another adult in your household with whom you are sharing financial responsibilities and decisions, such as income, bills, and budgeting?

- 1 = Yes
- 0 = No

**B18AFINWHO**

Which best describes this person?

Would you say a...

- 1 = Domestic partner or spouse
- 2 = Boyfriend or girlfriend
- 3 = Parent
- 4 = Sibling
- 5 = Friend or roommate
- 6 = Other

**B18AHCOMP**

Do you currently live with...

- A spouse or partner
- Children and/or other dependents
- Parents or in-laws
- Another person (e.g., roommate)
- Live alone

**B18FSEX**

These next few questions will help us better understand the experiences of people of all sexual orientations and gender identities.

What sex were you assigned at birth (what the doctor put on your birth certificate)?

- 1 = Male
- 2 = Female

**B18FGENDERID**

What is your gender?

Your gender is how you feel inside and can be the same or different from your biological or birth sex.

- Male
- Female
- Transgender, male-to-female
- Transgender, female-to-male
- Genderqueer or gender nonconforming
- Please describe
- A different identity
- Please describe

**B18FYQ**

[If web survey]

Do you think of yourself as...

[else]

Now I will read a list of terms people sometimes use to describe how they think of themselves.

Lesbian or gay, that is, homosexual

Straight, that is, heterosexual

Bisexual

Another sexual orientation

As I read the list again, please say "Yes" when you hear the option that best describes how you think of yourself.

- 1 = Lesbian or gay, that is, homosexual
- 2 = Straight, that is, heterosexual
- 3 = Bisexual



- 4 = Another sexual orientation
- Please describe
- -1 = Don't know
- Please describe

### **B18FDISCRIM**

Discrimination may happen when people are treated unfairly because they are seen as different from others based on a personal characteristic (such as race, sex, sexual orientation, gender identity, national origin, citizenship status, or some other characteristic).

Do you feel that you have ever been treated unfairly at work because of your...

- Race or ethnicity
  - 1 = Yes
  - 0 = No
- Sex
  - 1 = Yes
  - 0 = No
- Sexual orientation
  - 1 = Yes
  - 0 = No
- National origin or citizenship status
  - 1 = Yes
  - 0 = No
- Gender identity
  - 1 = Yes
  - 0 = No
- Religion
  - 1 = Yes
  - 0 = No

### **B18FACCEPT**

In general, how accepting would you say your current workplace is of gay, lesbian, bisexual, and transgender employees?

- 1 = Very accepting
- 2 = Somewhat accepting
- 3 = Not very accepting
- 4 = Not at all accepting

### **B18FDEPS**

Do you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] have any dependent children?

(Dependent children need not live with you. Include any children for whom you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] provide 50% or more of their financial support.)

- 1 = Yes
- 0 = No

**B18FDEP2**

[If B18AMARR = 2]

How many dependent children do you or your spouse support financially?

[else if B18AFINWHO = 1]

How many dependent children do you or your partner support financially?

[else]

How many dependent children do you support financially?

– \_\_\_\_\_dependent(s)

**B18FDEPDOB**

[If B18FDEP2 = 1]

In what month and year was your dependent child born?

[else]

In what month and year were your dependent children born?

- Month
- January - December
- Year
- Before 1985 - 2019

**B18FDEPSAM**

[If B18FDEP2 = 1]

Did you become financially responsible for your dependent at the same time as his or her birth?

(Answer "no" if you started to financially support [{if B18FDEP2 = 1} your dependent {else} any of your dependents] at a time other than [{if B18FDEP2 = 1} his or her {else} their] birth, such as through adoption, foster care, etc.)

[else]

Did you become financially responsible for all of your dependents at the same time as their birth?

(Answer "no" if you started to financially support [{if B18FDEP2 = 1} your dependent {else} any of your dependents] at a time other than [{if B18FDEP2 = 1} his or her {else} their] birth, such as through adoption, foster care, etc.)

- 1 = Yes
- 0 = No

**B18FDEPDAT**

[If B18FDEP2 = 1]

We would like to know when your child became financially dependent upon you. If he or she became dependent upon you at a time other than his or her birth (through adoption, foster care, etc.) please indicate the month and year he or she became your dependent.

[else]

For each dependent child, we would like to know when he or she became financially dependent upon you. If he or she became dependent upon you at a time other than his or her birth (through adoption, foster care, etc.) please indicate the month and year he or she became your dependent.

- Month
- January - December
- Year
- Before 1985 - 2019

### **B18FCSTDYCR**

How much (on average) do you pay each month for childcare?

- \$\_\_\_\_\_.00
- ☐ Don't know

### **B18DLVCHLD**

Since [{if B&B:08/12 survey respondent} [B&B:08/12 survey date] {else} July 2012], have you taken paid or unpaid leave that lasted six consecutive weeks or longer for the birth or adoption of a child, to raise your children, or the medical care of your children?

- 1 = Yes
- 0 = No

### **B18FOTHER**

Do you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] have any other dependents that you support financially or are their primary caregiver?

(Dependents need not live with you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner]. They may include siblings, parents, other relatives, or other individuals for whom you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] provide 50% or more of their financial support or are considered to be the primary caregiver.)

- 1 = Yes
- 0 = No

### **B18FOTDEP**

In what month and year did you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] begin providing financial support or became the primary caregiver to your other dependent(s)?

- Month
- January - December
- Year
- Before 1990 - 2019

### **B18FPAYOFF**

Now we have some questions for you about your general financial situation. This information is important to understanding how individuals with a bachelor's degree have transitioned into life outside of college.

Do you usually pay off your credit card balances each month, or carry balances over from month to month?

- 0 = No credit cards
- 1 = Pay off balances
- 2 = Carry balances

**B18FCRDBAL**

What was the total amount you owed on all your credit cards combined according to your last month's statements?

– \$\_\_\_\_\_.00

**B18FRETIR**

For each of the following please indicate whether or not you have each type of retirement savings account, either provided by an employer, your own savings, or a combination.

- IRA
  - 1 = Yes
  - 0 = No
- 401(k)
  - 1 = Yes
  - 0 = No
- 403(b)
  - 1 = Yes
  - 0 = No
- Pension
  - 1 = Yes
  - 0 = No
- Other retirement savings account
  - 1 = Yes
  - 0 = No

**B18FAMTRET**

Not counting any contributions made on your behalf, in the past 12 months did you contribute to your...

- IRA
  - 1 = Yes
  - 0 = No
- 401(k)
  - 1 = Yes
  - 0 = No
- 403(b)
  - 1 = Yes
  - 0 = No
- Pension
  - 1 = Yes
  - 0 = No
- Other retirement savings account
  - 1 = Yes
  - 0 = No

**B18FDISTNC**

What is the 5-digit ZIP code of your permanent address? Your permanent address is usually your legal residence, such as where you maintain your driver's license or are registered to vote.

– ZIP code:

☐ Check here if the location is not in the United States or a U.S. territory.

**B18FHOUSE**

[If B18AMARR = 2]

Do you own a home or pay rent?

(If someone other than your spouse makes housing payments on your behalf, please select, "None of the above.")

[else if B18AFINWHO = 1]

Do you own a home or pay rent?

(If someone other than your partner makes housing payments on your behalf, please select, "None of the above.")

[else]

Do you own a home or pay rent?

(If someone makes housing payments on your behalf, please select, "None of the above.")

- Pay mortgage
- Pay rent
- Own home(s) outright
- None of the above

**B18FMTGAMT**

[If paid mortgage and paid rent]

How much (on average) is your total monthly housing payment (including both rent and mortgage payments)?

Please indicate only the amount that you [{if B18AMARR = 2} or your spouse {else if B18AFINWHO = 1} or your partner] are responsible for paying. If someone else pays your total monthly housing payment on your behalf, please indicate "0."

[else if paid mortgage]

How much (on average) is your total monthly mortgage payment?

Please indicate only the amount that you [{if B18AMARR = 2} or your spouse {else if B18AFINWHO = 1} or your partner] are responsible for paying. If someone else pays your total monthly mortgage payment on your behalf, please indicate "0."

[else if paid rent]

How much (on average) is your total monthly rent payment?

Please indicate only the amount that you [{if B18AMARR = 2} or your spouse {else if B18AFINWHO = 1} or your partner] are responsible for paying. If someone else pays your total monthly rent payment on your behalf, please indicate "0."

[else]

How much (on average) is your total monthly rent or mortgage payment?

Please indicate only the amount that you [{if B18AMARR = 2} or your spouse {else if B18AFINWHO = 1} or your partner] are responsible for paying. If you do not have a monthly housing payment or someone else pays your monthly housing payment on your behalf, please indicate "0."

- \$\_\_\_\_\_.00 per month
- ☐ Don't know

### **B18FHOMVAL**

What is the approximate current value of your home(s)?

- \$\_\_\_\_\_.00

### **B18FHOMOWE**

About how much do you [{if B18AMARR = 2} or your spouse {else if B18AFINWHO = 1} or your partner] owe on the mortgage(s) for your home(s)?

(If you owe nothing for your mortgage(s), please enter "0.")

- \$\_\_\_\_\_.00

### **B18FCARLOAN**

Do you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] have a loan or a lease for a vehicle (car, truck, motorcycle, or other vehicle)?

If someone makes vehicle loan or lease payments on [{if B18AMARR = 2} behalf of you or your spouse {if B18AFINWHO = 1} behalf of you or your partner {else} your behalf], please answer, "No."

- 1 = Yes
- 0 = No

### **B18FCARAMT**

What is the total amount you [{if B18AMARR = 2} or your spouse {if B18AFINWHO = 1} or your partner] pay each month for your vehicle loan(s) or lease(s)?

- \$\_\_\_\_\_.00 per month

### **B18FINCOM**

What was your income for calendar year 2017, prior to taxes and deductions?

(Calendar year 2017 includes January 1, 2017 through December 31, 2017. Include all income you paid taxes on, including work, investment income, or alimony. Do not include [{if B18AMARR = 2} your spouse's income, {if B18AFINWHO = 1} partner's income,] any grants or loans you may have used to pay for school, or any money given to you by your family.)

- \$\_\_\_\_\_

### **B18FINEST**

[If B18AMARR = 2]

Excluding your spouse's income, please indicate the range that best estimates your income from all sources (including income from work, investments, alimony, etc.), prior to taxes and deductions, for calendar year 2017 (January 1, 2017 through December 31, 2017).

[else if B18AFINWHO = 1]

Excluding your domestic partner's income, please indicate the range that best estimates your income from all sources (including income from work, investments, alimony, etc.), prior to taxes and deductions, for calendar year 2017 (January 1, 2017 December 31, 2017).

[else]

Please indicate the range that best estimates your income from all sources (including income from work, investments, alimony, etc.) prior to taxes and deductions for calendar year 2017 (January 1, 2017 through December 31, 2017).

- 1 = Less than \$20,000
- 2 = \$20,000-\$29,999
- 3 = \$30,000-\$39,999
- 4 = \$40,000-\$49,999
- 5 = \$50,000-\$59,999
- 6 = \$60,000-\$69,999
- 7 = \$70,000-\$79,999
- 8 = \$80,000-\$89,999
- 9 = \$90,000-\$99,999
- 10 = \$100,000-\$149,999
- 11 = \$150,000 or more
- -1 = Don't know

### **B18FSPEMP**

[If B18AFINWHO = 1]

Did your partner work for pay in calendar year 2017 (January 1, 2017 through December 31, 2017)?

[else]

Did your spouse work for pay in calendar year 2017 (January 1, 2017 through December 31, 2017)?

- 1 = Yes
- 0 = No

### **B18FINCSP**

[If B18AFINWHO = 1]

What was your partner's income for calendar year 2017, prior to taxes and deductions?

(Calendar year 2017 includes January 1, 2017 through December 31, 2017. Include all income your partner paid taxes on, including work, investment income, or alimony. Do not include any grants or loans your partner may have used to pay for school, or any money given to your spouse by family.)

[else]

What was your spouse's income for calendar year 2017, prior to taxes and deductions?

(Calendar year 2017 includes January 1, 2017 through December 31, 2017. Include all income your spouse paid taxes on, including work, investment income, or alimony. Do not include any grants or loans your spouse may have used to pay for school, or any money given to your spouse by family.)

– \$ \_\_\_\_\_

- ☐ [If B18AFINWHO = 1]
- ☐ Check here if you were not living with your partner in 2017
- ☐ [else]
- ☐ Check here if you were not married to your spouse in 2017

### **B18FINSRA**

[If B18AFINWHO = 1]

Please indicate the range that best estimates your partner's income from all sources (including income from work, investments, alimony, etc.), prior to taxes and deductions, in calendar year 2017 (January 1, 2017 through December 31, 2017).

[else]

Please indicate the range that best estimates your spouse's income from all sources (including income from work, investments, alimony, etc.), prior to taxes and deductions, in calendar year 2017 (January 1, 2017 through December 31, 2017).

- 1 = Less than \$20,000
- 2 = \$20,000-\$29,999
- 3 = \$30,000-\$39,999
- 4 = \$40,000-\$49,999
- 5 = \$50,000-\$59,999
- 6 = \$60,000-\$69,999
- 7 = \$70,000-\$79,999
- 8 = \$80,000-\$89,999
- 9 = \$90,000-\$99,999
- 10 = \$100,000-\$149,999
- 11 = \$150,000 or more
- -1 = Don't know

### **B18FSPLV**

[If B18AFINWHO = 1]

What is the highest level of education that your partner has completed?

[else]

What is the highest level of education that your spouse has completed?

- 1 = Did not complete high school
- 2 = High school diploma or equivalent
- 3 = Vocational or technical training
- 4 = Less than 2 years of college
- 5 = Associate's degree
- 6 = 2 or more years of college but no degree
- 7 = Bachelor's degree



- 8 = Graduate degree (Master's, Ph.D., Ed.D., or professional degree such as dentistry, law, medicine, pharmacy, divinity/theology)

### **B18FSPCOL**

Is your spouse attending college or graduate school during the 2018-19 school year?

(Answer yes if she or he has attended or will attend at any time between July 1, 2018 and June 30, 2019.)

- 0 = No
- 1 = Yes, full time
- 2 = Yes, part time

### **B18FSPLN**

[If B18AFINWHO = 1 and B18FSPLV in (2 3 4 5 6)]

Did your partner ever take out any student loans for his or her undergraduate education?

[else if B18AFINWHO = 1]

Did your partner ever take out any student loans for his or her undergraduate and/or graduate education?

[else if B18FSPLV in (2 3 4 5 6)]

Did your spouse ever take out any student loans for his or her undergraduate education?

[else]

Did your spouse ever take out any student loans for his or her undergraduate and/or graduate education?

- 1 = Yes
- 0 = No

### **B18FSPAMT**

[If B18AFINWHO = 1]

What is the total amount your partner has borrowed in student loans?

[else]

What is the total amount your spouse has borrowed in student loans?

– \$\_\_\_\_\_

### **B18FSPOWE**

[If B18FSPAMT missing and B18AFINWHO = 1]

How much of your partner's student loans are still owed? Would you say all, some, or none?

[else if B18FSPAMT ne missing and B18AFINWHO = 1]

How much of the \$[B18FSPAMT] in total student loans does your partner still owe? Would you say all, some, or none?

[else if B18FSPAMT missing]

How much of your spouse's student loans are still owed? Would you say all, some, or none?

[else]

How much of the \$[B18FSPAMT] in total student loans does your spouse still owe? Would you say all, some, or none?

- 1 = All
- 2 = Some
- 3 = None

### **B18FSPLNPY**

[If B18AFINWHO = 1]

How much does your partner pay each month for his or her student loans?

[else]

How much does your spouse pay each month for his or her student loans?

- \$\_\_\_\_\_per month
- ☐ Not yet in repayment

### **B18FSELLPO**

[If paid mortgage or owned home]

Suppose you [{if B18AMARR = 2} and your spouse {if B18AFINWHO = 1} and your partner] were to sell all your major possessions, including your home, turn all of your investments and other assets into cash, and pay off all your debts. Do you think you would have something left over, break even, or be in debt?

[else]

Suppose you [{if B18AMARR = 2} and your spouse {if B18AFINWHO = 1} and your partner] were to sell all your major possessions, turn all of your investments and other assets into cash, and pay off all your debts. Do you think you would have something left over, break even, or be in debt?

- 1 = Have something left over
- 2 = Break even
- 3 = Be in debt

### **B18FSTRESS**

During the past 12 months, has there been a time when you did not meet all of your essential expenses, such as mortgage or rent payments, utility bills, or important medical care?

- 1 = Yes
- 0 = No

### **B18BINCHO**

Are you satisfied with the quality of the undergraduate education you received at [NPSAS institution]?

- 1 = Yes
- 0 = No

### **B18BMAJCHO**

Are you satisfied with your choice of undergraduate major(s) or course(s) of study?

- 1 = Yes
- 0 = No

### **B18FAFFCOST**

Please indicate whether or not you had to do any of the following as a result of your financial cost for your undergraduate [{if B18CDEG01 in (5 6 7 8 9) in any loop or reported graduate enrollment in B&B:08/12 survey} and graduate] education.

- Worked more than desired
  - 1 = Yes
  - 0 = No
- Took a job outside your field of study or a less desirable job
  - 1 = Yes
  - 0 = No
- Took a job instead of enrolling for additional education
  - 1 = Yes
  - 0 = No
- Delayed buying a home
  - 1 = Yes
  - 0 = No
- Delayed getting married
  - 1 = Yes
  - 0 = No
- Delayed having children
  - 1 = Yes
  - 0 = No

### **B18FWORTH**

Do you think your undergraduate education was worth its financial cost?

- 1 = Yes
- 0 = No

Do you think your graduate education was worth its financial cost?

- 1 = Yes
- 0 = No

### **B18FCOMSRV**

Have you performed any community service or volunteer work in the last 12 months?

Please do not include paid community service, court-ordered service, or charitable donations (such as food, clothing, money, etc.).

- 1 = Yes
- 0 = No

### **B18FVLHRS**

About how many hours did you volunteer during the last year?

- \_\_\_\_\_ hour(s)
  - 1 = Per year
  - 2 = Per month

- 3 = Per week
- ☐ One-time event

**B18FVTNEL**

Did you vote in the November 2016 presidential election?

- 1 = Yes
- 0 = No

**B18FVTREG**

Are you registered to vote in U.S. elections?

- 1 = Yes
- 0 = No

## Appendix F. Training Topics and Agenda for Interviewers

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## Data Collection Interviewer Agenda

Tuesday, July 10th: 6:00-10:00			
Time	Training Component	Person Responsible	Time Allotment
6:00-6:15	Welcome and Introductions – Study Overview	Data collection team lead: Beth	15 minutes
6:15-6:30	Differences in the CATI-CMS	Beth	15 minutes
6:30-6:45	Security Presentation	Beth	15 minutes
6:45-7:00	Pronunciation Guide and FAQs	Beth	15 minutes
7:00-7:30	B&B:08/18 Survey Presentation	Survey Team	30 minutes
7:30-8:00	Coder Presentation & Practice	Survey Team	30 minutes
8:00-8:15	Break		15 minutes
8:15-9:00	Round Robin	All (interactive)	45 minutes
9:00-9:55	Paired Mock	All (interactive)	55 minutes
9:55-10:00	Review of Training Objectives & Training Evaluation	Beth	5 minutes

### To be completed on July 11th and 12th

- CATI Certifications
- Pronunciation Certifications
- FAQ Certifications
- Security Certifications



## Appendix G. Notification Materials for Survey Data Collection

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## Brochure

### Who is conducting B&B?

The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is conducted by the National Center for Education Statistics (NCES), in the U.S. Department of Education's Institute for Education Sciences, with data collection being carried out under contract by RTI International, a U.S.-based nonprofit research organization. This is the third follow-up study with a cohort of students who were first selected to participate in the 2008 National Postsecondary Student Aid Study (NPSAS:08).

NCES is authorized to conduct B&B by the Education Sciences Reform Act of 2002 (ESRA 2002, 20 U.S.C. §9543) and to collect students' education records from educational agencies or institutions for the purposes of evaluating federally supported education programs under the Family Educational Rights and Privacy Act (FERPA, 34 CFR §§ 99.31(a)(3)(iii) and 99.35).

### How will my information be protected?

NCES is required to follow strict procedures to protect personal information in the collection, reporting, and publication of data. All of the information you provide may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151).

Data security procedures for B&B are reviewed and approved by NCES data security staff. Your answers are secured behind firewalls and are encrypted during internet transmission using Secure Sockets Layer (SSL) protocol. All data entry modules are password protected and require the user to log in before accessing the data. NCES employees and contractors are subject to large fines or imprisonment if individual responses are disclosed.



**B&B Help Desk**  
877-262-4440

[bbemail@rti.org](mailto:bbemail@rti.org)

<https://surveys.nces.ed.gov/bb/>



**2008/18**  
**Baccalaureate and**  
**Beyond Longitudinal**  
**Study**

**For questions about the study, please contact:**

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B&B Project Director (RTI)  
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National Center for Education Statistics  
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**ies** NATIONAL CENTER FOR  
EDUCATION STATISTICS  
Institute of Education Sciences

NCES 2018-114

## What is B&B?

The Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is a national study of approximately 17,000 graduates from U.S. colleges and universities who will be asked about their experiences in the 10 years since completing a bachelor's degree.

The study will collect information on graduate and other education, experiences in the labor market, earnings and expenses, and family status. In addition to survey responses, we collect related information from other sources, such as student loan and enrollment databases. There is a particular focus on careers in K-12 teaching and other employment outcomes.

## Why am I being asked to participate?

You have been asked to participate in B&B because you completed the requirements for your bachelor's degree 10 years ago, during the 2007-08 academic year. Most study participants were first surveyed in 2008 as part of the National Postsecondary Student Aid Study (NPSAS).

## What happens to the results?

Results from the current study are scheduled to be released in 2020 and will be posted on the NCES website (<https://nces.ed.gov/surveys/b&b/>) along with results from previous B&B studies. Your responses will be combined with those of other bachelor's degree recipients and will be presented in summary form only. No individually identifying information will be published.

## HOW DO I PARTICIPATE?

You can complete the B&B survey online or over the phone.

### Online

Log onto the study website at <https://surveys.nces.ed.gov/bb/> using the Study ID and password provided in your welcome letter. The survey is mobile-optimized, so it can be easily completed on a mobile device.

### Phone

Call our Help Desk at 877-262-4440 to speak to one of our professional interviewers.

## WHY IS MY PARTICIPATION IMPORTANT?

The National Center for Education Statistics (NCES) has conducted only one previous 10-year follow-up with baccalaureate graduates—the Class of 1992-93 was surveyed in 2003 as part of B&B:93/03.

Your survey responses will help educators, researchers, and policymakers at the local, state, and national levels understand the experiences of recent college graduates. Your experiences are unique, and if you choose not to participate in B&B, no one else can be substituted for you.



## What have we learned from previous rounds of B&B?

About three-fifths of 1992-93 bachelor's degree recipients, surveyed 10 years later, reported that the quality of instruction they received as undergraduates (61 percent) and their undergraduate major field (58 percent) remained very important to their lives.

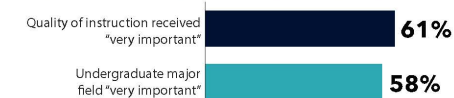
Within 10 years of completing a bachelor's degree, 25 percent of 1992-93 bachelor's degree recipients obtained an occupational license and 30 percent obtained a professional certification.

In 2012, about 77 percent of 2007-08 graduates who had been employed worked in a job related to their major field of study, and about 73 percent reported that they were satisfied with the importance of their work.

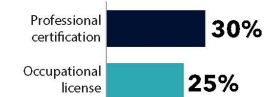
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993/03 and 2008/12 Baccalaureate and Beyond Longitudinal Studies (B&B:93/03 and B&B:08/12).

## 1992-93 Bachelor's degree recipients surveyed in 2003

Importance of undergraduate major and quality of instruction



Licenses or certifications earned



## 2007-08 Bachelor's degree recipients surveyed in 2012

Employment



## Data Collection Announcement Letter

«date»

«fname» «mname» «lname» «suffix»  
«addr1»  
«addr2»  
«city», «state» «zip» «zip4»

Study ID: «caseid»

Dear «fname» «lname»:

Data collection for the Baccalaureate and Beyond Longitudinal Study (B&B), conducted by the National Center for Education Statistics (NCES), within the U.S. Department of Education, is now underway. B&B is interested in understanding how **earning a bachelor's degree «in [major]» «and [major2]»** impacted your choices about additional education and employment paths since graduating from college during the 2007–08 school year. [INSERT MERGE FIELD FROM TABLE, BELOW]

**[IF INCENTIVE ELIGIBLE AND GOOD ADDRESS: «We have included \$2 in gratitude for your «continued» participation in B&B.>>] [IF INCENTIVE ELIGIBLE AND UNSURE OF ADDRESS: <<We sent you \$2 via PayPal to «e-mailaddress» in gratitude for your «continued» participation in B&B.»] [IF INCENTIVE ELIGIBLE:<<After you complete the survey, you will receive \$«inc\_amount» as a token of our appreciation, payable by <<PayPal or>> check.>>]** The survey will take approximately **35** minutes to complete, and can even be completed on your mobile device. Having your résumé or curriculum vitae handy will help you complete the survey.

To complete the survey, log on to our secure website at <https://surveys.nces.ed.gov/bb/> using the Study ID and password below:

**Study ID** = «caseid»

**Password** = «password» (*password is case sensitive*)

<<Or use the camera on your phone to scan the QR code below to take you to the  
<<survey>>/<<website>>:

<<QRCODE>>>>

If you have questions or problems completing your survey online, or prefer to complete the survey over the telephone, call **B&B Help Desk at 877-262-4440**.

The enclosed brochure answers many common questions about the study and contains additional information on laws and procedures that protect the confidentiality of your responses. **You can also learn more about B&B on our study website, <https://surveys.nces.ed.gov/bb/>.**

Thank you in advance for making B&B a success.

Sincerely,



Ted Socha  
Project Officer, B&B:08/18  
National Center for Education Statistics  
[ted.socha@ed.gov](mailto:ted.socha@ed.gov) | 202-245-7071



Melissa Cominole, Ph.D.  
Project Director, B&B:08/18  
RTI International  
[mcominole@rti.org](mailto:mcominole@rti.org) | 800-723-8942

«panelinfo»/«controlID»

<b>MERGE FIELD OPTIONS – PRIOR RESPONSE</b>	
<b>NPSAS08 RESPONDENT ONLY</b>	You may recall participating in the National Postsecondary Student Aid Study (NPSAS), a related study, in 2008, and we need your help again.
<b>BB09 RESPONDENT / BB12 NONRESPONDENT</b>	You may recall participating in B&B in 2009, and we need your help again.
<b>BB12 RESPONDENT</b>	You may recall participating in B&B in 2012, and we need your help again.
<b>NPSAS08 / BB09 / BB12 NON- RESPONDENT</b>	You may recall being contacted about B&B in 2012.

The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is conducted by the National Center for Education Statistics (NCES). Under contract with NCES, RTI International, a U.S.-based nonprofit research organization, administers B&B:08/18 on behalf of NCES. NCES is authorized to conduct B&B:08/18 by the Education Sciences Reform Act of 2002 (ESRA 2002, 20 U.S.C. §9543) and to collect students' education records from education agencies or institutions for the purposes of evaluating federally supported education programs under the Family Educational Rights and Privacy Act (FERPA, 34 CFR §§ 99.31(a)(3) and 99.35). All of the information you provide may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151).

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this voluntary information collection is 1850-0729. The time required to complete this information collection is estimated to average approximately <<time>> minutes per response, including the time to review instructions, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate, suggestions for improving this survey, or any comments or concerns regarding the status of your individual submission of this survey, please write directly to: The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18), National Center for Education Statistics, Potomac Center Plaza, 550 12<sup>th</sup> St., SW, Room 4004, Washington, DC 20202.

## Data Collection Announcement E-mail

**SUBJECT:** The 2008/18 Baccalaureate and Beyond Study (B&B:08/18)

Dear «fname» «lname»:

Data collection for the Baccalaureate and Beyond Longitudinal Study (B&B) is now underway. B&B is interested in understanding how **earning a bachelor's degree** <<in [major]» «and [major2]»>> impacted your choices about further education and work since graduating from college during the 2007–08 academic year. [INSERT MERGE FIELD FROM TABLE, PRIOR RESPONSE, BELOW]

**[IF INCENTIVE ELIGIBLE AND UNSURE OF ADDRESS: «We sent you \$2 via PayPal «to [e-mailaddress]» in gratitude for your «continued» participation in B&B.»] [IF INCENTIVE ELIGIBLE AND GOOD ADDRESS: <<We are sending you \$2 in gratitude for you your «continued» participation in B&B.>>]**



Or go to our secure website at <https://surveys.nces.ed.gov/bb/> using the Study ID and password below.

**Study ID** = «caseid»

**Password** = «password» (*password is case sensitive*)

The survey will take about **35** minutes to complete <<IF INCENTIVE ELIGIBLE: and you will receive \$«Inc\_amount» via <<PayPal or>> check as a thank you for your participation>>. Having your résumé or curriculum vitae handy will help you complete the survey.

If you have questions about the study or prefer to complete the survey over the phone, call the B&B help desk at **877-262-4440**. You can also learn more by visiting the study website at <https://surveys.nces.ed.gov/bb/>.

Your participation, while voluntary, is critical to the study's success. We hope you enjoy the opportunity to share your experiences.

Many thanks,

Ted Socha  
Project Officer, B&B:08/18  
National Center for Education Statistics  
[ted.socha@ed.gov](mailto:ted.socha@ed.gov) | 202-245-7071

Melissa Cominole, Ph.D.  
Project Director, B&B:08/18  
RTI International  
[mcominole@rti.org](mailto:mcominole@rti.org) | 800-723-8942

OMB Control Number: 1850-0729

Learn more about our confidentiality procedures at <https://surveys.nces.ed.gov/bb/confidentiality.aspx>



<b>MERGE FIELD OPTIONS – PRIOR RESPONSE</b>	
<b>NPSAS08 RESPONDENT ONLY</b>	You may recall participating in the National Postsecondary Student Aid Study (NPSAS), a related study, in 2008, and we need your help again.
<b>BB09 RESPONDENT / BB12 NONRESPONDENT</b>	You may recall participating in B&B in 2009, and we need your help again.
<b>BB12 RESPONDENT</b>	You may recall participating in B&B in 2012, and we need your help again.
<b>NPSAS08 / BB09 / BB12 NON- RESPONDENT</b>	You may recall being contacted about B&B in 2012.

## Postcard 1

Why are the **college graduates** selected for the  
Baccalaureate & Beyond study so important?

Because **YOU** represent thousands of other  
adults from

**across the country**  
who were not selected.



«FNAME», your participation matters.

IF INCENTIVE ELIGIBLE: << Complete the B&B:08/18 survey and  
receive \$XX as our thanks to you. >> It takes XX minutes.

Complete online



<https://surveys.nces.ed.gov/bb/>

Study ID: «caseID»

PW: «password»



Complete by phone

877-262-4440



Or use the camera on your  
phone to scan the QR Code

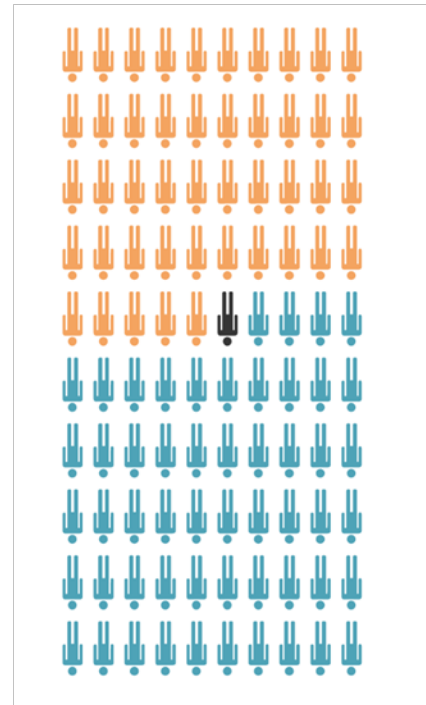
Data collected from B&B will help researchers and policymakers  
better understand how earning a bachelor's degree« in [major] «and [major2]  
»»impacts choices for additional education and employment paths.

The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is a survey of individuals who  
completed their postsecondary education during the 2007-08 academic year. The National Center for  
Education Statistics (NCES) in the U.S. Department of Education's Institute of Education Sciences has  
contracted with RTI International to collect data for B & B on its behalf.

OMB Control Number: 1850-0729

Learn more about our confidentiality procedures at  
<https://surveys.nces.ed.gov/bb/confidentiality.aspx>





2008/18 BACCALAUREATE AND BEYOND LONGITUDINAL STUDY (B&amp;B:08/18) DATA FILE DOCUMENTATION

## Final Postcard

*Just a reminder...*  
**Act now, B&B ends soon!**

<<fname>>,

We value the participation of college graduates<< with  
[major] <<and [major2]>> degrees >>like you in B&B. Please  
complete your <<time>> minute B&B survey ending on  
<<end\_date>>.

Go to

<https://surveys.nces.ed.gov/bb/>

Study ID: «caseid»

Password: «password»

Or use the camera on your phone to scan the QR Code:



Call 877-262-4440 to complete by phone.

[Or send us back the **paper survey** you got in the mail!]

The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is a survey of individuals who completed their postsecondary education during the 2007-08 academic year. The National Center for Education Statistics (NCES) in the U.S. Department of Education's Institute of Education Sciences has contracted with RTI International to collect data for B&B on its behalf.

OMB Control Number: 1850-0729

Learn more about our confidentiality procedures at  
<https://surveys.nces.ed.gov/bb/confidentiality.aspx>



nces.ed.gov

nces.ed.gov

National Center for Education Statistics  
 U.S. Department of Education (ATTN: Data Capture)  
 <<RAddr>>  
 <<RCity>>, <<RState>> <<RZip1>> <<RZip2>>  
 RTI Project 0214099.120.002.424

ADDRESS SERVICE REQUESTED

**What have you been up  
 to since college  
 graduation?**

**An important study  
 wants to know.**

«name»

«addr1»

«addr2»

«city», «st» «zip»

<<PanelInfo>>/ <<ControlID>>

## Text Message Reminder Examples

### DATA COLLECTION ANNOUNCEMENT TEXT

<<fname>>, your BB survey from the Dept of Ed is now available! [IF INCENTIVE ELIGIBLE: <<You will receive \$«Total\_incentive» for participating.>>] Click here to take the survey: [bitly LINK]

### TEXT MESSAGE REMINDER 1

Hi «fname»! Log on to take the US Department of Education's BB survey [IF INCENTIVE ELIGIBLE: <<and receive \$«Total\_incentive»>>>]! Take the survey at: [bitly link]

### TEXT MESSAGE REMINDER 2

«fname», this is a reminder to complete your BB survey. Go to [bitly LINK] to take the survey [IF INCENTIVE ELIGIBLE: <<and get \$«Total\_incentive» as a token of appreciation>>].

### TEXT MESSAGE REMINDER 3

Your BB survey is still available, «fname»! [IF INCENTIVE ELIGIBLE: <<If you participate you will receive \$«Total\_incentive».>>] Click this link to take the survey: [bitly LINK]

## Incentive Boost Letter

«date»

«fname» «mname» «lname» «suffix»  
 «addr1»  
 «addr2»  
 «city», «state» «zip» «zip4»

Study ID: «caseid»

Dear «fname»:

You have been selected to receive an additional \$«Boost\_Inc» for completing your B&B survey—that's a total of \$«total\_incentive»! Please log on to our secure website to participate and receive your additional \$«Boost\_Inc» for the «time»-minute survey:

<https://surveys.nces.ed.gov/bb/>

Study ID = «caseid»

Password = «password»

*Note: The password is case sensitive; you will need to enter it exactly as it appears here.*

«Or use the camera on your phone to scan the QR code below to take you to the  
 «survey»/«website»:

«QR CODE»

Your experiences are unique, and if you choose not to participate in B&B, no one else can be substituted for you. Therefore, it is extremely important that you complete the survey so that researchers and policymakers better understand how **earning a bachelor's degree «in majors such as [major] «and [major2]»»** impacts choices for additional education and employment paths. The results from this study will help develop policy regarding participation in higher education.

If you have questions, problems completing your survey online, or prefer to complete the survey over the telephone, simply call the **B&B Help Desk** at **877-262-4440**.

Thank you, in advance, for your participation.

Sincerely,



Ted Socha  
 Project Officer, B&B:08/18  
 National Center for Education Statistics  
[ted.socha@ed.gov](mailto:ted.socha@ed.gov) | 202-245-7071



Melissa Cominole, Ph.D.  
 Project Director, B&B:08/18  
 RTI International  
[mcominole@rti.org](mailto:mcominole@rti.org) | 800-723-8942

«panelinfo»/«controlID»

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The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18) is conducted by the National Center for Education Statistics (NCES). Under contract with NCES, RTI International, a U.S.-based nonprofit research organization, administers B&B:08/18 on behalf of NCES. NCES is authorized to conduct B&B:08/18 by the Education Sciences Reform Act of 2002 (ESRA 2002, 20 U.S.C. §9543) and to collect students' education records from education agencies or institutions for the purposes of evaluating federally supported education programs under the Family Educational Rights and Privacy Act (FERPA, 34 CFR §§ 99.31(a)(3) and 99.35). All of the information you provide may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151).

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this voluntary information collection is 1850-0729. The time required to complete this information collection is estimated to average approximately <<time>> minutes per response, including the time to review instructions, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate, suggestions for improving this survey, or any comments or concerns regarding the status of your individual submission of this survey, please write directly to: The 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18), National Center for Education Statistics, Potomac Center Plaza, 550 12<sup>th</sup> St., SW, Room 4004, Washington, DC 20202.

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## **Appendix H. A Primer on Event History Analysis for B&B**

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This appendix introduces *event history analysis* (EHA) statistical methods for use with the 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18). It briefly describes the EHA conceptual framework and illustrates concepts and procedures. This text is meant to introduce EHA and its application to the B&B:08/18 data with minimal technical jargon and without formal statistical notation, formulas, or math beyond arithmetic and logarithms. The examples use simulated data, which are reproduced in the last section of this appendix and are designed to mimic the B&B:08/18 restricted-use data. The simulated data, along with all tables and figures, can be created using the programming code presented below.

EHA is a family of statistical methods that estimate how outcomes vary with time, often while controlling for other covariates (independent variables) such as individuals' background characteristics and earlier choices and behaviors. EHA has other names, depending on the application and academic discipline, such as *survival analysis* (epidemiology), *failure time analysis* or *reliability analysis* (engineering), *duration modelling* (political science), or *hazard modelling* (economics). This appendix focuses on descriptive techniques and one multivariate EHA method, discussed below, but many of the concepts and techniques apply to other EHA methods.

EHA methods offer several advantages over alternate methods for analyzing longitudinal data. For one, EHA methods can incorporate events that are not directly observed (see “Censoring” below), whereas other methods typically exclude these observations, inviting selection bias (Box-Steffensmeier and Jones 2004, p. 19). EHA methods also use more information than alternate methods do by explicitly modelling time, so the results are not driven by arbitrarily determined periods. For example, while alternate models indicate that Asian students have higher postsecondary persistence rates than White students over a period of years, EHA models show that this difference is limited to the 1st year of enrollment. In subsequent years, Asian students are no more likely to persist (DesJardins 2003, p. 435). In addition, EHA methods can accommodate factors that change over time, whereas many other methods treat these factors as unchanging.

The explanation that follows assumes a basic knowledge of statistics and understanding of the natural logarithm function, abbreviated  $\ln$ , and its inverse, the antilogarithm of base  $e$ , abbreviated  $\exp()$ . Familiarity with ordinary least squares regression, logit or probit estimation, and the factorial function is helpful but not necessary. Readers seeking a more formal and technically advanced description of EHA than is described here are encouraged to consult one or more of the publications listed under “Section H.4. Advanced Topics and Additional Resources.”

## Section H.1. Introduction to Longitudinal Data

B&B:08/18 is a *longitudinal* data collection, which means it records observations for the same individuals at multiple points in time. Specifically, B&B:08/18 follows a cohort of individuals who earned a bachelor's degree in the 2007–08 academic year for a 10-year period ending in the 2018 calendar year. (Additional details about the data collection are presented in chapter 1 of this Data File Documentation report.)

B&B:08/18 is one of many longitudinal studies conducted by the National Center for Education Statistics (NCES). Other NCES longitudinal studies include the Early Childhood Longitudinal Study, Birth Cohort of 2001–02; the Early Childhood Longitudinal Studies, Kindergarten Classes of 1998–99 and 2010–11; the Middle Grades Longitudinal Study of 2017–18; the National Education Longitudinal Study of 1988; the High School Longitudinal Study of 2009; the Education Longitudinal Study of 2002; the High School and Beyond Longitudinal Study of 1980; the National Longitudinal Study of the High School Class of 1972; the 1990/94, 1996/01, 2004/09, and 2012/17 Beginning Postsecondary Students Longitudinal Studies; the 1993/03, 2000/01, and 2016/17 Baccalaureate and Beyond Longitudinal Studies; and the Beginning Teacher Longitudinal Study of 2007–08. Some of these studies are repeated periodically, whereas others have been conducted only once to date.

Longitudinal studies like B&B:08/18 are designed to, among other things, facilitate research concerning outcomes that occur at different points in time. Examples of such research questions regarding baccalaureate recipients that might be addressed with B&B:08/18 data include the following:

- How soon do baccalaureate recipients first obtain employment after graduation, and how does it vary across groups?
- What percentage of baccalaureate recipients enroll in graduate education within 10 years of graduation, overall and controlling for background characteristics?
- What is the mean time from graduation until baccalaureate recipients begin repaying the balance on their student loans?
- What proportion of teachers who are recent bachelor's degree recipients leave the profession after 1 year, 2 years, and other intervals, and at which interval do they have the highest probability of leaving?

EHA is designed to address time-related questions such as these.

This appendix refers to a simulated dataset created to illustrate the concepts of EHA with variables that mimic a few B&B:08/18 variables. The simulated data are described and reproduced in the last section of this appendix. For pedagogical purposes, simulated data have the benefit of having no restrictions on analysis, reporting, and dissemination. (More information on obtaining a license for B&B:08/18 restricted-use data can be found at <https://nces.ed.gov/pubsearch/licenses.asp>.)

## Section H.2. Key Concepts and Descriptive Analysis

This section introduces four key EHA concepts—survival rate, failure rate, hazard rate, and censoring—and shows how they can be used to describe events over time. The section that follows introduces multivariate analyses that estimate and test differences across variables.

### H.2.1 Survival Rate

The *survival rate* is the proportion of individuals who have not experienced an event up to a given point in time or the proportion of individuals who have survived until a given time  $t$ . Survival may seem like an odd choice of words for avoiding a desirable outcome like obtaining employment. It, like many EHA terms, derives from engineering analyses of time to product failure and epidemiological studies of disease and death, which are undesirable outcomes.

The survival rate is often referred to as the Kaplan-Meier survival rate after Kaplan and Meier (1958). (For formal mathematical definitions of this and other concepts presented in this appendix, see Box-Steffensmeier and Jones 2004 or Lacy 2015.) Typically, it is expressed as a proportion ranging from 0 to 1, but it can be multiplied by 100 and expressed as a percentage.

The survival rates for selected months after graduation are reported in the third column of table H-1. As shown in the first row of table H-1, 915 of 2,621 individuals in the simulated population found employment in the 1st month following graduation. The survival rate for month 1 can be calculated as  $(2,621 - 915)/2,621 = 0.651$ . Another 158 individuals found employment in the 2nd month after graduation, bringing the survival rate to  $(2,621 - 915 - 158)/2,621 = 0.591$ . The last row of table H-1 shows that the survival rate at 72 months after graduation is 0.024, meaning 62/2,621 individuals did not obtain employment within 72 months. The programming code to generate these survival rates, along with the other analyses in this appendix, is presented near the end of this appendix.

**Table H-1. Number of individuals employed, survival rate, and failure rate, by selected months after graduation: 2018**

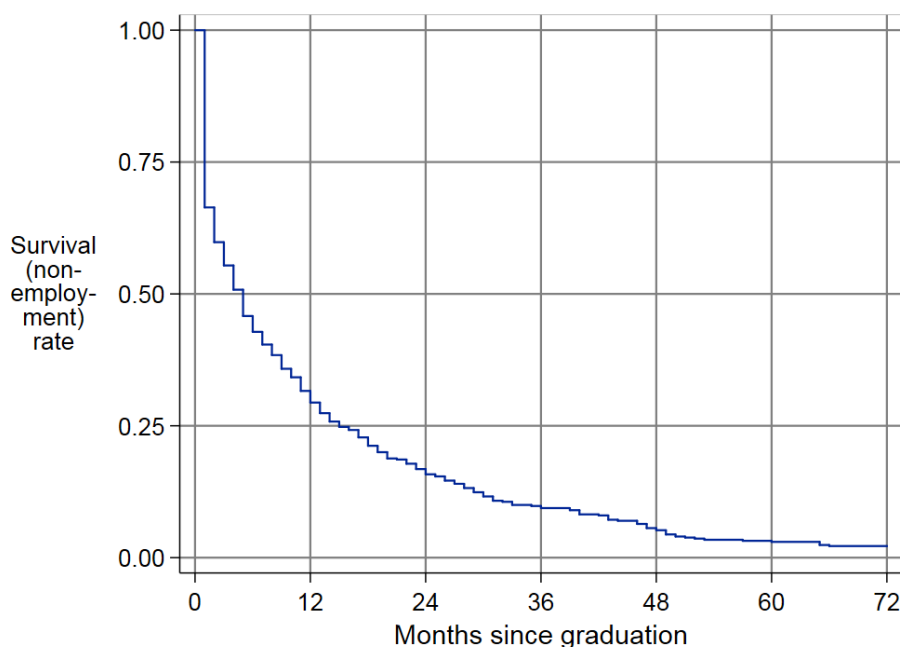
Months after graduation	Number of individuals employed	Survival rate	Failure rate	Unweighted number of individuals employed
1	915	0.651	0.349	168
2	158	0.591	0.409	33
3	101	0.552	0.448	22
70	0	0.024	0.976	0
71	0	0.024	0.976	0
72	0	0.024	0.976	0

NOTE: Except where specified, results are weighted with the simulated B&B:08/12 panel weight WTE000. The weighted number of individuals is 2,621. The unweighted number of individuals is 500.

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

When there are many time points, as in this example, it can be helpful to visualize the survival rate in a graph. Figure H-1 plots the survival rate against time over the entire 72-month period of the simulated data. It shows a steep decrease in the survival rate for the first 12 months, gradually tapering off over the next 60 months. The survival rate does not reach zero, indicating that a small fraction of individuals did not obtain employment within the observed period.

**Figure H-1. Survival rate of simulated dataset: 2018**



SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## H.2.2 Failure Rate

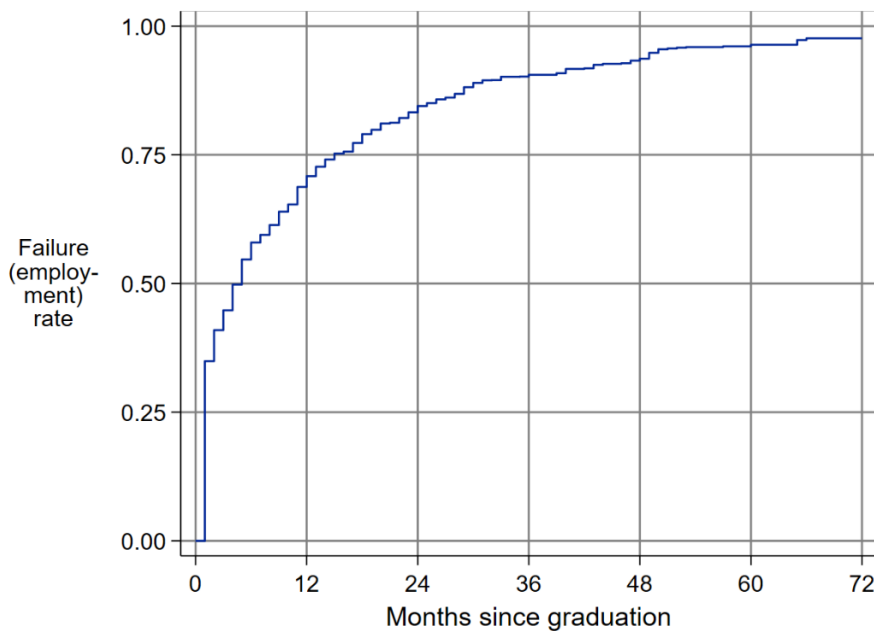
The *failure rate* is the proportion of individuals at a given time who have experienced an event such as first employment after graduation. (Again, it may seem strange to describe employment with a negative term like failure, but in epidemiological studies failure might literally mean death.)

The failure rates for selected months after graduation are reported in the fourth column of table H-1. As shown in the first row of table H-1, 915 of 2,621 individuals in the simulated population found employment in the 1st month following graduation. The failure rate for month 1 can be calculated as  $915/2,621 = 0.349$ . Another 158 individuals found employment in the 2nd month after graduation, bringing the failure rate to  $(915 + 158)/2,621 = 0.409$ . The last row of table H-1 shows that the failure rate at 72 months after graduation is 0.976, meaning  $2,559/2,621$  individuals obtained employment within 72 months.

In this simple example, the failure rate also equals one minus the survival rate. (This mathematical property would not necessarily hold in a more complex model with different types of failure events. Such models are beyond the scope of this appendix.)

Figure H-2 plots the failure rate against time over the 72-month period. Instead of showing the proportion of individuals who have not obtained employment over time, the figure shows the proportion who are employed.

**Figure H-2. Failure rate of simulated dataset: 2018**

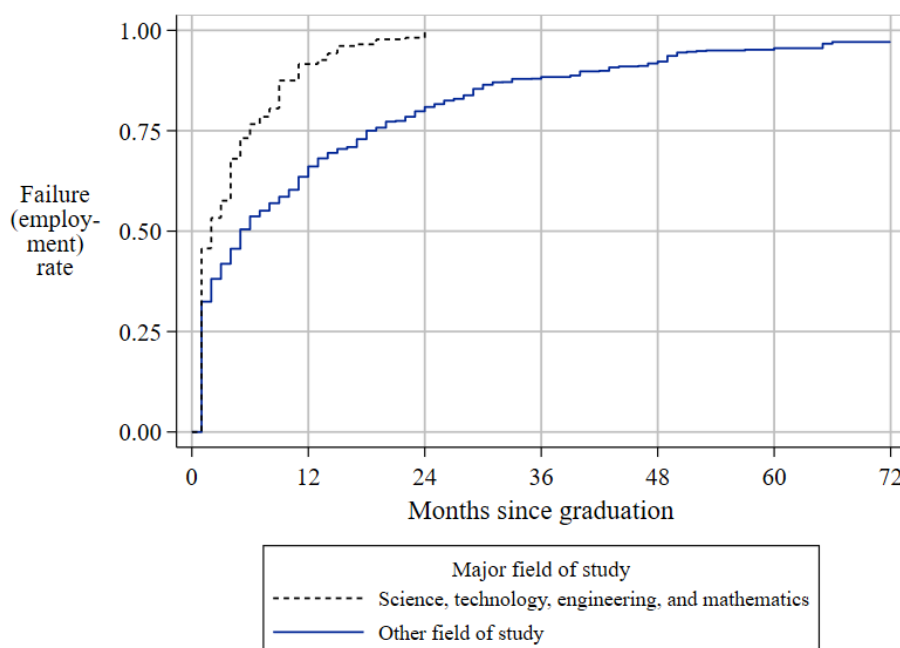


SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).



Failure rates can be compared across groups to visualize differences in outcomes. Figure H-3 shows the failure rates for science, technology, engineering, and mathematics (STEM) majors and other individuals over the same 72-month period of the simulated data. This figure reveals that STEM majors obtain employment more quickly, on average, than other individuals. It also shows that all STEM majors had obtained employment by 24 months after graduation, whereas a proportion of other individuals had not. (The next section shows how to formally estimate and test the difference in failure rates between groups.)

**Figure H-3. Failure rate of simulated dataset, by major field of study: 2018**



SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## H.2.3 Hazard Rate

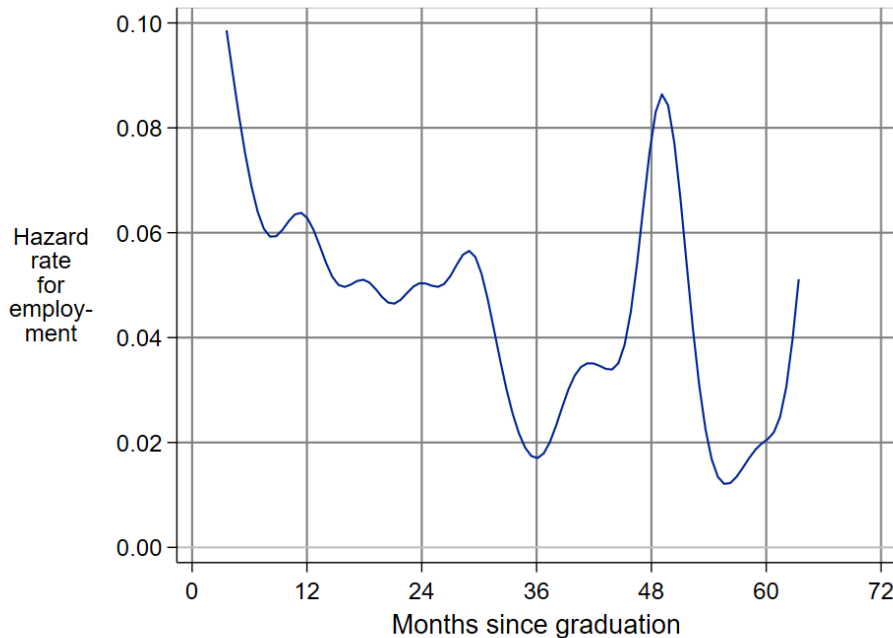
The estimated *hazard rate* is the conditional probability of an individual experiencing a failure event given survival until that point. It equals the failure rate divided by the survival rate. The hazard rate ranges from zero (meaning no probability of experiencing failure in a particular instant) to infinity (meaning certain failure in that instant). The hazard rate is not directly observed for any specific point in time, so it is not reported in table H-1, but it can be estimated over multiple points in time.

Figure H-4 shows the estimated hazard rate for the simulated dataset over the 72-month period. The values are smoothed with a *kernel density* function (StataCorp 2019). A kernel density function divides a distribution into multiple and usually

overlapping intervals. In Figure H-4, the interval is set to 4 months (equal to twice the specified bandwidth). Within each interval, the kernel density smoother averages the values, giving greater weight to values closer to the center of the interval. The type of kernel determines how the values are weighted. In Figure H-4, the weights follow a Gaussian or normal distribution, also known as the bell curve. Another approach to smoothing hazard rates, which is beyond the scope of this appendix, is based on splines (e.g., Rebora, Salim, and Reilly 2014).

The goal of smoothing is to show important variation while minimizing unimportant variation. In practice, selecting the best smoothing parameters requires judgment and is more of an art than a science.

**Figure H-4. Hazard rate for simulated dataset: 2018**



NOTE: Estimates are smoothed with a Gaussian kernel density function of bandwidth 2.

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

The interpretation of the estimated hazard rate values in Figure H-4 can be tricky. Each value is the estimated probability of employment *for the individuals who have not yet experienced employment*. At first glance, Figure H-4 might seem to imply that the rate of first employment was nearly as high at 48 months after graduation as it was at 6 months. But recalling that Figure H-2 shows that about 90 percent of individuals were already employed by 48 months after graduation, the hazard rate at 48 months only applies to the 10 percent of individuals who were not yet employed.

There are three notable aspects about the shape of the estimated hazard rate portrayed in Figure H-4. First, the rate varies over time. From the first value shown,

between months 3 and 4, the estimated hazard rate drops until 36 months, with small increases at approximately 9 and 18 months and a larger increase at 29 months. The estimated hazard rate then rises again until just after 48 months, where it is almost the same magnitude as its peak, then it declines again until it bottoms out at 56 months. It then climbs again from 61 months until the last value is shown at about 63 months. The takeaway is that the probability of finding employment (among those who are not yet employed) differs depending on the time since graduation, and the pattern of variation is not straightforward or concisely summarized. (The rollercoaster shape of the hazard rate will be revisited in the next section.)

Next, the estimated hazard rate is highest near the beginning of the period. This result corresponds to the steepest decline in the survival rate graph in Figure H-1 and the sharpest increase in the failure rate graph in Figure H-2, at the start of the period. Substantively, this steep rise in the estimated hazard rate implies individuals have the highest probability of finding employment shortly after graduation.

Last, there are no estimated hazard rate values plotted for the first several months and the last several months. As noted above, each plotted value is a weighted average of multiple values. The beginning and end of the period have relatively few observations over which to create a weighted average, which can result in unrealistic estimates near the upper and lower boundaries of the distribution (known as *boundary bias*). Some programs for graphing smoothed hazard rates omit estimates near the endpoints by default, and others require the user to specify the boundaries (Cleves, Gould, and Marchenko 2016, p. 115; Selingerova and Langrova 2018).

The descriptive EHAs presented in this section can be extended in various ways. Tables and figures of survival rates, failure rates, and hazard rates can be disaggregated by group (as demonstrated in Figure H-3). Standard errors and confidence intervals can be calculated and presented in tables and figures, including design-adjusted standard errors and confidence intervals that account for the complex sampling used in studies like B&B:08/18 (Cleves, Gould, and Marchenko 2016, pp. 167–169). Finally, formal statistical tests can be applied to compare statistics like mean time to failure across groups (Cleves, Gould, and Marchenko 2016, pp. 122–129; Mills 2011, pp. 79–83).

## H.2.4 Censoring

Every longitudinal dataset contains information about a finite period, and events of interest may occur before data were first collected, after data were last collected, or in between data collection points. Analysts refer to this inevitable incompleteness of a dataset as *censoring*.

The most common type of censoring is *right-censoring*, which describes data in which events of interest may have occurred after the last observation. In the simulated

dataset, for example, the 11 (unweighted) individuals who had not been employed 72 months after graduation are right-censored observations. *Interval-censoring* describes data in which events of interest occurred sometime between observations, but the precise event times were not observed. In a data collection like B&B:08/18, a hypothetical example of interval-censoring might be observing the year but not the month of first employment. *Left-censoring* describes data in which events of interest occurred before the period of observation. This situation might arise, again hypothetically, if the employment status of some individuals was not observed until some months after graduation. In this scenario, it would be known that some individuals were initially employed sometime between graduation and the first observation, but the precise month of first employment would not be known. Many non-EHA methods typically treat censored data by omitting the affected observations, often leading to selection bias, but EHA methods can incorporate censored observations. One method is described in the next section.

## Section H.3. Multivariate Analysis Using the Cox Model

Many analysts want to estimate multivariate models that account for factors other than time, which is where EHA methods really outshine their counterparts that do not explicitly model time. Numerous multivariate EHA methods are designed to work with longitudinal data and address such issues as censoring. This section introduces one multivariate EHA method that offers considerable flexibility with minimal assumptions.

**The Cox model.** One of the most widely used EHA methods is the *Cox proportional hazards model* (Cox 1972), also known as *Cox regression*, the *proportional hazards model*, or simply the *Cox model*. The Cox model estimates the time to an event such as first employment as a function of time, of time-invariant variables such as age at the start of data collection or type of major, and of time-varying variables such as postbaccalaureate enrollment or economic conditions such as national or local unemployment rates.

The Cox model is a *partial likelihood* method that shares two desirable statistical properties with well-known multivariate methods. As is the case with maximum likelihood methods such as logit and probit, partial likelihood estimates are *consistent*, meaning that bias approaches zero as the sample size approaches infinity. Similarly, as with maximum likelihood estimates, partial likelihood estimates are *normally distributed* across repeated samples. Unlike maximum likelihood estimates, partial likelihood estimates are not fully *efficient*, meaning that they have larger variances than the theoretical minimum, but this difference is usually deemed negligible (Allison 2014, p. 34).

The Cox model makes two key assumptions about the series of events, both of which can be tested and, if necessary, remedied. The first assumption, no tied events, requires that two events do not happen at the same time. Most of the 489 (unweighted) individuals in the simulated dataset who obtain employment do so in the same month as at least one other individual during the 72-month period, violating the assumption of no tied events.

The Cox model uses several methods for handling tied events. All are based on the idea that although multiple individuals may experience an event within the same period, the events do not happen at exactly the same instant. By assigning an order to the events within the same period, it is possible to calculate the partial likelihoods essential to the Cox model (Allison 2010, pp. 142–153).

To illustrate, in the simulated dataset, individuals 1193, 1261, and 1346 all obtain employment for the first time in month 46. It is reasonable to assume, without affecting the results, that each individual started employment on a different day of the month. For any given group of individuals who experience an event at the same time, the number of possible orderings equals the factorial of the number of individuals. In this example, the number of orderings is  $3! = 3 \times 2 \times 1$ .

The potential orderings are used to calculate the partial likelihoods for the Cox model using one of several methods. The *exact* method for tied data essentially adds up the probabilities of each of the six orderings ( $3 \times 2 \times 1$ ) to estimate the partial likelihood. The exact method can be computationally intensive and can be completely infeasible as the number of individuals with tied events grows larger.

Understandably, other methods have been developed that approximate the exact method with far fewer calculations. The *Efron* (1977) method is usually preferred because it generally yields results that are closer to the exact method (Allison 2014, p. 50; Box-Steffensmeier and Jones 2004, p. 55; Mills 2011, p. 98). The *Breslow* (1974) method is less precise (Allison 2014, pp. 49–50) but is the only available option for handling ties in some situations (Cleves, Gould, and Marchenko 2016, p. 172). The mathematical details of the exact, Efron, and Breslow methods are beyond the scope of this appendix.

The second assumption, proportionality over time or proportional hazards, requires that the ratio of hazard rates for each pair of individuals is constant over time. Diagnostics for testing the proportional hazards assumption, and methods for addressing it, are presented later in this section.

**Results of the Cox model.** For demonstration purposes, a very simple model of time to employment, controlling for STEM and AGE, was estimated using the simulated dataset. (Most analysts would use more than two covariates for a real-world multivariate model.)

The results of the Cox model estimation are presented in table H-2. Like odds ratios in logit results, hazard ratios are always positive. Values greater than one imply a positive association between the covariate and the outcome, and values less than one imply a negative association. The entry in the first row implies that the hazard rate for STEM majors obtaining employment is 1.39 times the hazard rate for other individuals finding employment, holding age constant. In other words, the probability of finding employment is 39 percent greater for STEM majors compared with other individuals.

**Table H-2. Results of Cox model for simulated dataset: 2018**

Characteristic	Hazard ratio*	standard error
Science, technology, engineering, and mathematics major	1.39	0.172
Age, in years, at the start of data collection	0.89	0.014
Number of observations	35,208	
Number of individuals (unweighted)	489	

\*  $p < .05$ , two-tailed  $t$ -test.

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

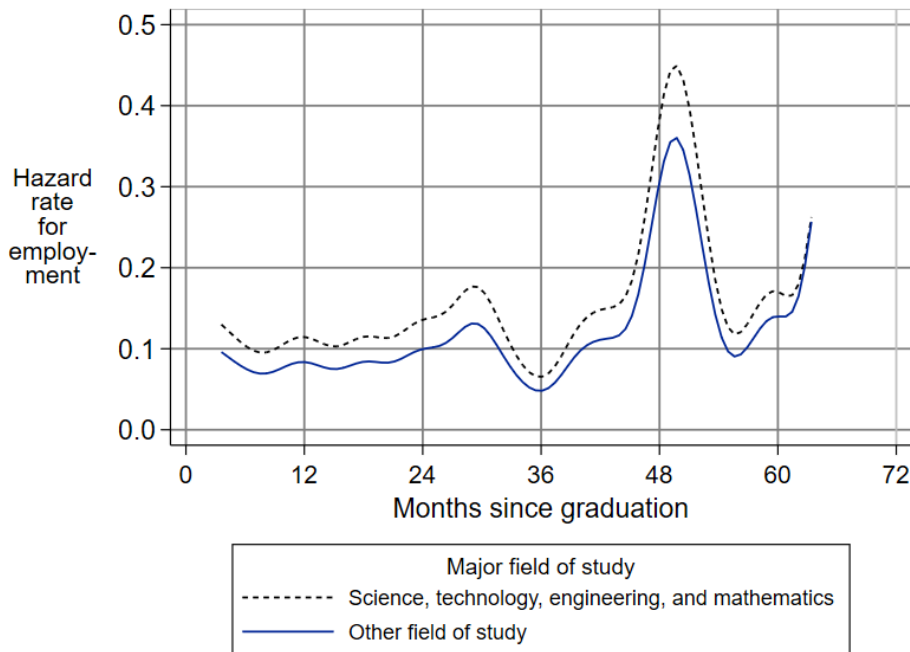
Similarly, the entry in the second row implies that every 1-year increase in age at the start of data collection is associated with 0.89 times the probability of finding employment, controlling for type of major. Put another way, an individual has an 11 percent lower probability of finding employment at any given time than an individual who is 1 year younger at the start of data collection.

### H.3.1 Predictions from the Cox Model

Unlike ordinary least squares regression, logit, and probit, the Cox model does not estimate an intercept (or constant) term. Consequently, there is one more step to turn the relative ratios of hazard rates into absolute predictions about time to failure and hazard rates, i.e., to create predicted values of the hazard rates and survival rates after a model has been estimated (Cleves, Gould, and Marchenko 2016, pp. 137–141).<sup>1</sup> These predictions can be presented for selected times in a table (e.g., Allison 2014, p. 51) and can be specified for particular values of the covariates (such as STEM majors or individuals younger than 24).

Additionally, hazard rates and survival rates based on a Cox model can be plotted in a graph. Figure H-5 shows the estimated hazard rates for STEM majors and other individuals, controlling for age, using the simulated dataset. The shape of each hazard rate differs slightly from that shown in Figure H-4 because it controls for individuals' ages at the start of data collection. The differences between the shapes and positions of the two hazard rates in Figure H-5 indicate that, controlling for age at the start of data collection, the probability of obtaining employment at a given time is moderated by one's type of major.

<sup>1</sup> More precisely, these are estimated hazard *contributions*, which are then smoothed to create an estimated hazard rate (Cleves, Gould, and Marchenko 2016, p. 137).

**Figure H-5. Estimated hazard rate for simulated dataset, controlling for age at the start of data collection, by field of study: 2018**

NOTE: Estimates are smoothed with a Gaussian kernel density function of bandwidth 2.

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

The irregular shape of Figure H-5 also illustrates one of the advantages of the Cox model over other methods such as logit or probit as well as certain other EHA methods: It does not require the hazard rate to follow any particular functional form. Whereas many other methods assume a hazard rate that is constant over time or increases or decreases according to a specific function of time (such as linearly), the Cox model allows the hazard function to rise and fall to fit the data. This feature of the Cox model is important because there is often no theoretical justification for the hazard rate to follow any particular functional form. Other things equal, it is better not to assume a functional form at all than to assume one that is wrong (Cleves, Gould, and Marchenko 2016, pp. 131–132; Jones and Branton 2005, p. 424).

## H.3.2 Proportional Hazards Assumption

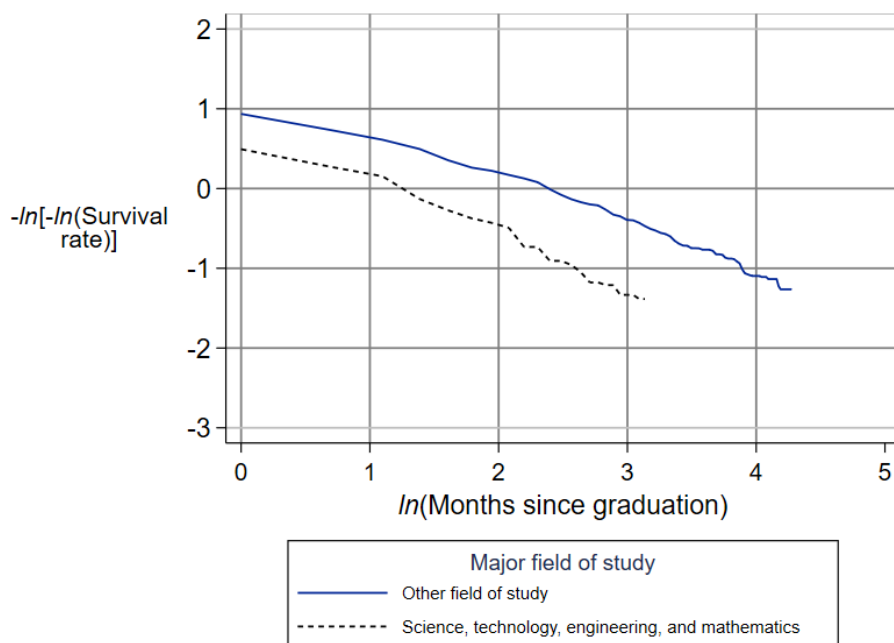
As noted above, the assumption of proportional hazards can and should be tested. Several tests are recommended for this purpose. The *link test* is a type of model specification test. It estimates a second Cox model in which the two covariates are the predicted values from the original model and the square of the predicted values from the original model. If the original model is correctly specified, the coefficient on the squared term will not be statistically significant (Cleves, Gould, and Marchenko 2016, pp. 205–206). In the simple Cox model above using simulated



data, the coefficient on the squared term is not statistically significant ( $t = 1.34$ ;  $p > .05$ ), implying correct specification of the model.

A graphical diagnostic that can be used for categorical covariates is to plot a function of the estimated survival rate over time for each covariate category (Cleves, Gould, and Marchenko 2016, pp. 211–213). As noted above, the proportional hazards assumption requires that the ratio of hazard rates for each pair of individuals is constant over time. This assumption implies the survival rates will increase or decrease at the same rate over time for each category in the sample. In other words, the survival rate for STEM majors and the survival rate for other individuals, though different, should rise and fall in tandem over time. Figure H-6 shows the resulting graph comparing STEM majors and other individuals using the simulated dataset. For ease of interpretation, the  $x$  axis is the natural logarithm of the time units (in this case, months), and the  $y$  axis is the negative natural logarithm of the negative natural logarithm of the estimated survival rate. The figure shows that the two survival rate lines are roughly parallel for the period where both groups have values (that is, until about  $x = 3.2$ , corresponding to approximately  $\exp(3.2) = 25$  months).

**Figure H-6. Estimated survival rates to test proportional hazards assumption in simulated dataset, by major field of study: 2018**



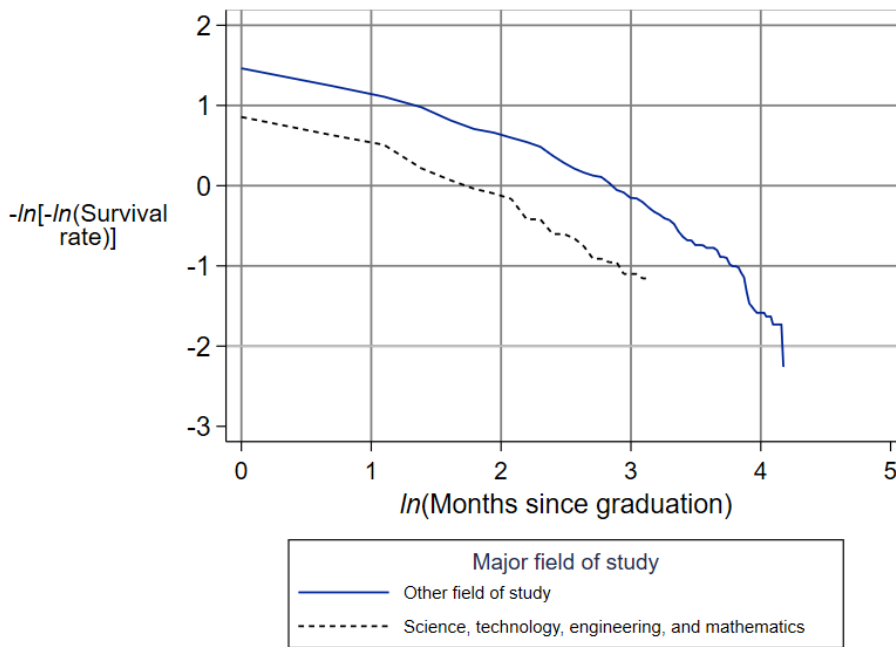
NOTE:  $\ln$  = natural logarithm function.

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

An equivalent plot can also be produced controlling for other covariates. Figure H-7 shows the resulting graph of estimated survival rates controlling for age at the start of data collection. In this example, the only other covariate is age. For each survival

rate line, the intercept (where the line intersects the  $y$  axis on the left edge of the figure) is higher in Figure H-7 than in Figure H-6. But once again the lines in Figure H-7 are approximately parallel to each other, supporting the proportional hazards assumption. Additional diagnostics for the Cox model are described in Box-Steffensmeier and Jones (2004, pp. 124–137); Cleves, Gould, and Marchenko (2016, pp. 209–211); and Mills (2011, pp. 146–163).

**Figure H-7. Estimated survival rates to test proportional hazards assumption in simulated dataset, controlling for age at the start of data collection, by major field of study: 2018**



NOTE:  $\ln$  = natural logarithm function.

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

What if one or more diagnostics had indicated a violation of the proportional hazards assumption? One option, if the offending covariate has relatively few categories, is to stratify the model by values of the covariate (Allison 2014, pp. 47–48; Cleves, Gould, and Marchenko 2016, p. 155; Mills 2011, pp. 155–157). In effect, stratification is equivalent to estimating one model for STEM majors and a second model for all other individuals, then combining both sets of results. A consequence of stratification is that it does not estimate the effect of the stratified variable. In other words, the software would estimate a hazard ratio for AGE but not for STEM. Additionally, stratification may yield estimates that are less efficient (i.e., that have higher variance) (Mills 2011, p. 157).

A second option, not further described here, is to split the period into two or more intervals within which the proportional hazards assumption holds (Allison

2014, pp. 44–45; Cleves, Gould, and Marchenko 2016, pp. 195–199; Mills 2011, pp. 108–113). A third option, introduced next, is to explicitly model the covariates as correlated with time.

### H.3.3 Time-varying Covariates

Another advantage of EHA methods over alternate methods is that EHA methods accommodate *time-varying covariates*, which take on different values over time. For example, the B&B:08/18 longitudinal dataset includes a monthly indicator of postsecondary enrollment for baccalaureate recipients. It stands to reason that individuals enrolled in postsecondary education immediately after graduation might have a longer interval until their first employment than recent high school graduates or, more generally, that enrollment is correlated with nonemployment. This conjecture can be directly tested by including postsecondary enrollment as a time-varying covariate in a Cox model.

Time-varying covariates can be specified using a setting or by creating an interaction term by multiplying the covariate by time or a function of time such as its natural logarithm (Lacy 2015, p. 86). If the coefficient of a time-varying covariate is statistically significant, the result simultaneously confirms the violation of the proportional hazards assumption and corrects for it (Allison 2014, p. 45).

To be sure, this example raises the question of whether postsecondary enrollment affects employment, employment affects postsecondary enrollment, or both. The assumption of which variable causes which can be formally stated, but the question is not easily resolved (Box-Steffensmeier and Jones 2004, pp. 95–96). Still, it is not hard to imagine other time-varying covariates, such as local or national unemployment rates, in which the causal relationship with employment is unambiguous.

## Section H.4. Advanced Topics and Additional Resources

This appendix has introduced several key concepts of EHA and the widely used Cox model, but many more topics were only mentioned or not discussed at all. Other complications of longitudinal data include left and right truncation and gaps in observations. Approaches to addressing these difficulties with longitudinal data include carrying forward observations to fill in missing values and splitting time periods to correct for violations of the proportional hazards assumption.

Other techniques for analyzing longitudinal data not described in this appendix include additional model diagnostics, additional hypothesis tests for differences across groups, cumulative incidence functions, cumulative hazard rates, parametric models, discrete time models, shared frailty models, competing risk models for multivalued outcomes (such as employment or enrollment or withdrawal from the labor force), count models and other approaches for repeated events, combining EHA with other statistical methods (such as matching), quantile functions (such as median time to failure), and calculating marginal effects and predictive margins. More information about these and other advanced topics can be found in the resources described in the next section.

**Additional resources.** Readers interested in using EHA with B&B:08/18 restricted-use data or other longitudinal data may wish to consult the works cited in this appendix. These publications contain more information on other EHA models and techniques, additional guidance on using EHA software (including example code), mathematical proofs and properties of EHA estimation, and other extensions to the concepts presented in this appendix.

Allison (2014) provides a brief general overview of EHA with worked examples using Stata and SAS. Allison (2010) offers a more comprehensive introduction to EHA using SAS. Box-Steffensmeier and Jones (2004) is a comprehensive and widely cited introduction to EHA methods with examples in political science and numerous graphical representations. Cleves, Gould, and Marchenko (2016) is a comprehensive, Stata-specific introduction to EHA with numerous worked examples and chapters on converting data from various formats, postestimation commands to aid interpretation, and power analysis. It is also the only publication that explicitly addresses samples with complex survey settings. Lacy (2015) is a short guide to EHA for education research centered on concepts, terminology, and estimation with the Cox model. Mills (2011) is an introductory EHA textbook based on R with an introduction to R programming, extensive worked examples, exercises, and an appendix of Stata commands that parallel the R commands.

## Section H.5. Programming Code for Analyses

This section presents Stata and R programming code for reproducing the analyses presented in this appendix. The Stata code is presented in Figure H-8 and the R code is presented in Figure H-9. The Stata code exclusively uses commands that are part of the official software package. Most of the R code uses packages that are installed separately (Kassambara, Kosinski, and Biecek 2019; Lumley 2004, 2019; Selingerova and Langrova 2018; Therneau 2015; Wickham 2007). These packages are listed at the top of figures H-9 and H-13. Some analyses and features are not available in both programs. For example, only Stata offers the graphical diagnostic of the proportional hazards assumption shown in figures H-6 and H-7, and only R offers the Efron method of handling tied events with complex survey data.

**Figure H-8. Stata programming code to replicate analyses: 2018**

```
* Configure long-format data for EHA with B&B:08/12 panel weight WTE000
  (http://www.stata.com/manuals/ststset.pdf)
stset MOS_ELAPSED [pweight = WTE000], failure(FIRST_EMP) id(ID)
svyset ID [pweight = WTE000], brrweight(WTE001-WTE200) vce(brr) mse

* Table 1. Survival rates (Cleves, Gould, and Marchenko 2016, p. 102)
sts list, survival at(72)

* Figure 1. Survival rate (Cleves, Gould, and Marchenko 2016, pp. 102-103)
sts graph, survival

* Table 1. Failure rates (Cleves, Gould, and Marchenko 2016, p. 95).
sts list, failure

* Figure 2. Failure rate
sts graph, failure

* Figure 3. Failure rates by major
sts graph, failure by(STEM)

* Figure 4. Hazard rate
sts graph, hazard kernel(gaussian) width(2)
```

See notes at end of figure.

**Figure H-8. Stata programming code to replicate analyses: 2018—Continued**

```
* Table 2. Cox model (Cleves, Gould, and Marchenko 2016, p. 132)
svy: stcox STEM AGE

* Predicted base hazard values (Cleves, Gould, and Marchenko 2016, pp. 137-
  141)
* Results not shown in text.
predict BASHAZ, basechazard
line BASHAZ _t, sort
table _t, contents(mean BASHAZ)

* Predicted survival rates. Results not shown in text.
predict SURVIV, basesurv
line SURVIV _t, sort
table _t, contents(mean SURVIV)

* Figure 5. Hazard rates by major, controlling for age
stcurve, hazard at1(STEM = 1) at2(STEM = 0) kernel(gaussian) width(2)

* Link test (specification test) (Cleves, Gould, and Marchenko 2016, pp. 205-
  206)
linktest

* Figure 6. Diagnostic of proportional hazards assumption (Cleves, Gould, and
  Marchenko 2016, pp. 211-213)
stsphplot, by(STEM)

* Figure 7. Diagnostic of proportional hazards assumption, controlling for
  covariates (Cleves, Gould, and Marchenko 2016, pp. 211-213)
stsphplot, by(STEM) adjust(AGE)

* Cox model stratified by major (Cleves, Gould, and Marchenko 2016, pp. 155-
  157, 201-202). Results not shown in text.
svy: stcox AGE, strata(STEM)
```

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Figure H-9. R programming code to replicate analyses: 2018**

```
library(survival) # Therneau 2015
library(survminer) # Kassambara, Kosinski, and Biecek 2019
library(survey) # Lumley 2004, 2019
library(kernhaz) # Selingerova and Langrova 2018

# Select only months where individuals experience events
data_reduc <- subset(data_long, FIRST_EMP == 1)

# Specify settings for Cox model
mydesign <- svrepdesign(type = "BRR", mse = TRUE, weights =~ WTE000,
  repweights = subset(data_reduc, select = WTE001:WTE200), combined.weights
  = TRUE, data = data_reduc)

# Table 1. Survival rates (Mills 2011, pp. 67-71)
surv.rate <- survfit(Surv(MOS_ELAPSED, FIRST_EMP) ~ 1, data =
  subset(data_long, FIRST_EMP == 1), WTE000, id=ID)
summary(surv.rate, extend = TRUE, time(c(1:72)))

# Figure 1. Survival rate
ggsurvplot(surv.rate, xlim = c(0, 72), conf.int = FALSE, weights =
  data_wide$WTE000)

# Figure 2. Failure rate
ggsurvplot(fail.rate, xlim = c(0, 72), conf.int = FALSE, weights =
  data_long$WTE000, fun = "event")

# Figure 3. Failure rate by major
surv.rate.stem <- survfit(Surv(MOS_ELAPSED, FIRST_EMP) ~ STEM, data =
  data_reduc, WTE000, id = ID)
ggsurvplot(surv.rate.stem, xlim = c(0, 72), conf.int = FALSE, weights =
  data_reduc$WTE000)

# Figure 4. Hazard rate for simulated dataset (not identical to Stata output)
plot(khazard(time = data_reduc$MOS2EMP, delta = data_reduc$FIRST_EMP, kernel
  = "gaussian", h = 2, tmin = 4, tmax = 62))

# Table 2. Cox model - can also use ties = "efron" (Mills 2011, p. 92)
svycoxph(Surv(MOS_ELAPSED, FIRST_EMP) ~ STEM + AGE, design = mydesign, ties =
  "breslow")
```

See notes at end of figure.

**Figure H-9. R programming code to replicate analyses: 2018—Continued**

```
# Link test (Cleves, Gould, and Marchenko 2016, pp. 205-206)
data_reduc$XHAT <- predict(coxreg)
design.linktest <- svrepdesign(type = "BRR", mse = TRUE, weights =~ WTE000,
  repweights = subset(data_reduc, select = WTE001:WTE200), combined.weights
  = TRUE, data = data_reduc)
svycoxph(Surv(MOS_ELAPSED, FIRST_EMP) ~ XHAT + I(XHAT^2), ties = "breslow",
  design = design.linktest)

# Cox model stratified by major (Mills 2011, p. 157). Results not shown in
  text.
svycoxph(Surv(MOS_ELAPSED, FIRST_EMP) ~ strata(STEM) + AGE, design =
  mydesign, ties = "breslow")
```

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).



## Section H.6. Transforming Data from Wide Format to Long Format

The B&B:08/18 restricted-use data CD includes a *long-format* dataset with selected longitudinal variables, in which each row represents an observation for an individual at a specific time point and the dataset contains multiple rows per individual (Cleves, Gould, and Marchenko 2016, p. 40). In many other longitudinal education studies, however, including earlier B&B studies, the data are arranged in *wide format*, which means each row represents one individual and contains observations at multiple points in time. Furthermore, even studies with long-format datasets may contain other variables exclusively in wide format. Some statistical software packages require the dataset to be arranged in long format for EHA, and long-format data may be preferable even when there is a choice (Allison 2014, pp. 39–42). This section illustrates how to transform a dataset from wide format to long format.

In wide format, the simulated dataset has 277 variables: ID number, months to employment (MOS2EMP), a dummy variable for whether the respondent majored in STEM (STEM), age at the start of data collection (AGE), 72 variables indicating whether the individual was employed in each month following graduation (EMP1–EMP72), a simulated B&B:08/12 panel weight (WTE000), and 200 corresponding simulated replicate weights (WTE001–WTE200). The values for 1st month of employment were drawn at random from a distribution designed to mimic the actual B&B:08/18 data. In the interest of simplicity, once an individual in this simulated dataset was employed, the individual stayed employed for the remainder of the 72-month period. (In the B&B:08/18 dataset, as in the real world, individuals often have multiple spells of employment over a period of years.)

Both the STEM major variable and age variable are a function of a random number and each individual's time to employment. By design, in the simulated data the STEM majors have a shorter time to employment on average and older individuals have a longer time to employment on average. Eleven individuals, representing 2 percent of individuals, have missing values for months to employment and for age. Finally, for simplicity, the values of the panel base weight WTE000 are randomly selected integers from one through nine. As for the values of the 200 bootstrap replicate weights WTE001 through WTE200, approximately half are equal to zero and the other half are randomly selected integers from 10 through 99. Figure H-10 shows an excerpt of the wide-format simulated dataset.

**Figure H-10. Excerpt of simulated dataset in wide format: 2018**

ID	MOS2EMP	STEM	AGE	EMP1	EMP2	EMP3	...	EMP72	WTE000	WTE001	...	WTE200
1001	3	0	22	0	0	1	...	1	3	90	...	38
1002	18	0	26	0	0	0	...	1	9	0	...	0
1003	11	0	30	0	0	0	...	1	6	0	...	0
.	.	.	.	.	.	.	...	.	.	.	...	.
.	.	.	.	.	.	.	...	.	.	.	...	.
.	.	.	.	.	.	.	...	.	.	.	...	.
1499	0	0	35	1	1	1	...	1	2	57	...	0
1500	22	0	26	0	0	0	...	1	6	53	...	31

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

To explain what these variables mean, the first row of Figure H-10 describes individual 1001. This individual was first employed 3 months after graduation, was not a STEM major, and was 22 years old at the start of data collection. As noted above, for the sake of simplicity all employed individuals in the simulated dataset remained employed for the remainder of the 72-month period, so the values of EMP4 through EMP71 for individual 1001 (not shown) are also equal to one. In contrast, individual 1002 was not employed until 18 months after graduation, so this individual has a value of zero for EMP1 through EMP17 and a value of one for EMP18 through EMP71 (not shown).

## H.6.1 Stata Example

The data can be transformed from wide-format data to long-format data using Stata's `reshape` command. Figure H-11 presents the Stata code to transform the data to long format. The first command converts the simulated dataset to long format. The first part of the command, `reshape long EMP`, specifies that the variables EMP1, EMP2, EMP3, and so forth will be consolidated into a new variable, EMP, with values that vary with the period. The second part of the command, `i (ID)`, specifies that individuals are uniquely identified by the variable ID. The third part of the command, `j (MOS_ELAPSED)`, creates a new variable, MOS\_ELAPSED, that records the period for that row. For each individual, MOS\_ELAPSED equals one for the 1st month after graduation, two for the 2nd month after graduation, and so on for a total of 72 months. If the observations are arranged by month and year and sorted chronologically, as is the case with the long-format dataset on the B&B:08/18 restricted-use data CD, an equivalent variable can be created with the Stata command `egen MOS_ELAPSED = group (YEAR MONTH)`. The STEM, age, and weight variables, which do not vary over time, are reproduced 72 times for each individual.

**Figure H-11. Stata programming code to reshape wide-format data into long-format data, create variable indicating the first month employed, and configure data to be used with event history analysis methods and B&B:08/12 panel weight WTE000: 2018**

```

reshape long EMP, i(ID) j(MOS_ELAPSED)
bysort ID (MOS_ELAPSED) : generate FIRST_EMP = sum(EMP) == 1 & EMP[_n-1] != 1
stset MOS_ELAPSED [pweight = WTE000], id(ID) failure(FIRST_EMP)

```

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

The second command in Figure H-11 creates a variable indicating the 1st month of employment (FIRST\_EMP) by setting to one the first instance in which EMP equals one for each individual (the failure event). Other values of FIRST\_EMP are set to zero.

The third command in Figure H-11 configures Stata for EHA such that that MOS\_ELAPSED indicates the time units, ID indicates the unique ID number, and FIRST\_EMP indicates the 1st month employed. The `stset` command generates four new variables not shown (for details, see Cleves, Gould, and Marchenko 2016, p. 55).

The resulting long-format dataset has one row per individual per month, which is 72 rows times 500 individuals or 36,000 rows. Figure H-12 shows an excerpt of the long-format simulated dataset. To illustrate, the first row describes individual 1001 in the 1st month after graduation. As seen above in the excerpt of wide-format data, this individual was 22 years old at the start of data collection and completed a bachelor's degree in a field other than a STEM field. These background variables are constant over time for each individual. In the first month after graduation (MOS\_ELAPSED = 1), individual 1001 was not employed (EMP = 0). However, as can be seen in the third row of Figure H-12, this individual started employment (EMP = 1) in the third month after graduation (MOS\_ELAPSED = 3). The fact that the variable FIRST\_EMP equals one in the third row also indicates that individual 1001 started employment in the 3rd month after graduation.

**Figure H-12. Excerpt of simulated dataset in long format: 2018**

ID	MOS_ELAPSED	AGE	STEM	MOS2EMP	EMP	FIRST_EMP	WTE000	WTE001	...	WTE200
1001	1	22	0	3	0	0	3	90	...	38
1001	2	22	0	3	0	0	3	90	...	38
1001	3	22	0	3	1	1	3	90	...	38
1001	4	22	0	3	1	0	3	90	...	38
.	.	.	.	.	.	.	.	.	...	.
.	.	.	.	.	.	.	.	.	...	.
.	.	.	.	.	.	.	.	.	...	.
1500	70	26	0	22	1	0	6	53	...	31
1500	71	26	0	22	1	0	6	53	...	31
1500	72	26	0	22	1	0	6	53	...	31

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## H.6.2 R Example

Figure H-13 presents the R programming code to transform the wide-format data to long-format data using the `melt` command, which is part of the `reshape2` package (Wickham 2007). The first part of the first statement, presented on the first line, specifies the object to be created (`data_long`), the object being transformed (`data_wide`), and the desired format of the object being created (`long`). The second part of the first statement names the variable indicating the month of each observation as `MOS_ELAPSED` and the variable indicating whether the individual was employed as `EMP`. The third part of the first statement specifies that the variables `ID`, `MOS2EMP`, and those in columns 75 through 277 (`AGE`, `STEM`, and `WTE000` through `WTE200`) are constant for each individual across the months. The second line extracts the fourth and fifth characters from the values of `MOS_ELAPSED` (e.g., “23” from “EMP23”), converts the values to numeric, and replaces the original values in the object `data_long`.

**Figure H-13. R programming code to reshape wide-format data into long-format data and create variable indicating the 1st month employed: 2018**

```
library(reshape2) # Wickham 2007
data_long <- melt(data_wide, direction = "long", variable = "MOS_ELAPSED",
  value.name = "EMP", id = c("ID", "MOS2EMP", names(data_wide[,c(75:277)])))
data_long$MOS_ELAPSED <- as.numeric(substr(data_long$MOS_ELAPSED, 4, 5))
```

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

The values for the four key variables `ID`, `MOS2EMP`, `AGE`, and `STEM`, as well as the base weight `WTE000`, are reproduced in their entirety in Figure H-14. This dataset can be copied and pasted directly into a text editing program for importing into a statistical program after minimal additional manipulation. Within each column, variable names and values are separated by commas. Missing values are represented by blanks. All other values are nonnegative integers. Stata users will find it more convenient to use the programming code in Figure H-15 to create the wide-format dataset and the programming code in Figure H-11 to convert the dataset to long format.

**Figure H-14. Names and values of selected variables in wide-format simulated dataset: 2018**

ID,MOS2EMP,AGE,STEM, WTE000	1070,0,26,1,7	1141,8,26,0,7	1212,0,20,0,9
1001,3,22,0,3	1071,27,33,0,2	1142,49,38,0,9	1213,20,24,0,9
1002,18,26,0,9	1072,35,31,0,1	1143,0,27,1,5	1214,43,28,0,3
1003,11,30,0,6	1073,22,32,0,7	1144,8,26,0,3	1215,47,30,0,1
1004,0,28,0,8	1074,0,34,0,4	1145,14,25,0,7	1216,0,22,0,5
1005,7,33,0,2	1075,36,30,0,2	1146,9,23,0,7	1217,6,19,1,4
1006,0,21,1,3	1076,17,22,0,8	1147,33,25,0,4	1218,27,26,0,6
1007,5,20,0,3	1077,12,24,0,1	1148,0,21,0,4	1219,0,26,0,2
1008,53,40,0,3	1078,0,23,0,3	1149,6,20,0,9	1220,0,21,0,2
1009,1,22,0,8	1079,3,24,1,9	1150,15,28,0,5	1221,18,24,0,6
1010,0,19,0,1	1080,3,20,1,7	1151,5,27,0,3	1222,0,30,0,2
1011,0,37,0,5	1081,0,25,0,9	1152,7,21,1,6	1223,5,25,0,7
1012,5,23,0,8	1082,0,27,0,9	1153,2,26,0,9	1224,17,30,1,2
1013,13,26,0,8	1083,0,28,0,5	1154,19,23,0,7	1225,40,31,0,6
1014,5,22,0,6	1084,0,19,1,3	1155,47,34,0,7	1226,17,26,0,4
1015,5,22,1,9	1085,10,24,0,2	1156,2,21,1,9	1227,30,30,0,6
1016,0,25,0,8	1086,60,40,0,8	1157,,,0,9	1228,0,21,1,3
1017,0,21,1,4	1087,36,28,0,7	1158,23,27,0,9	1229,9,22,1,8
1018,3,20,0,4	1088,9,30,0,7	1159,4,21,0,8	1230,6,20,0,2
1019,9,22,0,1	1089,4,23,1,6	1160,2,18,0,6	1231,6,24,0,5
1020,48,28,0,1	1090,0,23,0,8	1161,5,22,0,9	1232,20,24,0,1
1021,8,22,0,1	1091,18,46,0,4	1162,5,20,0,6	1233,44,28,0,5
1022,7,23,0,2	1092,2,23,0,4	1163,20,24,0,1	1234,4,21,0,4
1023,0,18,0,1	1093,12,32,0,7	1164,2,31,1,4	1235,1,19,1,6
1024,0,30,1,5	1094,13,21,0,4	1165,0,23,1,7	1236,0,22,1,8
1025,47,34,0,4	1095,3,34,0,6	1166,3,22,0,6	1237,3,25,0,1
1026,0,24,0,5	1096,17,22,0,8	1167,0,23,0,5	1238,31,25,0,1
1027,,,0,7	1097,0,25,0,9	1168,11,21,0,7	1239,0,21,1,1
1028,30,24,0,8	1098,0,28,0,2	1169,14,23,1,1	1240,0,32,0,6
1029,0,20,0,9	1099,0,23,0,3	1170,12,30,0,4	1241,2,18,0,5
1030,,,0,5	1100,1,20,1,9	1171,22,24,0,9	1242,0,33,1,6
1031,1,19,0,5	1101,0,26,0,9	1172,17,30,0,8	1243,29,43,0,8
1032,8,27,1,2	1102,0,19,1,5	1173,1,20,0,9	1244,66,41,0,9
1033,3,22,0,7	1103,5,19,0,8	1174,4,21,1,5	1245,0,31,0,6
1034,0,19,1,9	1104,,,0,4	1175,47,29,0,1	1246,0,24,1,6
1035,50,35,0,9	1105,1,24,0,4	1176,0,27,0,3	1247,0,20,0,8
1036,1,22,0,8	1106,1,21,0,4	1177,0,25,0,1	1248,0,24,0,7
1037,1,18,0,9	1107,0,22,0,8	1178,0,21,0,3	1249,29,26,0,8
1038,42,28,0,3	1108,10,36,0,2	1179,0,22,0,2	1250,28,24,0,1
1039,0,24,0,9	1109,7,20,0,9	1180,8,27,1,8	1251,0,23,0,3
1040,28,29,0,5	1110,0,22,0,8	1181,0,30,0,9	1252,26,30,0,8
1041,9,21,1,5	1111,1,25,0,3	1182,0,18,0,5	1253,1,20,0,7
1042,13,21,0,5	1112,4,23,1,5	1183,0,24,0,6	1254,1,22,0,6
1043,0,25,0,5	1113,0,26,0,9	1184,11,29,0,5	1255,5,24,0,2
1044,16,31,0,1	1114,2,20,0,1	1185,65,32,0,8	1256,12,20,0,3
1045,5,19,0,4	1115,0,35,0,7	1186,3,19,0,8	1257,18,22,0,1
1046,5,23,0,4	1116,,,0,6	1187,0,26,0,4	1258,12,29,0,8
1047,4,24,0,4	1117,0,22,1,5	1188,5,36,0,4	1259,0,20,1,4
1048,0,28,1,7	1118,2,24,1,9	1189,5,31,0,9	1260,2,20,0,3
1049,5,21,0,1	1119,18,25,0,2	1190,11,28,1,7	1261,46,29,0,1
1050,32,27,0,1	1120,2,24,0,1	1191,0,23,0,9	1262,0,22,0,5
1051,3,22,0,6	1121,23,25,0,7	1192,0,20,0,1	1263,15,28,0,2
1052,0,25,0,1	1122,0,22,1,8	1193,46,32,0,1	1264,24,29,0,9
1053,7,22,0,1	1123,57,35,0,4	1194,49,31,0,9	1265,0,20,0,3
1054,0,25,1,6	1124,5,21,0,7	1195,0,18,0,1	1266,40,31,0,3
1055,26,25,0,5	1125,3,34,0,2	1196,0,27,0,1	1267,0,19,1,9
1056,3,24,0,4	1126,0,25,0,2	1197,12,23,0,3	1268,24,27,1,9
1057,2,21,0,2	1127,1,19,0,6	1198,4,28,0,1	1269,8,21,0,8
1058,1,21,0,6	1128,4,21,1,9	1199,9,40,1,7	1270,3,20,0,7
1059,23,23,0,5	1129,17,26,0,5	1200,0,18,0,9	1271,19,24,0,1
1060,7,20,0,3	1130,18,24,0,8	1201,0,29,0,3	1272,0,19,1,5
1061,30,33,0,5	1131,30,28,0,3	1202,39,34,0,6	1273,43,30,0,6
1062,43,28,0,1	1132,52,32,0,4	1203,2,22,0,3	1274,3,23,0,6
1063,24,35,0,5	1133,1,19,1,9	1204,1,31,1,9	1275,2,22,0,9
1064,5,23,0,4	1134,4,21,1,9	1205,0,24,0,2	1276,2,30,0,7
1065,22,26,1,2	1135,4,24,0,4	1206,0,29,0,7	1277,27,33,0,1
1066,65,36,0,8	1136,12,30,0,8	1207,0,20,0,7	1278,11,24,0,9
1067,12,25,0,5	1137,1,22,0,6	1208,16,26,0,5	1279,4,37,1,3
1068,2,23,1,3	1138,13,24,1,5	1209,43,27,0,8	1280,20,48,0,9
1069,0,23,0,8	1139,28,26,0,5	1210,0,21,0,7	1281,10,20,0,7
	1140,1,22,0,6	1211,0,25,0,4	1282,5,26,0,4

See notes at end of figure.

**Figure H-14. Names and values of selected variables in wide-format simulated dataset: 2018—Continued**

1283,1,26,1,6	1338,7,20,1,1	1393,0,26,0,7	1448,2,26,0,8
1284,20,36,0,7	1339,0,22,0,7	1394,50,29,0,9	1449,26,25,0,3
1285,0,20,0,7	1340,10,23,0,1	1395,13,24,0,6	1450,1,20,0,7
1286,0,23,0,6	1341,1,32,1,1	1396,12,21,0,1	1451,11,21,0,8
1287,0,21,0,9	1342,3,25,1,2	1397,0,21,0,8	1452,6,33,0,9
1288,0,23,0,7	1343,4,26,0,9	1398,19,36,1,6	1453,1,21,0,7
1289,19,28,0,2	1344,2,21,0,8	1399,40,33,0,9	1454,12,24,0,6
1290,0,19,1,9	1345,9,26,0,2	1400,1,28,1,3	1455,6,20,1,9
1291,1,19,0,8	1346,46,42,0,1	1401,0,28,0,9	1456,4,43,0,9
1292,0,20,1,5	1347,13,21,0,5	1402,19,22,0,5	1457,9,26,0,5
1293,2,22,0,3	1348,11,29,0,8	1403,,,0,3	1458,9,29,0,1
1294,13,26,0,2	1349,1,19,0,7	1404,18,22,0,9	1459,1,18,0,6
1295,0,27,0,8	1350,0,30,0,9	1405,0,20,1,2	1460,19,24,0,1
1296,0,22,0,2	1351,4,22,0,7	1406,1,22,1,1	1461,0,22,1,1
1297,2,25,0,8	1352,0,28,0,8	1407,15,28,0,5	1462,14,25,0,3
1298,0,19,0,2	1353,1,26,0,7	1408,5,21,1,3	1463,8,25,0,4
1299,24,24,0,5	1354,6,27,0,6	1409,25,46,0,7	1464,2,19,0,1
1300,13,33,0,1	1355,4,27,1,9	1410,0,18,0,7	1465,8,26,0,5
1301,,,0,6	1356,23,37,0,1	1411,4,23,0,7	1466,2,22,0,4
1302,33,31,0,6	1357,2,25,0,8	1412,25,27,0,8	1467,10,27,0,9
1303,10,26,0,9	1358,11,21,1,8	1413,0,19,0,5	1468,15,21,1,9
1304,6,22,0,4	1359,0,21,0,6	1414,8,23,0,3	1469,6,29,0,2
1305,0,22,0,1	1360,1,20,1,1	1415,51,33,0,4	1470,0,22,0,5
1306,1,30,0,7	1361,1,22,0,7	1416,3,24,1,1	1471,2,23,1,7
1307,9,27,1,9	1362,0,26,0,3	1417,0,25,0,8	1472,0,23,1,5
1308,6,26,1,4	1363,2,23,0,3	1418,4,19,1,1	1473,,,0,5
1309,14,23,1,7	1364,0,35,0,1	1419,39,26,0,2	1474,11,22,0,7
1310,11,31,0,4	1365,7,24,0,3	1420,21,30,0,4	1475,0,18,1,7
1311,4,20,1,4	1366,5,19,0,3	1421,7,23,0,4	1476,0,25,0,4
1312,0,29,0,6	1367,31,28,0,4	1422,29,26,0,9	1477,1,20,0,4
1313,6,26,0,9	1368,3,32,0,5	1423,28,25,0,8	1478,2,19,0,1
1314,26,35,0,3	1369,31,33,0,7	1424,5,25,0,5	1479,0,20,0,3
1315,3,18,0,1	1370,16,28,0,4	1425,15,21,0,9	1480,,,0,2
1316,0,18,1,6	1371,,,0,9	1426,40,29,0,4	1481,0,28,0,7
1317,6,29,0,9	1372,8,26,0,9	1427,2,26,1,2	1482,0,24,1,6
1318,0,19,1,2	1373,10,20,0,6	1428,0,21,0,3	1483,1,23,0,7
1319,17,37,0,9	1374,9,23,0,5	1429,0,22,0,5	1484,0,24,0,5
1320,9,23,0,6	1375,0,23,1,3	1430,9,23,1,5	1485,33,34,0,7
1321,5,25,1,6	1376,1,25,0,8	1431,0,19,0,3	1486,0,24,0,5
1322,1,24,0,8	1377,,,0,6	1432,11,24,0,9	1487,2,23,0,9
1323,7,23,1,2	1378,2,30,0,3	1433,0,24,0,2	1488,0,20,1,6
1324,4,26,0,3	1379,0,26,0,6	1434,48,41,0,9	1489,1,24,0,7
1325,31,29,0,1	1380,49,32,0,7	1435,4,20,0,3	1490,7,30,0,5
1326,2,31,0,6	1381,3,24,0,5	1436,2,21,0,2	1491,0,21,0,8
1327,5,24,0,5	1382,0,20,1,2	1437,24,31,0,4	1492,0,27,0,8
1328,14,31,0,5	1383,0,21,0,1	1438,3,18,0,2	1493,10,38,0,1
1329,4,27,0,9	1384,4,20,0,4	1439,7,21,0,1	1494,5,21,1,7
1330,2,22,0,3	1385,65,39,0,8	1440,2,26,0,4	1495,13,24,0,4
1331,11,22,1,5	1386,2,19,1,3	1441,1,22,1,8	1496,49,30,0,5
1332,0,18,0,6	1387,12,35,0,9	1442,6,27,0,4	1497,29,32,0,9
1333,6,22,0,5	1388,1,26,0,9	1443,11,25,0,6	1498,3,19,0,7
1334,14,25,0,7	1389,3,29,1,2	1444,1,24,0,1	1499,0,35,0,2
1335,5,23,0,1	1390,14,27,0,1	1445,14,34,0,6	1500,22,26,0,6
1336,13,22,0,8	1391,18,27,0,6	1446,23,26,0,7	
1337,4,46,0,8	1392,6,21,0,5	1447,20,24,0,5	

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Figure H-15. Stata programming code to create wide-format simulated dataset: 2018**

```
set seed 12345
set obs 500
generate byte ID = 1000 + _n
generate byte MOS2EMP = floor(rgamma(.4, 36))
replace MOS2EMP = . if MOS2EMP > 72
generate byte STEM = 1 - runiform() > .75 + MOS2EMP/100
generate byte AGE = floor(rweibull(1.3, 6, 18) + MOS2EMP/5)
forvalues i = 1/72 {
    generate byte EMP`i' = MOS2EMP <= `i'
}
generate byte WTE000 = runiformint(1,9)
forvalues i = 1/200 {
    gen byte WTE`: display %003.0f `i' = cond(runiform() < .5, 0,
    runiformint(10,99))
}
```

SOURCE: Simulated data based on U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## References

- Allison, P.D. (2010). *Survival Analysis Using SAS: A Practical Guide* (2nd ed.). Cary, NC: SAS Institute.
- Allison, P.D. (2014). *Event History and Survival Analysis* (2nd ed.). Los Angeles: Sage.
- Box-Steffensmeier, J.M., and Jones, B.S. (2004). *Event History Modeling: A Guide for Social Scientists*. Cambridge, England: Cambridge University Press.
- Breslow, N. (1974). Covariance Analysis of Censored Survival Data. *Biometrics*, 30: 89–99.
- Cleves, M., Gould, W.W., and Marchenko, Y.V. (2016). *An Introduction to Survival Analysis Using Stata* (Revised 3rd ed.). College Station, TX: Stata Press.
- Cox, D.R. (1972). Regression Models and Life Tables. *Journal of the Royal Statistical Society, Series B*, 34(2): 187–220.
- DesJardins, S.L. (2003). Event History Methods: Conceptual Issues and an Application to Student Departure from College. In L.W. Perna (Ed.), *Higher Education: Handbook of Theory and Research* (pp. 421–471). Dordrecht, the Netherlands: Springer.
- Efron, B. (1977). The Efficiency of Cox’s Likelihood Function for Censored Data. *Journal of the American Statistical Association*, 72(359): 557–565.
- Jones, B.S., and Branton, R.P. (2005). Beyond Logit and Probit: Cox Duration Models of Single, Repeating, and Competing Events for State Policy Adoption. *State Politics & Policy Quarterly*, 5(4): 420–443.
- Kaplan, E., and Meier, P. (1958). Nonparametric Estimation from Incomplete Observations. *Journal of the American Statistical Association*, 53(282): 457–481.
- Kassambara, A., Kosinski, M., and Biecek, P. (2019). *Survminer: Drawing Survival Curves Using ggplot2* (R package version 0.4.6). Retrieved January 29, 2020 from <https://cran.r-project.org/package=survminer>.



- Lacy, T.A. (2015). Event History Analysis: A Primer for Higher Education Researchers. In J. Huisman and M. Tight (Eds.), *Theory and Method in Higher Education Research* (pp. 71–91). Bingley, England: Emerald Group Publishing Limited.
- Lumley, T. (2004). Analysis of Complex Survey Samples. *Journal of Statistical Software*, 9(1): 1–19.
- Lumley, T. (2019). *Survey: Analysis of Complex Survey Samples* (R package version 3.35-1). Retrieved February 3, 2020 from <https://cran.r-project.org/package=survey>.
- Mills, M. (2011). *Introducing Survival and Event History Analysis*. London: Sage.
- Rebora, P., Salim, A., and Reilly, M. (2014). Bshazard: A Flexible Tool for Nonparametric Smoothing of the Hazard Function. *R Journal*, 6(2):114–122.
- Selingerova, I., and Langrova, M. (2018). *Kernhaz: Kernel Estimation of Hazard Function in Survival Analysis* (R package version 0.1.0). Retrieved January 29, 2020 from <https://cran.r-project.org/package=kernhaz>.
- StataCorp. (2019). Univariate Kernel Density Estimation. In *Stata Reference Manual, Release 16*. College Station, TX: Author. Retrieved February 26, 2020, from <http://www.stata.com/manuals/rkdensity.pdf>.
- Therneau, T. (2015). *A Package for Survival Analysis in S* (Version 2.38). Retrieved January 29, 2020 from <https://cran.r-project.org/package=survival>.
- Wickham, H. (2007). Reshaping Data with the Reshape Package. *Journal of Statistical Software*, 21(12): 1–20.

## Appendix I. Item Response Rates and Imputation Results

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**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3ACTDUTY	Military status, as of B&B:08/18 interview: Active duty	14,670	100.00	100.00	100.00	100.00
B3AFFCHLD	Education cost, as of B&B:08/18 interview: Delayed having children	14,670	84.66	85.41	83.99	79.08
B3AFFEDJB	Education cost, as of B&B:08/18 interview: Took job instead of enrolling	14,670	84.67	85.37	84.04	79.54
B3AFFHOME	Education cost, as of B&B:08/18 interview: Delayed buying a home	14,670	84.74	85.50	84.00	79.67
B3AFFLESS	Education cost, as of B&B:08/18 interview: Took job outside field of study	14,670	84.76	85.48	84.07	79.67
B3AFFMARR	Education cost, as of B&B:08/18 interview: Delayed getting married	14,670	84.67	85.38	84.01	79.67
B3AFFWKMR	Education cost, as of B&B:08/18 interview: Worked more than desired	14,670	84.79	85.52	84.10	79.67
B3AGE	Age, as of as of December 31, 2018	14,670	100.00	100.00	100.00	100.00
B3ALLHRS	Hours worked per week in all jobs in 2018	12,920	88.63	89.14	87.99	85.96
B3ALONE	Household composition, as of B&B:08/18 interview: Living alone	14,670	85.80	86.52	85.18	80.38
B3BADEPCHILD	Months between BA completion and first dependent child, as of B&B:08/18 interview	7,520	81.29	82.98	79.34	70.97
B3BORCUM	Cumulative amount borrowed in federal and private student loans, as of 2018	14,670	83.08	84.24	81.24	80.44
B3CARAMT	Monthly car payment amount, as of B&B:08/18 interview	14,670	84.50	85.15	84.03	78.91
B3CITZN	Citizenship status, as of B&B:08/18 interview	14,670	97.65	97.89	97.16	97.84
B3CJBAL	Current job, as of B&B:08/18 interview: Satisfaction with work-life balance	12,820	86.47	86.78	86.55	81.36
B3CJBEN	Current job: satisfaction with benefits	12,820	86.29	86.77	86.24	79.86
B3CJCHAL	Current job: satisfaction with challenge of work	12,820	86.43	86.80	86.41	81.29
B3CJCURL	Current job: part of a career in industry	12,820	86.66	86.99	86.77	81.21
B3CJEMPFPPT	Current job: starting job status	12,820	90.62	90.85	90.24	90.11
B3CJEMPSLF	Current job: self-employed	12,820	93.44	93.88	92.58	93.57
B3CJFTPT	Current job: full time/part time status	12,820	95.69	95.65	95.85	95.19
B3CJHINS	Current job: health insurance offered	12,820	86.69	87.01	86.77	81.37
B3CJHRS	Current job: hours worked per week	12,820	89.72	90.16	88.98	88.83
B3CJIMP	Current job: satisfaction with importance of work	12,820	86.39	86.74	86.39	81.37
B3CJMOS	Current job: months held	12,820	93.31	93.77	92.38	93.57
B3CJNSFA	Current job: requires a bachelor's degree or higher	12,820	86.77	87.10	86.87	81.31
B3CJOCC33	Current job: occupation	12,820	91.99	92.50	90.94	92.36
B3CJPAY	Current job: satisfaction with compensation	12,820	86.43	86.74	86.50	81.36
B3CJSAL	Current job: annualized salary	12,820	87.02	87.62	85.85	86.98
B3CJSEC	Current job: satisfaction with job security	12,820	86.42	86.76	86.43	81.37
B3CJSTCDE	Current job: employer state	12,820	92.82	93.37	91.84	92.27
B3CJSUP	Current job: supervises others	12,820	87.04	87.43	86.95	82.07

See notes at end of table.

**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3CLICENSE	Active industry certification or occupational license in 2018	14,670	87.48	88.21	86.79	82.48
B3CONTNON	Contributed to non-employer-based retirement account in past 12 months, as of B&B:08/18 interview	8,570	68.34	69.21	69.03	50.60
B3CRDBAL	Credit card balance, as of B&B:08/18 interview	6,750	66.66	68.53	63.53	63.11
B3CREDCRD	Credit card status, as of B&B:08/18 interview	14,670	85.58	86.22	85.12	79.96
B3CSTDYCR	Monthly daycare costs, as of B&B:08/18 interview	6,960	78.25	80.59	75.54	59.55
B3CURTCH	Currently working as a regular classroom teacher, as of B&B:08/18 interview	14,670	98.56	98.47	98.77	98.41
B3DADED	Father's highest education level, as of B&B:08/18 interview	14,670	83.44	83.17	84.84	77.16
B3DEMPDIS	Reason not working for pay: Disabled, in 2018	2,130	41.98	42.53	39.83	49.42
B3DEMPHM	Reason not working for pay: Homemaker, in 2018	2,130	42.03	42.70	39.67	49.42
B3DEMPTMP	Reason not working for pay: Waiting to report to work or layoff, in 2018	2,130	41.81	42.35	39.64	49.42
B3DEMPTRV	Reason not working for pay: Traveling, in 2018	2,130	41.99	42.53	39.85	49.42
B3DEMPVOL	Reason not working for pay, as of B&B:08/18 interview: Volunteering or unpaid internship	2,130	41.92	42.42	39.85	49.42
B3DEP2	Number of dependent children, as of B&B:08/18 interview	14,670	97.72	97.87	97.62	96.43
B3DEPAGEHIGH	Age of oldest dependent child, as of B&B:08/18 interview	7,520	80.78	82.54	78.60	70.84
B3DEPAGELOW	Age of youngest dependent child, as of B&B:08/18 interview	7,520	80.78	82.54	78.60	70.84
B3DPNTS	Household composition, as of B&B:08/18 interview: Living with children or dependents in 2018	14,670	85.80	86.52	85.18	80.38
B3DSEARCH	Looking for a job in 2018	14,670	98.94	98.92	98.97	98.94
B3DWRKS	Primarily student or employee while enrolled in 2018	2,060	27.97	29.45	23.79	35.83
B3EMPSTAT	Employment status considering current job, as of the B&B:08/18 interview	14,670	95.95	95.97	96.05	95.02
B3ENGL	English is native language, as of B&B:08/18 interview	14,670	97.06	97.27	96.52	98.06
B3EVEREMP	Ever employed since bachelor's degree award date as of 2018	14,670	99.93	99.96	99.86	99.99
B3EVRDEF	Ever defaulted on a federal or private student loan, as of 2018	12,000	77.59	78.08	75.90	82.64
B3EVREMLAID	Ever received employer assistance for postbaccalaureate degree, self-reported as of 2018	8,790	65.13	64.29	66.26	69.80
B3EVRENRLFP	Ever enrolled at private for-profit institution since bachelor's degree completion	8,790	87.66	87.80	87.53	86.20
B3EVRFELSHIP	Ever received assistantships or fellowships for post-BA degree, as of B&B:08/18 interview	8,790	63.29	62.59	64.59	63.35

See notes at end of table.

**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3EVRGRANT	Ever received grants or scholarships for postbaccalaureate degree, self-reported as of 2018	8,790	69.30	68.36	71.38	65.87
B3EVRGRDENR	Ever enrolled in a graduate degree program since bachelor's degree completion	8,790	87.41	87.66	87.42	82.26
B3EVRPRIVDEF	Ever defaulted on private student loans, self-reported as of 2018	6,190	49.42	47.99	51.48	49.88
B3EVRPRIVPIF	Ever had at least one private student loan paid in full, self-reported as of 2018	6,190	51.39	49.37	54.58	50.53
B3EVRTCH	Taught at K-12 level between BA completion and B&B:08/18 interview	14,670	89.61	90.47	88.84	83.21
B3EVRUGENR	Ever enrolled in an undergraduate degree program since bachelor's degree completion	8,790	88.10	88.21	88.12	85.86
B3FEDCUM3	Cumulative amount borrowed in federal student loans, as of 2018	14,670	100.00	100.00	100.00	100.00
B3FEDOWEPCT	Current ratio of amount owed to amount borrowed for federal student loans in 2018	11,390	100.00	100.00	100.00	100.00
B3FEDPAY	Current monthly payment on federal student loans in 2018	5,190	60.27	65.88	53.99	44.47
B3FEDPAYMISS	Missed a federal student loan payment within 12 months, self-reported in 2018	5,560	59.44	60.80	60.15	46.74
B3FEDPAYMORE	Made federal student loan prepayment within 12 months, self-reported in 2018	5,560	59.45	60.80	60.15	46.74
B3FEDPAYPLAN_ALT	Currently enrolled in alternative repayment plan on at least one federal student loan in 2018	11,390	82.93	85.49	81.35	66.28
B3FEDPAYPLAN_GRD	Currently enrolled in graduated repayment plan on at least one federal student loan in 2018	11,390	83.27	85.90	81.43	67.38
B3FEDPAYPLAN_INC	Currently enrolled in income-based repayment plan on at least one federal student loan in 2018	11,390	85.32	87.69	83.97	69.28
B3FEDPAYPLAN_STND	Currently enrolled in standard repayment plan on at least one federal student loan in 2018	11,390	84.83	87.22	83.59	67.86
B3FINWHO	Adult in household who shares financial responsibilities, as of B&B:08/18 interview	14,670	93.47	93.88	93.13	90.26
B3GENDER	Gender identity, as of B&B:08/18 interview	14,670	98.19	98.35	97.91	97.96
B3GENMIN	Gender minority status, as of B&B:08/18 interview	14,670	98.05	98.27	97.69	97.44
B3HIBTMON	Highest post-bachelor's degree program completed, as of 2018: Number of months elapsed between start date and completion date	7,330	83.45	83.88	83.47	71.19

See notes at end of table.

**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3HICDERMAJ	Highest degree completed between BA completion and B&B:08/18 interview: Major or field of study (6-digit CIP code)	7,330	84.92	85.34	84.78	75.53
B3HICINT	Highest degree completed between BA completion and B&B:08/18 interview: Enrollment intensity	7,330	85.17	85.54	85.13	75.53
B3HIDEG	Highest post-bachelor's degree completed, as of 2018: Degree type	7,330	85.09	85.24	85.47	75.47
B3HOMOWE	Amount owed on mortgage for primary residence, as of B&B:08/18 interview	9,580	79.67	80.93	77.68	75.27
B3HOMVAL	Value of residence, as of B&B:08/18 interview	9,580	80.33	81.69	78.18	75.48
B3HOTH	Household composition, as of B&B:08/18 interview: Living with others	14,670	85.80	86.52	85.18	80.38
B3HOUSE	Housing Status, as of B&B:08/18 interview	14,670	91.98	92.58	90.84	91.78
B3HRDSHP	Financial cost of degree posed hardship	8,790	87.72	88.06	87.46	83.82
B3HSTYPE	Type of high school attended, as of B&B:08/18 interview	14,670	97.57	97.81	97.28	96.24
B3IDRAWARE	Ever heard of income-driven repayment (IDR) plans, as of 2018	3,580	56.12	57.21	55.58	50.47
B3IDRNOENRINELIG	Currently not enrolled in income-driven repayment (IDR) programs, assumed ineligible, as of 2018	2,200	51.75	53.67	49.12	47.49
B3IDRNOENROTHR	Currently not enrolled in income-driven repayment (IDR) programs, other reason, as of 2018	2,200	51.75	53.67	49.12	47.49
B3IDRNOENRPAY	Currently not enrolled in income-driven repayment (IDR) programs, did not need lower monthly payments, as of 2018	2,200	51.75	53.67	49.12	47.49
B3IDRNOENRTERMS	Currently not enrolled in income-driven repayment (IDR) programs, did not like terms of these plans, as of 2018	2,200	51.75	53.67	49.12	47.49
B3IDRNOENRTIME	Currently not enrolled in income-driven repayment (IDR) programs, too much time or effort, as of 2018	2,200	51.75	53.67	49.12	47.49
B3INC18	Annualized total salary for all current jobs in 2018	12,820	90.52	91.05	89.43	90.91
B3INCHO	Satisfaction with quality of education at BA institution, as of B&B:08/18 interview	14,670	85.12	85.83	84.48	79.89
B3INCOM	Gross income in 2017	14,670	95.54	95.59	95.46	95.40
B3INCSP	Spouse or domestic partner's income in 2017	10,520	75.88	76.74	75.49	65.64
B3JBNUM	Number of jobs for pay since bachelor's degree award date as of 2018	14,670	91.16	90.85	91.64	92.04
B3LGBTQ	Sexual orientation, as of B&B:08/18 interview	14,670	97.79	97.88	97.58	97.94

See notes at end of table.

**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3LNPAY	Current monthly student loan payment on federal and private student loans in 2018	7,570	39.35	41.76	37.15	29.37
B3LNPAYPCT	Current monthly student loan payment as percent of monthly earnings in 2018	6,680	39.04	40.80	37.96	28.67
B3MAJCHO	Satisfaction with undergraduate major choice, as of B&B:08/18 interview	14,670	84.94	85.54	84.59	79.19
B3MARCHA	Family status (child dependents only), as of B&B:08/18 interview	14,670	97.69	97.83	97.60	96.43
B3MARR	Marital status, as of B&B:08/18 interview	14,670	98.56	98.55	98.57	98.61
B3MEMP	Months employed since bachelor's degree award date as of 2018	14,670	86.25	87.31	84.56	83.85
B3MILSERV	Military status, as of B&B:08/18 interview: Ever served in the military	14,670	100.00	100.00	100.00	100.00
B3MOLF	Months out of the labor force since bachelor's degree award date as of 2018	14,670	81.85	82.96	80.03	79.57
B3MOMED	Mother's highest education level, as of B&B:08/18 interview	14,670	83.35	83.10	84.64	77.71
B3MTGAMT	Monthly rent or mortgage payment, as of B&B:08/18 interview	13,820	84.20	84.85	83.65	79.26
B3NDGCWK	Enrolled in non-degree coursework since bachelor's degree completion	14,670	88.43	89.14	87.81	83.25
B3NEGOT	Ever negotiated salary/benefits as of 2018	14,670	86.23	86.82	85.81	81.08
B3NMUN12	Number of dependent children under age 12, as of B&B:08/18 interview	14,670	90.38	90.97	90.14	84.00
B3NUMNCD	Number of non-child dependents, as of B&B:08/18 interview	14,670	84.95	85.61	84.62	78.27
B3ONLIN	Ever enrolled in an entirely online degree program since bachelor's degree completion	8,790	74.24	74.04	75.35	66.41
B3PAREDUC	Highest education attained by either parent, as of B&B:08/18 interview	14,670	83.15	82.92	84.51	76.67
B3PARIL	Household composition, as of B&B:08/18 interview: Living with parents or in-laws	14,670	85.80	86.52	85.18	80.38
B3PCEMP	Percent of time employed from bachelor's degree award date to 2018	14,670	86.25	87.31	84.56	83.85
B3PCOLF	Percent of time out of the labor force from bachelor's degree award date to 2018	14,670	81.85	82.96	80.03	79.57
B3PCUNEM	Percent of time unemployed from bachelor's degree award date to 2018	14,670	81.85	82.96	80.03	79.57
B3PRIVCUM	Cumulative amount borrowed in private student loans, self-reported as of 2018	14,670	83.08	84.24	81.24	80.44
B3PRIVDEF CUR	Currently in default on at least one private student loan, self-reported in 2018	6,190	50.58	48.92	53.09	50.44

See notes at end of table.



**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3PRIVDFRCUR	Currently deferring at least one private student loan, self-reported in 2018	6,190	50.58	48.92	53.09	50.44
B3PRIVLN	Ever received a private student loan, self-reported as of 2018	14,670	91.18	90.85	91.66	92.34
B3PRIVPAY	Current monthly payment on private student loans, as of B&B:08/18 interview	4,690	34.56	32.21	38.46	32.23
B3PRIVPAYMISS	Ever missed a private student loan payment, self-reported as of 2018	4,680	36.12	33.94	39.65	34.42
B3PRIVPAYMORE	Made private student loan prepayment within 12 months, self-reported in 2018	4,690	36.09	33.91	39.62	34.42
B3PRIVRPMTCUR	Currently in repayment on at least one private student loan, self-reported in 2018	6,190	50.56	48.89	53.09	50.44
B3PSTGRD	Enrolled in additional degree program since completing bachelor's degree, as of 2018	14,670	93.70	93.81	93.33	94.80
B3REGTCH18	Worked as a regular classroom teacher between B&B:08/12 interview and B&B:08/18 interview, as of B&B:08/18 interview	14,670	99.05	99.02	99.10	99.03
B3REGTCHST	Regular classroom teacher status between BA completion and B&B:08/18 interview, as of B&B:08/18 interview	14,670	86.64	87.16	86.33	81.82
B3RESVNTATGD	Military status, as of B&B:08/18 interview: Reserves and National Guard	14,670	100.00	100.00	100.00	100.00
B3RETEMP	Had an employer-based retirement account, as of B&B:08/18 interview	14,670	84.70	85.51	84.21	77.13
B3RETIRE	Had retirement account, as of B&B:08/18 interview	14,670	83.00	83.67	82.85	74.96
B3RETNON	Had a non-employer-based retirement account, as of B&B:08/18 interview	14,670	83.19	83.84	83.01	75.56
B3RPMTCUR	Currently in repayment on at least one federal or private student loan in 2018	12,000	83.56	83.65	82.44	89.42
B3SELLPO	Result of sale of all major possessions, as of B&B:08/18 interview	14,670	84.60	85.17	84.23	79.44
B3SEX	Sex assigned at birth, as of B&B:08/18 interview	14,670	98.35	98.52	98.15	97.48
B3SMSTE	Current job, as of B&B:08/18 interview: Worked in same state as BA institution	12,820	92.82	93.37	91.84	92.27
B3SPAMT	Spouse or domestic partner's student loan amount borrowed, as of B&B:08/18 interview	9,700	74.86	75.90	74.65	58.85
B3SPCOL	Spouse or domestic partner attended college or graduate school in 2018-19, as of B&B:08/18 interview	10,520	79.30	80.33	78.63	68.63
B3SEMP	Spouse or domestic partner employed in 2017	10,520	79.42	80.48	78.71	68.56

See notes at end of table.

**Table I-1. Weighted item response rates using analysis weight WTG000 overall and by control of baccalaureate-granting institution: 2018—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B3SPLNPY	Spouse or domestic partner's monthly payment on student loans, as of B&B:08/18 interview	4,720	41.33	42.80	41.74	16.33
B3SPLV	Highest education attained by spouse or domestic partner, as of B&B:08/18 interview	10,520	79.37	80.35	78.80	68.63
B3SPODP	Household composition, as of B&B:08/18 interview: Living with spouse or domestic partner	14,670	85.80	86.52	85.18	80.38
B3SPOWE	Spouse or domestic partner's loan amount owed, as of B&B:08/18 interview	6,430	61.48	62.98	61.21	38.92
B3STRESS	Financial difficulty in past 12 months, as of B&B:08/18 interview	14,670	91.45	92.10	90.35	90.35
B3TOTEMP	Number of unique employers since bachelor's degree award date as of 2018	14,670	91.16	90.85	91.64	92.04
B3TOTENRDEG	Total number of degree programs enrolled in since bachelor's degree completion	14,670	93.70	93.81	93.33	94.80
B3TOTFEDOWE3	Amount owed on federal student loans in 2018	11,390	100.00	100.00	100.00	100.00
B3USBORN	Born in the U.S., as of B&B:08/18 interview	14,670	97.70	97.98	97.21	97.29
B3VET	Military status, as of B&B:08/18 interview: Veteran	14,670	100.00	100.00	100.00	100.00
B3VLNTR	Volunteered in past 12 months, as of B&B:08/18 interview	14,670	82.44	83.02	81.91	78.25
B3VOTEREG	Registered to vote, as of B&B:08/18 interview	14,510	84.77	85.21	84.71	79.14
B3VTNEL	Voted in 2016 presidential election, as of B&B:08/18 interview	14,510	84.85	85.33	84.73	79.08
B3VLNTRHRS	Number of hours volunteered in past 12 months, as of B&B:08/18 interview	14,670	82.44	83.02	81.91	78.25
B3WORTHG	Graduate education was worth the financial cost, as of B&B:08/18 interview	7,960	92.94	92.67	93.61	90.85
B3WORTHUG	Undergraduate education was worth the financial cost, as of B&B:08/18 interview	14,670	85.12	85.80	84.66	79.17
B3YRSCCAR	Years in current career as of 2018	11,350	84.85	85.30	84.98	76.61
H1OTHDEG	Highest degree attained before BA	14,670	97.42	97.22	98.19	94.64
MAJORS4Y	Field of study: undergraduate	14,670	99.70	99.72	99.72	99.29
RACE	Race-ethnicity	14,670	100.00	100.00	100.00	100.00

NOTE: K–12 = kindergarten through 12<sup>th</sup>-grade. BA = bachelor's degree. CIP = Classification of Instructional Programs. Item response rates were computed using analysis weight WTG000 (B&B:08/18 response).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table I-2. Weighted mean values of continuous variables before and after imputation using analysis weight WTG000: 2018**

Variable name	Variable label	Mean before imputation	Mean after imputation	Difference	Percent relative difference
B3ALLHRS	Hours worked per week in all jobs in 2018	41.72	41.69	0.03	0.07
B3BADEPCHILD	Months between BA completion and first dependent child, as of B&B:08/18 interview	38.67	37.79	0.88	2.32
B3CARAMT	Monthly car payment amount, as of B&B:08/18 interview	265.67	267.09	-1.43	-0.53
B3CJHRS	Current job: hours worked per week	39.61	39.61	0.01	0.02
B3CJMOS	Current job: months held	61.66	61.76	-0.11	-0.17
B3CJSAL	Current job: annualized salary	74,641.94	73,947.61	694.33*	0.94
B3CRDBAL	Credit card balance, as of B&B:08/18 interview	9,685.54	9,834.70	-149.16	-1.52
B3CSTDYCR	Monthly daycare costs, as of B&B:08/18 interview	529.46	534.31	-4.86	-0.91
B3DEP2	Number of dependent children, as of B&B:08/18 interview	0.90	0.90	0.00	0.12
B3DEPAGEHIGH	Age of oldest dependent child, as of B&B:08/18 interview	6.70	6.81	-0.11*	-1.62
B3DEPAGELOW	Age of youngest dependent child, as of B&B:08/18 interview	3.99	4.01	-0.01	-0.27
B3FEDPAY	Current monthly payment on federal student loans in 2018	313.92	319.70	-5.79	-1.81
B3HIBTMON	Highest post-bachelor's degree program completed, as of 2018: Number of months elapsed between start date and completion date	34.22	34.13	0.10	0.29
B3HOMOWE	Amount owed on mortgage for primary residence, as of B&B:08/18 interview	196,608.39	198,967.23	-2,358.84*	-1.19
B3HOMVAL	Value of residence, as of B&B:08/18 interview	339,462.29	333,794.64	5,667.65*	1.70
B3INC18	Annualized total salary for all current jobs in 2018	77,885.93	77,133.24	752.69*	0.98
B3INCOM	Gross income in 2017	73,026.89	73,110.19	-83.31	-0.11
B3INCSP	Spouse or domestic partner's income in 2017	65,674.47	64,944.46	730.02	1.12
B3JBNUM	Number of jobs for pay since bachelor's degree award date as of 2018	4.62	4.54	0.08*	1.73
B3MEMP	Months employed since bachelor's degree award date as of 2018	106.84	106.70	0.14	0.13
B3MOLF	Months out of the labor force since bachelor's degree award date as of 2018	10.62	11.04	-0.42*	-3.80
B3MTGAMT	Monthly rent or mortgage payment, as of B&B:08/18 interview	1,425.23	1,423.69	1.54	0.11
B3NMUN12	Number of dependent children under age 12, as of B&B:08/18 interview	0.70	0.77	-0.07*	-9.19
B3NUMNCD	Number of non-child dependents, as of B&B:08/18 interview	0.04	0.04	0.00	-5.84
B3PRIVCUM	Cumulative amount borrowed in private student loans, self-reported as of 2018	7,475.19	9,226.25	-1,751.06*	-18.98
B3PRIVPAY	Current monthly payment on private student loans, as of B&B:08/18 interview	409.10	393.78	15.32	3.89
B3SPAMT	Spouse or domestic partner's student loan amount borrowed, as of B&B:08/18 interview	24,770.23	25,057.26	-287.03	-1.15
B3SPLNPY	Spouse or domestic partner's monthly payment on student loans, as of B&B:08/18 interview	432.85	423.40	9.45	2.23
B3TOTENRDEG	Total number of degree programs enrolled in since bachelor's degree completion	0.74	0.82	-0.08*	-9.24
B3VLNTRHRS	Number of hours volunteered in past 12 months, as of B&B:08/18 interview	39.75	39.97	-0.23	-0.57

\*  $p < .05$ .

NOTE: BA = bachelor's degree. Means were computed using analysis weight WTG000 (B&B:08/18 response). Cases with legitimate skips for the item are not included in the estimated means. The difference is computed as the mean before imputation minus the mean after imputation. The percent relative difference is computed as the difference divided by the mean after imputation and then multiplied by 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3AFFCHLD	Education cost, as of B&B:08/18 interview: Delayed having children	0	No	77.57	77.57	0.00	0.00
		1	Yes	22.43	22.43	0.00	-0.01
B3AFFEDJB	Education cost, as of B&B:08/18 interview: Took job instead of enrolling	0	No	73.82	74.03	-0.21	-0.29
		1	Yes	26.18	25.97	0.21	0.81
B3AFFHOME	Education cost, as of B&B:08/18 interview: Delayed buying a home	0	No	65.38	65.21	0.17	0.26
		1	Yes	34.62	34.79	-0.17	-0.49
B3AFFLESS	Education cost, as of B&B:08/18 interview: Took job outside field of study	0	No	66.19	66.15	0.04	0.06
		1	Yes	33.81	33.85	-0.04	-0.11
B3AFFMARR	Education cost, as of B&B:08/18 interview: Delayed getting married	0	No	85.28	85.32	-0.04	-0.05
		1	Yes	14.72	14.68	0.04	0.28
B3AFFWKMR	Education cost, as of B&B:08/18 interview: Worked more than desired	0	No	62.95	63.06	-0.11	-0.17
		1	Yes	37.05	36.94	0.11	0.29
B3ALONE	Household composition, as of B&B:08/18 interview: Living alone	0	Do not live alone	85.79	85.49	0.30	0.35
		1	Live alone	14.21	14.51	-0.30	-2.08
B3CITZN	Citizenship status, as of B&B:08/18 interview	1	U.S. citizen	98.39	98.35	0.04	0.04
		2	Resident alien or other eligible non-citizen	1.21	1.23	-0.02	-1.46
		3	In the country on a visa	0.13	0.13	0.00*	2.41
		4	None of the above	0.26	0.29	-0.03	-9.16
B3CJBAL	Current job, as of B&B:08/18 interview: Satisfaction with work-life balance	1	Very dissatisfied	3.50	3.57	-0.07	-1.90
		2	Somewhat dissatisfied	11.09	10.91	0.18	1.68
		3	Neither satisfied nor dissatisfied	12.21	12.34	-0.13	-1.04
		4	Somewhat satisfied	33.86	33.86	-0.01	-0.02
		5	Very satisfied	39.34	39.32	0.02	0.05

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3CJBEN	Current job: satisfaction with benefits	1	Very dissatisfied	7.42	7.77	-0.35	-4.45
		2	Somewhat dissatisfied	9.22	9.23	-0.01	-0.08
		3	Neither satisfied nor dissatisfied	14.54	14.45	0.09	0.63
		4	Somewhat satisfied	35.89	36.23	-0.34	-0.94
		5	Very satisfied	32.93	32.32	0.60*	1.87
B3CJCHAL	Current job: satisfaction with challenge of work	1	Very dissatisfied	2.65	2.66	-0.01	-0.45
		2	Somewhat dissatisfied	6.67	6.76	-0.09	-1.38
		3	Neither satisfied nor dissatisfied	14.93	14.81	0.12	0.81
		4	Somewhat satisfied	37.55	37.78	-0.23	-0.61
		5	Very satisfied	38.20	37.98	0.21	0.57
B3CJCURL	Current job: part of a career in industry	0	Did not consider job to be part of career	13.69	13.46	0.23	1.71
		1	Considered job to be part of career	86.31	86.54	-0.23	-0.27
B3CJEMPFT	Current job: starting job status	0	Started part-time	17.61	17.59	0.01	0.07
		1	Started full-time	82.39	82.41	-0.01	-0.01
B3CJEMPSLF	Current job: self-employed	0	Not self-employed	92.17	92.12	0.05	0.05
		1	Self-employed	7.83	7.88	-0.05	-0.62
B3CJFTPT	Current job: full time/part time status	0	Worked part-time	14.99	14.91	0.08	0.56
		1	Worked full-time	85.01	85.09	-0.08	-0.10
B3CJHINS	Current job: health insurance offered	0	Did not offer health insurance	16.16	16.28	-0.12	-0.74
		1	Offered health insurance	83.84	83.72	0.12	0.14
B3CJIMP	Current job: satisfaction with importance of work	1	Very dissatisfied	2.20	2.23	-0.04	-1.57
		2	Somewhat dissatisfied	5.14	5.07	0.07	1.33
		3	Neither satisfied nor dissatisfied	11.95	11.87	0.09	0.74
		4	Somewhat satisfied	34.85	35.03	-0.18	-0.51
		5	Very satisfied	45.86	45.80	0.06	0.13
B3CJNSFA	Current job: requires a bachelor's degree or higher	0	Did not require bachelor's degree	26.73	26.88	-0.15	-0.56
		1	Required bachelor's degree	73.27	73.12	0.15	0.21

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3CJPAY	Current job: satisfaction with compensation	1	Very dissatisfied	7.55	7.57	-0.02	-0.30
		2	Somewhat dissatisfied	15.61	15.41	0.20	1.28
		3	Neither satisfied nor dissatisfied	14.09	14.03	0.06	0.42
		4	Somewhat satisfied	39.59	39.76	-0.17	-0.42
		5	Very satisfied	23.17	23.23	-0.06	-0.28
B3CJSEC	Current job: satisfaction with job security	1	Very dissatisfied	3.37	3.52	-0.15	-4.18
		2	Somewhat dissatisfied	5.74	5.90	-0.15	-2.61
		3	Neither satisfied nor dissatisfied	13.36	13.38	-0.03	-0.19
		4	Somewhat satisfied	34.20	34.08	0.12	0.36
		5	Very satisfied	43.33	43.12	0.20	0.47
B3CJSTCDE	Current job: employer state	1	Alabama	1.17	1.28	-0.11	-8.48
		2	Alaska	0.20	0.18	0.01*	7.73
		3	Arizona	1.42	1.42	-0.01	-0.62
		4	Arkansas	0.54	0.52	0.02	4.11
		5	California	10.82	10.79	0.03	0.24
		6	Colorado	2.49	2.56	-0.07	-2.64
		7	Connecticut	1.10	1.06	0.04	3.98
		8	Delaware	0.26	0.24	0.01*	6.01
		9	District of Columbia	1.05	0.99	0.06*	5.94
		10	Florida	4.84	4.88	-0.04	-0.79
		11	Georgia	3.06	3.16	-0.11	-3.41
		12	Hawaii	0.38	0.38	-0.01	-1.81
		13	Idaho	0.41	0.40	0.01	2.21
		14	Illinois	4.52	4.45	0.07	1.52
		15	Indiana	2.00	1.97	0.02	1.15
		16	Iowa	0.89	0.85	0.04	4.80
		17	Kansas	0.73	0.74	-0.01	-2.00
		18	Kentucky	1.33	1.35	-0.02	-1.55
		19	Louisiana	1.22	1.26	-0.03	-2.57
		20	Maine	0.43	0.40	0.03*	7.47
		21	Maryland	1.76	1.73	0.03	1.65
		22	Massachusetts	2.55	2.64	-0.09	-3.36
		23	Michigan	2.14	2.16	-0.02	-0.92
		24	Minnesota	2.32	2.32	0.01	0.27
		25	Mississippi	0.42	0.39	0.03*	7.73

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3CJSTCDE—Continued	Current job: employer state	26	Missouri	2.04	2.02	0.02	1.01
		27	Montana	0.38	0.41	-0.03	-6.47
		28	Nebraska	0.61	0.63	-0.02	-3.64
		29	Nevada	0.62	0.62	0.01	0.99
		30	New Hampshire	0.26	0.25	0.00	1.89
		31	New Jersey	2.36	2.51	-0.15	-6.06
		32	New Mexico	0.34	0.33	0.01	2.83
		33	New York	8.26	8.22	0.04	0.52
		34	North Carolina	3.17	3.15	0.02	0.57
		35	North Dakota	0.29	0.27	0.02*	6.31
		36	Ohio	3.72	3.59	0.12*	3.38
		37	Oklahoma	1.08	1.07	0.01	1.19
		38	Oregon	1.44	1.44	0.01	0.47
		39	Pennsylvania	4.71	4.78	-0.07	-1.52
		40	Rhode Island	0.32	0.37	-0.04	-11.87
		41	South Carolina	2.07	1.97	0.10*	5.18
		42	South Dakota	0.44	0.43	0.00	0.87
		43	Tennessee	2.13	2.10	0.03	1.62
		44	Texas	6.06	6.16	-0.10	-1.64
		45	Utah	1.24	1.21	0.03	2.76
		46	Vermont	0.20	0.19	0.01	3.59
		47	Virginia	3.24	3.31	-0.07	-2.08
		48	Washington	2.62	2.57	0.05	1.91
		49	West Virginia	0.43	0.43	0.00	0.82
		50	Wisconsin	1.87	1.85	0.03	1.38
		51	Wyoming	0.08	0.08	0.00	-1.00
		52	Puerto Rico	0.64	0.63	0.01	0.93
		55	Guam	0.02	0.01	0.00	7.73
		58	Northern Mariana Islands	0.00	0.00	0.00	7.73
		60	U.S. Virgin Islands	0.00	0.00	0.00	7.73
		61	American Military	0.03	0.03	0.00	7.73
		99	Foreign country	1.28	1.22	0.06*	5.18
B3CJSUP	Current job: supervises others	0	Did not supervise the work of others	43.49	43.79	-0.30	-0.68
		1	Supervised the work of others	48.10	48.33	-0.23	-0.47
		2	Not applicable, self-employed	8.40	7.88	0.53*	6.69

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3CLICENSE	Active industry certification or occupational license in 2018	0	Did not have active professional certification or state/industry license	60.57	60.39	0.18	0.30
		1	Had active professional certification or state/industry license	39.43	39.61	-0.18	-0.45
B3CONTEMP	Contributed to employer-based retirement account in past 12 months, as of B&B:08/18 interview	0	Had not contributed to an employer-based retirement account in 12 months preceding interview	15.78	15.77	0.01	0.04
		1	Had contributed to an employer-based retirement account in 12 months preceding interview	84.22	84.23	-0.01	-0.01
B3CONTNON	Contributed to non-employer-based retirement account in past 12 months, as of B&B:08/18 interview	0	Had not contributed to a non-employer-based retirement account in 12 months preceding interview	25.23	25.42	-0.19	-0.74
		1	Had contributed to a non-employer-based retirement account in 12 months preceding interview	74.77	74.58	0.19	0.25
B3CREDCRD	Credit card status, as of B&B:08/18 interview	0	No credit cards	6.93	7.03	-0.10	-1.49
		1	Usually pays off credit card balance(s)	55.54	55.27	0.28	0.50
		2	Usually carries over credit card balance(s)	37.53	37.70	-0.17	-0.46
B3CURTCH	Currently working as a regular classroom teacher, as of B&B:08/18 interview	0	No	93.29	92.90	0.39*	0.42
		1	Yes	6.71	7.10	-0.39*	-5.54
B3DADED	Father's highest education level, as of B&B:08/18 interview	0	Don't know	2.66	3.48	-0.82*	-23.63
		1	Did not complete high school	6.72	6.48	0.24	3.68
		2	High school diploma or equivalent	23.41	24.57	-1.16*	-4.72
		3	Vocational/technical training	6.06	6.00	0.06	0.99
		4	Some college but no degree	10.06	10.24	-0.19	-1.85
		5	Associate's degree	5.01	4.86	0.15	3.12
		6	Bachelor's degree	23.87	23.33	0.54	2.31
		7	Master's degree or equivalent	12.95	12.24	0.71*	5.80
		8	Professional degree	5.00	4.71	0.28*	5.98
		9	Doctoral degree	4.28	4.08	0.19	4.72

See notes at end of table.



**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3DEMPDIS	Reason not working for pay: Disabled, in 2018	0	Not unable to work because of disability	86.52	86.29	0.23	0.27
		1	Unable to work because of disability	13.48	13.71	-0.23	-1.67
B3DEMPHM	Reason not working for pay: Homemaker, in 2018	0	Not currently a homemaker	38.74	40.85	-2.11	-5.16
		1	Currently a homemaker	61.26	59.15	2.11	3.57
B3DEMPTMP	Reason not working for pay: Waiting to report to work or layoff, in 2018	0	Not temporarily laid off	95.49	94.81	0.68	0.71
		1	Temporarily laid off	4.51	5.19	-0.68	-13.03
B3DEMPTRV	Reason not working for pay: Traveling, in 2018	0	Not currently travelling	94.31	94.81	-0.50	-0.53
		1	Currently travelling	5.69	5.19	0.50	9.59
B3DEMPVOL	Reason not working for pay, as of B&B:08/18 interview: Volunteering or unpaid internship	0	Not currently volunteering	94.19	94.10	0.09	0.10
		1	Currently volunteering	5.81	5.90	-0.09	-1.56
B3DPNTS	Household composition, as of B&B:08/18 interview: Living with children or dependents in 2018	0	Do not live with dependents	55.36	55.72	-0.36	-0.65
		1	Live with dependents	44.64	44.28	0.36	0.82
B3DSEARCH	Looking for a job in 2018	0	Not looking for a job	78.84	78.71	0.12	0.16
		1	Looking for a job	21.16	21.29	-0.12	-0.58
B3DWRKS	Primarily student or employee while enrolled in 2018	1	A student working to meet expenses	19.11	19.21	-0.10	-0.52
		2	An employee who decided to enroll in school	80.89	80.79	0.10	0.12
B3EMPSTAT	Employment status considering current job, as of the B&B:08/18 interview	1	Employed full-time	74.52	74.54	-0.03	-0.04
		2	Employed part-time	13.10	13.06	0.04	0.29
		3	Out of the labor force	6.62	6.60	0.02	0.24
		4	Unemployed	5.76	5.79	-0.03	-0.47
B3ENGL	English is native language, as of B&B:08/18 interview	0	English is not native language	8.24	8.07	0.17*	2.12
		1	English is native language	91.76	91.93	-0.17*	-0.19

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3EVEREMP	Ever employed since bachelor's degree award date as of 2018	0	Not employed since bachelor's degree	0.51	0.54	-0.04*	-6.86
		1	Employed since bachelor's degree	99.49	99.46	0.04*	0.04
B3EVREMPAID	Ever received employer assistance for postbaccalaureate degree, self-reported as of 2018	0	No	68.38	68.45	-0.07	-0.10
		1	Yes	31.62	31.55	0.07	0.21
B3EVRENRLFP	Ever enrolled at private for-profit institution since bachelor's degree completion	0	Never enrolled at private for-profit institution	88.80	88.07	0.73*	0.83
		1	Enrolled at private for-profit institution	11.20	11.93	-0.73*	-6.11
B3EVRFELSHIP	Ever received assistantships or fellowships for post-BA degree, as of B&B:08/18 interview	0	No	76.71	72.24	4.47*	6.19
		1	Yes	23.29	27.76	-4.47*	-16.11
B3EVRGRANT	Ever received grants or scholarships for postbaccalaureate degree, self-reported as of 2018	0	No	55.19	51.90	3.28*	6.32
		1	Yes	44.81	48.10	-3.28*	-6.82
B3EVRPRIVDEF	Ever defaulted on private student loans, self-reported as of 2018	0	No, did not default on private loan(s)	83.63	84.50	-0.87	-1.03
		1	Yes, defaulted on private loan(s)	16.37	15.50	0.87	5.62
B3EVRPRIVPIF	Ever had at least one private student loan paid in full, self-reported as of 2018	0	No private loans paid in full	66.39	67.25	-0.86	-1.27
		1	At least one private loan paid in full	33.61	32.75	0.86	2.61
B3EVRTCH	Taught at K-12 level between BA completion and B&B:08/18 interview	0	No	77.83	79.13	-1.30*	-1.65
		1	Yes	22.17	20.87	1.30*	6.24
B3FEDPAYMISS	Missed a federal student loan payment within 12 months, self-reported in 2018	0	All payments were made on time	85.97	85.71	0.27	0.31
		1	Yes, missed 1 to 2 payments	10.21	10.38	-0.18	-1.70
		2	Yes, missed 3 or more payments	3.82	3.91	-0.09	-2.27

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3FEDPAYMORE	Made federal student loan prepayment within 12 months, self-reported in 2018	0	No, have not paid more than the minimum amount	67.59	66.80	0.80	1.19
		1	Yes, paid more than the minimum amount 1 or 2 times	11.61	11.44	0.17	1.49
		2	Yes, paid more than the minimum amount 3 or more times	20.80	21.76	-0.97	-4.44
B3FEDPAYPLAN_ALT	Currently enrolled in alternative repayment plan on at least one federal student loan in 2018	0	No, not currently in alternative repayment plan	29.79	40.08	-10.30*	-25.69
		1	Yes, currently in alternative repayment plan	2.79	4.00	-1.21*	-30.35
		2	Not in repayment	67.43	55.92	11.51*	20.58
B3FEDPAYPLAN_GRD	Currently enrolled in graduated repayment plan on at least one federal student loan in 2018	0	No, not currently in graduated repayment plan	27.25	37.03	-9.77*	-26.39
		1	Yes, currently in graduated repayment plan	5.60	7.06	-1.46*	-20.70
		2	Not in repayment	67.15	55.92	11.23*	20.09
B3FEDPAYPLAN_INC	Currently enrolled in income-based repayment plan on at least one federal student loan in 2018	0	No, not currently in income-based repayment plan	17.10	22.10	-5.00*	-22.64
		1	Yes, currently in income-based repayment plan	17.36	21.98	-4.62*	-21.01
		2	Not in repayment	65.54	55.92	9.62*	17.21
B3FEDPAYPLAN_STND	Currently enrolled in standard repayment plan on at least one federal student loan in 2018	0	No, not currently in standard repayment plan	20.36	27.08	-6.73*	-24.83
		1	Yes, currently in standard repayment plan	13.72	17.00	-3.28*	-19.28
		2	Not in repayment	65.92	55.92	10.00*	17.89

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3GENDER	Gender identity, as of B&B:08/18 interview	1	Male	42.23	42.16	0.07	0.16
		2	Female	57.08	57.16	-0.08	-0.14
		3	Transgender, male-to-female	0.08	0.08	0.00	1.85
		4	Transgender, female-to-male	0.03	0.03	0.00	1.85
		5	Genderqueer or gender nonconforming	0.19	0.19	0.00*	1.85
		6	A different gender identity	0.11	0.11	0.00*	1.85
		7	More than one gender identity selected	0.28	0.27	0.01*	1.85
B3HICINT	Highest degree completed between BA completion and B&B:08/18 interview: Enrollment intensity	1	Full time	63.86	63.51	0.34	0.54
		2	Part time	22.04	22.41	-0.36	-1.63
		3	Mix of full time and part time	14.10	14.08	0.02	0.16
B3HOTH	Household composition, as of B&B:08/18 interview: Living with others	0	Do not live with others	92.73	92.60	0.13	0.14
		1	Live with others	7.27	7.40	-0.13	-1.75
B3HOUSE	Housing Status, as of B&B:08/18 interview	0	Neither own home nor pay rent	6.41	6.34	0.07	1.17
		1	Own home(s) (outright or pay mortgage)	61.47	61.59	-0.12	-0.20
		2	Pay rent	31.05	30.98	0.07	0.23
		3	Both own home(s) and pay rent	1.07	1.09	-0.02	-1.84
B3HRDSHP	Financial cost of degree posed hardship	0	No, financial cost of degree didn't pose hardship	47.17	45.16	2.01*	4.45
		1	Yes, financial cost of degree posed hardship	52.83	54.84	-2.01*	-3.67
B3HSTYPE	Type of high school attended, as of B&B:08/18 interview	1	Public	83.07	83.03	0.03	0.04
		2	Private	13.26	13.23	0.02	0.17
		3	Graduated from a foreign high school	2.43	2.45	-0.02	-0.86
		4	Home schooled	0.73	0.78	-0.05	-5.83
		5	Received a GED certificate	0.52	0.51	0.01*	2.40
B3IDRAWARE	Ever heard of income-driven repayment (IDR) plans, as of 2018	0	Had not heard of income-driven repayment (IDR) plans	43.95	42.11	1.84	4.36
		1	Yes, heard of income-driven repayment (IDR) plans	56.05	57.89	-1.84	-3.17

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3FINWHO	Adult in household who shares financial responsibilities, as of B&B:08/18 interview	0	Does not share financial responsibilities	22.65	25.07	-2.41*	-9.63
		1	Domestic partner or spouse	69.02	65.74	3.28*	4.99
		2	Boyfriend or girlfriend	5.18	5.75	-0.57*	-9.87
		3	Parent	1.80	1.92	-0.12	-6.27
		4	Sibling	0.36	0.45	-0.09	-20.38
		5	Friend or roommate	0.75	0.80	-0.04	-5.47
		6	Other	0.24	0.28	-0.04	-14.26
B3IDRNOENRINELIG	Currently not enrolled in income-driven repayment (IDR) programs, assumed ineligible, as of 2018	0	Thought I was eligible for an IDR plan	71.65	73.50	-1.85	-2.52
		1	Did not think I was eligible for an IDR plan	28.35	26.50	1.85	6.98
B3IDRNOENROTHR	Currently not enrolled in income-driven repayment (IDR) programs, other reason, as of 2018	0	No other reason not enrolled in an IDR plan	70.31	71.56	-1.25	-1.75
		1	Other reason not enrolled in an IDR plan	29.69	28.44	1.25	4.39
B3IDRNOENRPAY	Currently not enrolled in income-driven repayment (IDR) programs, did not need lower monthly payments, as of 2018	0	Needed lower monthly loan payments	67.79	64.89	2.89	4.46
		1	Did not need lower monthly loan payments	32.21	35.11	-2.89	-8.24
B3IDRNOENRTERMS	Currently not enrolled in income-driven repayment (IDR) programs, did not like terms of these plans, as of 2018	0	Liked the terms of IDR plans	79.01	78.91	0.10	0.13
		1	Did not like the terms of IDR plans	20.99	21.09	-0.10	-0.47
B3IDRNOENRTIME	Currently not enrolled in income-driven repayment (IDR) programs, too much time or effort, as of 2018	0	Did not think applying would take too much time/effort	93.60	94.33	-0.73	-0.78
		1	Thought applying would take too much time/effort	6.40	5.67	0.73	12.95
B3INCHO	Satisfaction with quality of education at BA institution, as of B&B:08/18 interview	0	Not satisfied	8.51	8.37	0.14	1.70
		1	Satisfied	91.49	91.63	-0.14	-0.16

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3LGBTQ	Sexual orientation, as of B&B:08/18 interview	1	Lesbian or gay, that is, homosexual	2.49	2.49	0.00	0.11
		2	Straight, that is, heterosexual	94.06	94.05	0.01	0.01
		3	Bisexual	2.27	2.25	0.02	0.86
		4	Another sexual orientation	0.70	0.73	-0.03	-4.01
		5	Don't know	0.48	0.48	0.00	0.36
B3MAJCHO	Satisfaction with undergraduate major choice, as of B&B:08/18 interview	0	Not satisfied	21.39	21.13	0.26	1.25
		1	Satisfied	78.61	78.87	-0.26	-0.33
B3MARR	Marital status, as of B&B:08/18 interview	1	Single, never married	29.48	29.56	-0.08	-0.26
		2	Married	62.32	62.21	0.10	0.17
		3	Separated	1.24	1.26	-0.02	-1.57
		4	Divorced	6.48	6.50	-0.02	-0.24
		5	Widowed	0.48	0.47	0.01*	1.46
B3MOMED	Mother's highest education level, as of B&B:08/18 interview	0	Don't know	1.12	1.73	-0.60*	-35.00
		1	Did not complete high school	5.98	5.99	0.00	-0.03
		2	High school diploma or equivalent	23.53	24.91	-1.38*	-5.55
		3	Vocational/technical training	5.15	5.07	0.09	1.73
		4	Some college but no degree	12.70	12.64	0.07	0.53
		5	Associate's degree	9.85	9.60	0.25	2.60
		6	Bachelor's degree	24.98	24.06	0.92*	3.81
		7	Master's degree or equivalent	12.44	11.76	0.68*	5.82
		8	Professional degree	2.39	2.43	-0.05	-2.02
B3NDGCWK	Enrolled in non-degree coursework since bachelor's degree completion	9	Doctoral degree	1.85	1.82	0.03	1.79
		0	Did not enroll in non-degree coursework since completing bachelor's degree	77.37	78.37	-1.00*	-1.28
		1	Enrolled in non-degree coursework since completing bachelor's degree	22.63	21.63	1.00*	4.64
B3NEGOT	Ever negotiated salary/benefits as of 2018	0	Did not negotiate salary/benefits	51.98	52.16	-0.18	-0.34
		1	Negotiated salary/benefits	48.02	47.84	0.18	0.37
B3PARIL	Household composition, as of B&B:08/18 interview: Living with parents or in-laws	0	Do not live with parents or in-laws	93.28	93.30	-0.03	-0.03
		1	Live with parents or in-laws	6.72	6.70	0.03	0.39

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3PRIVDEFCUR	Currently in default on at least one private student loan, self-reported in 2018	0	Not in default on any private loans	94.83	94.75	0.08	0.09
		1	Currently in default on at least one private loan	5.17	5.25	-0.08	-1.56
B3PRIVDFRCUR	Currently deferring at least one private student loan, self-reported in 2018	0	Not currently deferring any private loans	87.09	86.29	0.80	0.92
		1	Currently deferring at least one private loan	12.91	13.71	-0.80	-5.81
B3PRIVLN	Ever received a private student loan, self-reported as of 2018	0	No	67.76	67.98	-0.22	-0.32
		1	Yes	32.24	32.02	0.22	0.68
B3PRIVPAYMISS	Ever missed a private student loan payment, self-reported as of 2018	0	All payments were made on time	84.69	84.83	-0.14	-0.17
		1	Yes, missed 1 to 2 payments	10.88	10.94	-0.06	-0.56
		2	Yes, missed 3 or more payments	4.43	4.22	0.20	4.84
B3PRIVPAYMORE	Made private student loan prepayment within 12 months, self-reported in 2018	0	No, have not paid more than the minimum amount	58.60	58.76	-0.16	-0.27
		1	Yes, paid more than the minimum 1 or 2 times	13.87	12.51	1.36	10.88
		2	Yes, paid more than the minimum 3 or more times	27.54	28.74	-1.20	-4.18
B3PRIVRPMTCUR	Currently in repayment on at least one private student loan, self-reported in 2018	0	Not in repayment on any private loans	44.66	44.42	0.24	0.55
		1	In repayment on at least one private loan	55.34	55.58	-0.24	-0.44
B3REGTCH18	Worked as a regular classroom teacher between B&B:08/12 interview and B&B:08/18 interview, as of B&B:08/18 interview	0	No	89.58	89.48	0.10*	0.11
		1	Yes	10.42	10.52	-0.10*	-0.95
B3RETEMP	Had an employer-based retirement account, as of B&B:08/18 interview	0	Did not have an employer-based retirement account	24.11	24.66	-0.55*	-2.23
		1	Had an employer-based retirement account	75.89	75.34	0.55*	0.73

See notes at end of table.

**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3RETNON	Had a non-employer-based retirement account, as of B&B:08/18 interview	0	Did not have a non-employer-based retirement account	47.94	48.25	-0.31	-0.65
		1	Had a non-employer-based retirement account	52.06	51.75	0.31	0.60
B3SELLPO	Result of sale of all major possessions, as of B&B:08/18 interview	1	Have something left over	69.63	69.47	0.16	0.23
		2	Break even	10.45	10.39	0.05	0.53
		3	Be in debt	19.92	20.13	-0.21	-1.06
B3SEX	Sex assigned at birth, as of B&B:08/18 interview	1	Male	42.57	42.56	0.01	0.03
		2	Female	57.43	57.44	-0.01	-0.02
B3SPCOL	Spouse or domestic partner attended college or graduate school in 2018-19, as of B&B:08/18 interview	0	Spouse did not attend college	93.13	93.17	-0.04	-0.05
		1	Attended college full time	2.55	2.60	-0.05	-1.96
		2	Attended college part time	4.33	4.23	0.09	2.22
B3SEMP	Spouse or domestic partner employed in 2017	0	No	11.34	11.34	0.00	-0.04
		1	Yes	88.66	88.66	0.00	0.00
B3SPLV	Highest education attained by spouse or domestic partner, as of B&B:08/18 interview	1	Did not complete high school	1.31	1.27	0.04	3.45
		2	High school diploma or equivalent	9.27	9.08	0.19	2.06
		3	Vocational or technical training	4.63	4.73	-0.10	-2.12
		4	Less than 2 years of college	5.14	5.13	0.01	0.24
		5	Associate's degree	6.84	7.06	-0.22	-3.08
		6	2 or more years of college but no degree	3.26	3.24	0.02	0.65
		7	Bachelor's degree	40.98	40.89	0.08	0.20
		8	Graduate degree	28.58	28.61	-0.03	-0.11
B3SPODP	Household composition, as of B&B:08/18 interview: Living with spouse or domestic partner	0	Not living with spouse or domestic partner	31.09	31.73	-0.64*	-2.01
		1	Living with spouse or domestic partner	68.91	68.27	0.64*	0.93
B3SPOWE	Spouse or domestic partner's loan amount owed, as of B&B:08/18 interview	1	All	11.03	11.17	-0.14	-1.28
		2	Some	46.81	46.83	-0.02	-0.04
		3	None	42.16	42.00	0.16	0.39

See notes at end of table.



**Table I-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTG000: 2018—Continued**

Variable name	Variable label	Value	Value label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B3STRESS	Financial difficulty in past 12 months, as of B&B:08/18 interview	0	No	86.52	86.45	0.07	0.08
		1	Yes	13.48	13.55	-0.07	-0.51
B3USBORN	Born in the U.S., as of B&B:08/18 interview	0	Not born in the U.S. or a U.S. territory	9.07	9.13	-0.05	-0.59
		1	Born in the U.S. or a U.S. territory	90.93	90.87	0.05	0.06
B3VOTEREG	Registered to vote, as of B&B:08/18 interview	0	No	5.10	5.13	-0.03	-0.66
		1	Yes	94.90	94.87	0.03	0.04
B3VTNEL	Voted in 2016 presidential election, as of B&B:08/18 interview	0	No	16.56	16.77	-0.21	-1.23
		1	Yes	83.44	83.23	0.21	0.25
B3WORTHUG	Undergraduate education was worth the financial cost, as of B&B:08/18 interview	0	No	30.59	30.49	0.09	0.31
		1	Yes	69.41	69.51	-0.09	-0.14
B3WORTHG	Graduate education was worth the financial cost, as of B&B:08/18 interview	0	No	34.57	34.52	0.06	0.16
		1	Yes	65.43	65.48	-0.06	-0.08

\*  $p < .05$ .

NOTE: BA = bachelor's degree. Distributions were computed using analysis weight WTG000 (B&B:08/18 response). Cases with legitimate skips for the item are not included in the distributions. The difference is computed as the percentage before imputation minus the percentage after imputation. The percent relative difference is computed as the difference divided by the percentage after imputation and then multiplied by 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Appendix J. Analysis Variables

**Table J-1. Analysis variables: 2018**

Variable name	Subject	Variable label
ID	Survey sample	Analysis ID
B3AGE	Demographic characteristics	Age, as of December 31, 2018
B3USBORN	Demographic characteristics	Born in the U.S.
B3CITZN	Demographic characteristics	Citizenship status, as of B&B:08/18 interview
B3GENDER	Demographic characteristics	Gender identity, as of B&B:08/18 interview
B3GENMIN	Demographic characteristics	Gender minority status, as of B&B:08/18 interview
B3SEX	Demographic characteristics	Sex assigned at birth
B3LGBTQ	Demographic characteristics	Sexual orientation and gender identity, as of B&B:08/18 interview
B3INC18	Employment: Current	Annualized total salary for all current jobs, as of B&B:08/18 interview
B3CJSAL	Employment: Current	Current job, as of B&B:08/18 interview: Annualized salary
B3CJBENANY	Employment: Current	Current job, as of B&B:08/18 interview: Employer offered any benefits
B3CJSTCDE	Employment: Current	Current job, as of B&B:08/18 interview: Employer state
B3CJZIP	Employment: Current	Current job, as of B&B:08/18 interview: Employer zip code
B3CJFTPT	Employment: Current	Current job, as of B&B:08/18 interview: Full-time/part-time status
B3CJHINS	Employment: Current	Current job, as of B&B:08/18 interview: Health insurance offered
B3CJHRS	Employment: Current	Current job, as of B&B:08/18 interview: Hours worked per week
B3CJMOS	Employment: Current	Current job, as of B&B:08/18 interview: Months worked
B3CJOCC33	Employment: Current	Current job, as of B&B:08/18 interview: Occupation
B3CJOCC6	Employment: Current	Current job, as of B&B:08/18 interview: Occupation code 6-digit code
B3STEMOC18	Employment: Current	Current job, as of B&B:08/18 interview: occupation in STEM field, STEM-related field, or non-STEM field
B3CJCURL	Employment: Current	Current job, as of B&B:08/18 interview: Part of a career
B3CJNSFA	Employment: Current	Current job, as of B&B:08/18 interview: Requires a BA or higher
B3CJBEN	Employment: Current	Current job, as of B&B:08/18 interview: Satisfaction with benefits
B3CJCHAL	Employment: Current	Current job, as of B&B:08/18 interview: Satisfaction with challenge of work
B3CJPAY	Employment: Current	Current job, as of B&B:08/18 interview: Satisfaction with compensation
B3CJIMP	Employment: Current	Current job, as of B&B:08/18 interview: Satisfaction with importance of work
B3CJSEC	Employment: Current	Current job, as of B&B:08/18 interview: Satisfaction with job security
B3CJBAL	Employment: Current	Current job, as of B&B:08/18 interview: Satisfaction with work-life balance
B3CJEMPLF	Employment: Current	Current job, as of B&B:08/18 interview: Self-employed
B3CJSDAT	Employment: Current	Current job, as of B&B:08/18 interview: Start date
B3CJEMPFPT	Employment: Current	Current job, as of B&B:08/18 interview: Starting job status
B3CJSTEMOCC	Employment: Current	Current job, as of B&B:08/18 interview: STEM occupation
B3CJSUP	Employment: Current	Current job, as of B&B:08/18 interview: Supervises others
B3SMSTE	Employment: Current	Current job, as of B&B:08/18 interview: Worked in same state as BA institution
B3SMSTER	Employment: Current	Current job, residence, and BA degree institution in same state, as of B&B:08/18 interview
B3DISTINSTE	Employment: Current	Distance (in miles) between current job and BA degree institution, as of B&B:08/18 interview
B3YRSCCAR	Employment: Current	Years in current career, as of B&B:08/18 interview
B3EEHIST	Employment: History	Employment and enrollment history, as of B&B:08/18 interview
B3NEGOT	Employment: History	Ever negotiated salary/benefits, as of B&B:08/18 interview
B3EMPSTAT_MONTHS	Employment: History	Monthly employment status between BA completion and B&B:08/18 interview
B3MEMP	Employment: History	Months employed between BA completion and B&B:08/18 interview
B3MOLF	Employment: History	Months out of the labor force between BA completion and B&B:08/18 interview

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3MUNEM	Employment: History	Months unemployed between BA completion and B&B:08/18 interview
B3JBNUM	Employment: History	Number of jobs between BA completion and B&B:08/18 interview
B3TOTEMP	Employment: History	Number of unique employers between BA completion and B&B:08/18 interview
B3PCEMP	Employment: History	Percent of time employed between BA completion and B&B:08/18 interview
B3PCOLF	Employment: History	Percent of time out of the labor force between BA completion and B&B:08/18 interview
B3PCUNEM	Employment: History	Percent of time unemployed between BA completion and B&B:08/18 interview
B3DEMPDIS	Employment: Not working	Reason not working for pay, as of B&B:08/18 interview: Disabled
B3DEMPHM	Employment: Not working	Reason not working for pay, as of B&B:08/18 interview: Homemaker
B3DEMPTRV	Employment: Not working	Reason not working for pay, as of B&B:08/18 interview: Traveling
B3DEMPVOL	Employment: Not working	Reason not working for pay, as of B&B:08/18 interview: Volunteering or unpaid internship
B3DEMPTMP	Employment: Not working	Reason not working for pay, as of B&B:08/18 interview: Waiting to report to work or layoff
B3LKWRK	Employment: Search	Looked for work since B&B:08/12 interview
B3DSEARCH	Employment: Search	Looking for a job, as of B&B:08/18 interview
B3CLICENSE	Employment: Status	Active industry certification or occupational license, as of B&B:08/18 interview
B3LFP18	Employment: Status	Employment and enrollment status, as of B&B:08/18 interview
B3EMPSTAT18	Employment: Status	Employment status considering all current jobs, as of the B&B:08/18 interview
B3EMPSTAT	Employment: Status	Employment status considering current job, as of the B&B:08/18 interview
B3EVEREMP	Employment: Status	Ever employed since BA degree, as of B&B:08/18 interview
B3ALLHRS	Employment: Status	Hours worked per week in all jobs, as of B&B:08/18 interview
B3DWRKS	Employment: Status	Primarily student or employee while enrolled, as of B&B:08/18 interview
B3ACCEPT	Employment: Workplace Environment	Employer acceptance of LGBT employees, as of B&B:08/18 interview
B3DISCRETH	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Ethnicity
B3DISGEN	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Gender identity
B3DISNATION	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Nationality
B3DISCRIM	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Overall
B3DISREL	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Religion
B3DISSEX	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Sex
B3DISLGBTQ	Employment: Workplace Environment	Employment discrimination, as of B&B:08/18 interview: Sexual orientation
B3DEPAGEHIGH	Family	Age of oldest dependent child, as of B&B:08/18 interview
B3DEPAGELOW	Family	Age of youngest dependent child, as of B&B:08/18 interview
B3MARRDATE	Family	Date of most recent change in marital status, as of B&B:08/18 interview
B3MARCHB	Family	Family status (all dependents), as of B&B:08/18 interview
B3MARCHA	Family	Family status (child dependents only), as of B&B:08/18 interview
B3DADED	Family	Father's highest education level, as of B&B:08/18 interview
B3PAREDUC	Family	Highest education attained by either parent
B3SPLV	Family	Highest education attained by spouse or domestic partner, as of B&B:08/18 interview

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3DPNTS	Family	Household composition, as of B&B:08/18 interview: Living with children or dependents in 2018
B3HOTH	Family	Household composition, as of B&B:08/18 interview: Living with others
B3PARIL	Family	Household composition, as of B&B:08/18 interview: Living with parents or in-laws
B3SPODP	Family	Household composition, as of B&B:08/18 interview: Living with spouse or domestic partner
B3MARR	Family	Marital status, as of B&B:08/18 interview
B3BADEPCHILD	Family	Months between BA completion and first dependent child, as of B&B:08/18 interview
B3MOMED	Family	Mother's highest education level, as of B&B:08/18 interview
B3NMUN12	Family	Number of dependent children under age 12, as of B&B:08/18 interview
B3DEP2	Family	Number of dependent children, as of B&B:08/18 interview
B3NUMNCD	Family	Number of non-child dependents, as of B&B:08/18 interview
B3SPCOL	Family	Spouse or domestic partner attended college or graduate school in 2018-19, as of B&B:08/18 interview
B3SPEMP	Family	Spouse or domestic partner employed in 2017
B3INCSP	Family	Spouse or domestic partner's income in 2017
B3SPOWE	Family	Spouse or domestic partner's loan amount owed, as of B&B:08/18 interview
B3SPLNPY	Family	Spouse or domestic partner's monthly payment on student loans, as of B&B:08/18 interview
B3SPAMT	Family	Spouse or domestic partner's student loan amount borrowed, as of B&B:08/18 interview
B3LVCHLD	Family	Took child-related leave between B&B:08/12 interview and B&B:08/18 interview
B3NUMDEP	Family	Total number of dependents, as of B&B:08/18 interview
B3FINWHO	Finances	Adult in household who shares financial responsibilities, as of B&B:08/18 interview
B3RETADD	Finances	Contributed to retirement account in past 12 months, as of B&B:08/18 interview
B3CRDBAL	Finances	Credit card balance, as of B&B:08/18 interview
B3CREDCRD	Finances	Credit card status, as of B&B:08/18 interview
B3STRESS	Finances	Did not meet essential expenses in past 12 months, as of B&B:08/18 interview
B3INCOM	Finances	Gross income in 2017
B3RETNON	Finances	Had a non-employer-based retirement account, as of B&B:08/18 interview
B3RETEMP	Finances	Had an employer-based retirement account, as of B&B:08/18 interview
B3RETIRE	Finances	Had retirement account, as of B&B:08/18 interview
B3HOUSE	Finances	Housing status, as of B&B:08/18 interview
B3CSTDYCR	Finances	Monthly daycare costs, as of B&B:08/18 interview
B3SELLPO	Finances	Result of sale of all major possessions, as of B&B:08/18 interview
B3HOMOWE	Finances: Expenses	Amount owed on mortgage for primary residence, as of B&B:08/18 interview
B3CARAMT	Finances: Expenses	Monthly car payment amount, as of B&B:08/18 interview
B3MTGAMT	Finances: Expenses	Monthly rent or mortgage payment, as of B&B:08/18 interview
B3HOMVAL	Finances: Expenses	Value of residence, as of B&B:08/18 interview
B3CONTEMP	Finances: Strategies	Contributed to employer-based retirement account in past 12 months, as of B&B:08/18 interview
B3CONTNON	Finances: Strategies	Contributed to non-employer-based retirement account in past 12 months, as of B&B:08/18 interview
B3FEDCUM2	Financial aid: Borrowed cumulative	Cumulative amount borrowed for graduate education in federal student loans

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3PBAFEDCUM2	Financial aid: Borrowed cumulative	Cumulative amount borrowed for graduate education in federal student loans since BA completion
B3BAFEDCUM2	Financial aid: Borrowed cumulative	Cumulative amount borrowed for graduate education in federal student loans, as of BA completion
B3FEDCUM1	Financial aid: Borrowed cumulative	Cumulative amount borrowed for undergraduate education in federal student loans
B3PBAFEDCUM1	Financial aid: Borrowed cumulative	Cumulative amount borrowed for undergraduate education in federal student loans since BA completion
B3BAFEDCUM1	Financial aid: Borrowed cumulative	Cumulative amount borrowed for undergraduate education in federal student loans, as of BA completion
B3BORCUM	Financial aid: Borrowed cumulative	Cumulative amount borrowed in federal and private student loans
B3FEDCUM3	Financial aid: Borrowed cumulative	Cumulative amount borrowed in federal student loans
B3PBAFEDCUM3	Financial aid: Borrowed cumulative	Cumulative amount borrowed in federal student loans since BA completion
B3BAFEDCUM3	Financial aid: Borrowed cumulative	Cumulative amount borrowed in federal student loans, as of BA completion
B3GPLUCUM	Financial aid: Borrowed cumulative	Cumulative amount borrowed in graduate PLUS Loans
B3PRIVCUM	Financial aid: Borrowed cumulative	Cumulative amount borrowed in private student loans, as of B&B:08/18 interview
B3FEDCNSCUM	Financial aid: Borrowed cumulative	Cumulative amount of federal student loans consolidated
B3TOTFEDOWE3	Financial aid: Debt and repayment	Amount owed on federal student loans
B3FEDOWEPCT	Financial aid: Debt and repayment	Amount owed on federal student loans as percent of federal student loan amount borrowed
B3FEDOWEDEF CUR	Financial aid: Debt and repayment	Amount owed on federal student loans currently in default
B3FEDOWENDEF CUR	Financial aid: Debt and repayment	Amount owed on federal student loans currently in good standing
B3FEDOWEDEF	Financial aid: Debt and repayment	Amount owed on federal student loans ever in default
B3TOTFEDOWE2	Financial aid: Debt and repayment	Amount owed on federal student loans for graduate education
B3FEDOWEPRIN2	Financial aid: Debt and repayment	Amount owed on federal student loans for graduate education in principal
B3TOTFEDOWE1	Financial aid: Debt and repayment	Amount owed on federal student loans for undergraduate education
B3FEDOWEPRIN1	Financial aid: Debt and repayment	Amount owed on federal student loans for undergraduate education in principal
B3FEDOWEPRIN3	Financial aid: Debt and repayment	Amount owed on federal student loans in principal
B3FEDOWENDEF	Financial aid: Debt and repayment	Amount owed on federal student loans never in default
B3FEDDFRECON	Financial aid: Debt and repayment	Cumulative number of deferments for economic difficulty on federal student loans
B3FEDDFRFAM	Financial aid: Debt and repayment	Cumulative number of deferments for family or disability on federal student loans
B3FEDDFRGOV	Financial aid: Debt and repayment	Cumulative number of deferments for government program on federal student loans
B3FEDDFRMIL	Financial aid: Debt and repayment	Cumulative number of deferments for military or law enforcement on federal student loans
B3FEDDFREN R	Financial aid: Debt and repayment	Cumulative number of deferments for student enrollment on federal student loans
B3FEDDFRTEA	Financial aid: Debt and repayment	Cumulative number of deferments for teacher profession on federal student loans
B3FEDDFRNUM	Financial aid: Debt and repayment	Cumulative number of deferments on federal student loans

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3NUMFEDFB	Financial aid: Debt and repayment	Cumulative number of forbearances on federal student loans
B3FEDPAY	Financial aid: Debt and repayment	Current monthly payment on federal student loans
B3FEDPAYPCT	Financial aid: Debt and repayment	Current monthly payment on federal student loans as percent of earnings
B3PRIVPAYPCT	Financial aid: Debt and repayment	Current monthly payment on private student loans as percent of earnings, as of the B&B:08/18 interview
B3PRIVPAY	Financial aid: Debt and repayment	Current monthly payment on private student loans, as of B&B:08/18 interview
B3LNPAY	Financial aid: Debt and repayment	Current monthly payment on student loans
B3LNPAYPCT	Financial aid: Debt and repayment	Current monthly payment on student loans as percent of earnings
B3DFRFEDPAY	Financial aid: Debt and repayment	Current monthly payment postponed for federal student loans
B3FEDPAYSTAT	Financial aid: Debt and repayment	Current owe status on federal student loans
B3FEDPAYPLAN	Financial aid: Debt and repayment	Current repayment plan for federal student loans
B3PRIVSTAT	Financial aid: Debt and repayment	Current repayment status for private student loans, as of B&B:08/18 interview
B3PAYSTAT	Financial aid: Debt and repayment	Current repayment status for student loans
B3FEDPAYPLAN_GRD	Financial aid: Debt and repayment	Currently enrolled in a graduated repayment plan for federal student loans
B3FEDPAYPLAN_STND	Financial aid: Debt and repayment	Currently enrolled in a standard repayment plan for federal student loans
B3FEDPAYPLAN_ALT	Financial aid: Debt and repayment	Currently enrolled in an alternative repayment plan for federal student loans
B3FEDPAYPLAN_INC	Financial aid: Debt and repayment	Currently enrolled in an IDR plan for federal student loans
B3FEDDEFECUR	Financial aid: Debt and repayment	Currently in default on federal student loans
B3PRIVDEFECUR	Financial aid: Debt and repayment	Currently in default on private student loans, as of B&B:08/18 interview
B3FEDDFRCUR	Financial aid: Debt and repayment	Currently in deferment on federal student loans
B3PRIVDFRCUR	Financial aid: Debt and repayment	Currently in deferment on private student loans, as of B&B:08/18 interview
B3FEDRPMTCUR	Financial aid: Debt and repayment	Currently in repayment on federal student loans
B3PRIVRPMTCUR	Financial aid: Debt and repayment	Currently in repayment on private student loans, as of B&B:08/18 interview
B3RPMTCUR	Financial aid: Debt and repayment	Currently in repayment on student loans
B3IDRNOENRINELIG	Financial aid: Debt and repayment	Currently not enrolled in IDR plan, as of B&B:08/18 interview: Eligibility
B3IDRNOENROTHR	Financial aid: Debt and repayment	Currently not enrolled in IDR plan, as of B&B:08/18 interview: Other
B3IDRNOENRPAY	Financial aid: Debt and repayment	Currently not enrolled in IDR plan, as of B&B:08/18 interview: Payments
B3IDRNOENRTERMS	Financial aid: Debt and repayment	Currently not enrolled in IDR plan, as of B&B:08/18 interview: Terms
B3IDRNOENRTIME	Financial aid: Debt and repayment	Currently not enrolled in IDR plan, as of B&B:08/18 interview: Time
B3FFEDDEFDT	Financial aid: Debt and repayment	Date of first default on federal student loans

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3LFEDDEFDT	Financial aid: Debt and repayment	Date of latest default on federal student loans
B3LFEDFBDT	Financial aid: Debt and repayment	Date of latest forbearance on federal student loans
B3LFEDPIFDT	Financial aid: Debt and repayment	Date paid off all nondischarged federal student loans
B3AFFHOME	Financial aid: Debt and repayment	Education cost, as of B&B:08/18 interview: Delayed buying a home
B3AFFMARR	Financial aid: Debt and repayment	Education cost, as of B&B:08/18 interview: Delayed getting married
B3AFFCHLD	Financial aid: Debt and repayment	Education cost, as of B&B:08/18 interview: Delayed having children
B3AFFEDJB	Financial aid: Debt and repayment	Education cost, as of B&B:08/18 interview: Took job instead of enrolling
B3AFFLESS	Financial aid: Debt and repayment	Education cost, as of B&B:08/18 interview: Took job outside field of study
B3AFFWKMR	Financial aid: Debt and repayment	Education cost, as of B&B:08/18 interview: Worked more than desired
B3EVRFEDCNSDEF	Financial aid: Debt and repayment	Ever consolidated defaulted federal student loans
B3EVRFEDCNS	Financial aid: Debt and repayment	Ever consolidated federal student loans
B3EVRFEDCNSNDEF	Financial aid: Debt and repayment	Ever consolidated nondefaulted federal student loans
B3EVRFEDDEF	Financial aid: Debt and repayment	Ever defaulted on federal student loans
B3EVRPRIVDEF	Financial aid: Debt and repayment	Ever defaulted on private student loans, as of B&B:08/18 interview
B3EVRDEF	Financial aid: Debt and repayment	Ever defaulted on student loans
B3EVRFEDDFR	Financial aid: Debt and repayment	Ever deferred federal student loan payments
B3EVRFEDDFRFB	Financial aid: Debt and repayment	Ever deferred or had a forbearance on federal student loan payments
B3EVRFEDFB	Financial aid: Debt and repayment	Ever had a forbearance on federal student loan payments
B3EVRFEDDCHG	Financial aid: Debt and repayment	Ever had any balance discharged on federal student loans
B3FEDRPMTDIF	Financial aid: Debt and repayment	Ever had repayment difficulty on federal student loans
B3IDRAWARE	Financial aid: Debt and repayment	Ever heard of IDR plans, as of B&B:08/18 interview
B3EVRFEDPIFDEF	Financial aid: Debt and repayment	Ever paid off a defaulted federal student loan
B3EVRFEDPIF	Financial aid: Debt and repayment	Ever paid off a federal student loan
B3EVRFEDPIFNDEF	Financial aid: Debt and repayment	Ever paid off a nondefaulted federal student loan
B3EVRPRIVPIF	Financial aid: Debt and repayment	Ever paid off a private student loan, as of B&B:08/18 interview
B3PRIVLN	Financial aid: Debt and repayment	Ever received private student loans, as of B&B:08/18 interview
B3EVRFEDREHAB	Financial aid: Debt and repayment	Ever rehabilitated a defaulted federal student loan
B3HRDSHP	Financial aid: Debt and repayment	Financial cost of degree posed hardship, as of B&B:08/18 interview
B3FEDPAYMORE	Financial aid: Debt and repayment	Made prepayment on federal student loan in 12 months before the B&B:08/18 interview
B3PRIVPAYMORE	Financial aid: Debt and repayment	Made prepayment on private student loan in 12 months before the B&B:08/18 interview

See notes at end of table.



**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3FEDPAYMISS	Financial aid: Debt and repayment	Missed payment on a federal student loan in 12 months before the B&B:08/18 interview
B3PRIVPAYMISS	Financial aid: Debt and repayment	Missed payment on a private student loan in 12 months before the B&B:08/18 interview
B3FEDPIF	Financial aid: Debt and repayment	Paid off all nondischarged federal student loans
B3FEDBORPCT	Financial aid: Debt and repayment	Ratio of cumulative amount borrowed in federal student loans to annual salary
B3FEDDFRREAS	Financial aid: Debt and repayment	Reason for most frequently-granted deferment on federal student loans
B3FFEDDEFYRS	Financial aid: Debt and repayment	Years between BA award date and first default for federal student loans
B3LFEDPIFYRS	Financial aid: Debt and repayment	Years between BA award date and paid off all nondischarged federal student loans
B3FFEDDEFPIFYRS	Financial aid: Debt and repayment	Years between first default and paid off all nondischarged federal student loans
B3T4FEDOWE	Financial aid: Federal loans	Amount owed on Direct/Stafford and Perkins Loans
B3PERCUM	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans
B3NUMFEDLN	Financial aid: Federal loans	Cumulative number of federal student loans received
B3NUMFEDYR3	Financial aid: Federal loans	Cumulative number of years borrowed federal student loans
B3NUMFEDYR2	Financial aid: Federal loans	Cumulative number of years borrowed graduate federal student loans
B3NUMFEDYR1	Financial aid: Federal loans	Cumulative number of years borrowed undergraduate federal student loans
B3EVRFELSHIP	Financial aid: Graduate	Ever received assistantships or fellowships for post-BA degree, as of B&B:08/18 interview
B3EVREMLAID	Financial aid: Graduate	Ever received employer assistance for post-BA degree, as of B&B:08/18 interview
B3EVRGRANT	Financial aid: Graduate	Ever received grants or scholarships for post-BA degree, as of B&B:08/18 interview
B3STFCUM	Financial aid: Stafford	Cumulative amount borrowed in Direct/Stafford Loans
B3STSCUM	Financial aid: Stafford	Cumulative amount borrowed in Direct/Stafford Subsidized Loans
B3STUCUM	Financial aid: Stafford	Cumulative amount borrowed in Direct/Stafford Unsubsidized Loans
B3DISTINSTH	High school	Distance (in miles) between high school and BA degree institution
B3SMSTH	High school	High school and BA degree institution in same state
B3HSID	High school	High school unique identifier
B3STCDH	High school	State of high school
B3HSTYPE	High school	Type of high school
B3HSZIP	High school	Zip code of high school
B3MOVE	Instruction: Undergrad	Likelihood of moving into non-teaching position, as of B&B:08/18 interview
B3INFLFIN	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Financial compensation
B3INFLCONT	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Opportunity to contribute to society
B3INFLADV	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Possibilities for career advancement
B3INFLPRES	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Prestige of occupation
B3INFLSUB	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Subject or location
B3INFLACCT	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Teacher accountability
B3INFLWKCD	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Teachers' working conditions
B3INFLKIDS	Instruction: Undergrad	Teaching influences, as of B&B:08/18 interview: Working with kids
B3ALTCRT	K-12 teaching: Entrance	Entered teaching through alternative route to certification, as of B&B:08/18 interview

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3INT01	K-12 teaching: Entrance	Teaching preparedness, as of B&B:08/18 interview: Participated in teacher internship program
B3LVDIS	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Dissatisfied with student discipline and behavior
B3LVCAR	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Dissatisfied with teaching or wanted another career
B3LVSAL	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Inadequate salary and/or benefits
B3LVSUP	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Lack of support from school leadership
B3LVPAR	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Lack of support from students' parents
B3LVADV	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Limited opportunities to advance in career
B3LVMAIN	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Main reason left teaching
B3LVOTH	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Other reasons
B3LVSTD	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Requirements for standardized testing
B3LVRES	K-12 teaching: Exiting	Reasons left teaching, as of B&B:08/18 interview: Too many non-teaching responsibilities
B3NEWTCHPOS	K-12 teaching: Exiting	Type of position held in education after leaving teaching position, as of B&B:08/18 interview
B3TCHGRT	K-12 teaching: Experiences	Aware of TEACH Grant Program, as of B&B:08/18 interview
B3LNFRGV	K-12 teaching: Experiences	Aware of teacher loan forgiveness programs, as of B&B:08/18 interview
B3CURTCH	K-12 teaching: Experiences	Currently working as a regular classroom teacher, as of B&B:08/18 interview
B3LNINCT	K-12 teaching: Experiences	Influence of loan forgiveness programs on teaching career, as of B&B:08/18 interview
B3HIGR18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: Highest grade level taught
B3LOGR18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: Lowest grade level taught
B3NMONTCH18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: Number of months worked per year
B3PRCOMM18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: School leadership communicated type of school wanted
B3PRDISCIP18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: School leadership enforced rules for student conduct
B3PRSUPP18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: School leadership supported and encouraged staff
B3UNION18	K-12 teaching: Experiences	Most recent teaching job, as of B&B:08/18 interview: Union representation
B3LNPRPT	K-12 teaching: Experiences	Participated in teacher loan forgiveness program, as of B&B:08/18 interview
B3STYSCH	K-12 teaching: Experiences	Reason stayed in teaching, as of B&B:08/18 interview: Ability to balance personal life and work
B3STYSOC	K-12 teaching: Experiences	Reason stayed in teaching, as of B&B:08/18 interview: Opportunity to contribute to society
B3STYOT	K-12 teaching: Experiences	Reason stayed in teaching, as of B&B:08/18 interview: Other reason(s)
B3STYPRE	K-12 teaching: Experiences	Reason stayed in teaching, as of B&B:08/18 interview: Prestige of occupation
B3STYREL	K-12 teaching: Experiences	Reason stayed in teaching, as of B&B:08/18 interview: Relationship with colleagues
B3STYKID	K-12 teaching: Experiences	Reason stayed in teaching, as of B&B:08/18 interview: Working with children

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3REGTCHST	K-12 teaching: Experiences	Regular classroom teacher status between BA completion and B&B:08/18 interview
B3EVRTCH	K-12 teaching: Experiences	Taught at K-12 level between BA completion and B&B:08/18 interview
B3SATADM	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Administrative support
B3SATCSZ	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Class size
B3SATRES	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Non-teaching responsibilities
B3SATADV	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Opportunities to advance in career
B3SATSATF	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: School safety
B3SATSTD	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Standardized testing requirements
B3SATDIS	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Student discipline and behavior
B3SATPAR	K-12 teaching: Experiences	Teacher satisfaction, as of B&B:08/18 interview: Support from parents
B3DSCP01	K-12 teaching: Experiences	Teaching preparedness, as of B&B:08/18 interview: Felt prepared to manage classroom
B3INVR01	K-12 teaching: Experiences	Teaching preparedness, as of B&B:08/18 interview: Felt prepared to use instructional methods
B3PARCOM01	K-12 teaching: Experiences	Teaching preparedness, as of B&B:08/18 interview: Felt prepared to work with parents and community
B3IND01	K-12 teaching: Experiences	Teaching preparedness, as of B&B:08/18 interview: Participated in teacher induction/mentor program
B3DISC01	K-12 teaching: Experiences	Teaching support, as of B&B:08/18 interview: Received help disciplining students
B3MTHD01	K-12 teaching: Experiences	Teaching support, as of B&B:08/18 interview: Received help selecting curriculum
B3CMNT01	K-12 teaching: Experiences	Teaching support, as of B&B:08/18 interview: Received help working with parents and community
B3LTSUB	K-12 teaching: Experiences	Worked as a long-term substitute teacher between BA completion and B&B:08/18 interview
B3REGTCH18	K-12 teaching: Experiences	Worked as a regular classroom teacher between B&B:08/12 interview and B&B:08/18 interview
B3REGTCH	K-12 teaching: Experiences	Worked as a regular classroom teacher between BA completion and B&B:08/18 interview
B3TEACHR	K-12 teaching: Experiences	Worked as a regular, itinerant, support, or long-term substitute teacher between BA completion and B&B:08/18 interview
B3STSUB	K-12 teaching: Experiences	Worked as a short-term substitute teacher between BA completion and B&B:08/18 interview
B3STUTCH	K-12 teaching: Experiences	Worked as a student teacher between BA completion and B&B:08/18 interview
B3SUPTCH	K-12 teaching: Experiences	Worked as a support teacher between BA completion and B&B:08/18 interview
B3TCHSID	K-12 teaching: Experiences	Worked as a teacher's aide between BA completion and B&B:08/18 interview
B3ITNTCH	K-12 teaching: Experiences	Worked as an itinerant teacher between BA completion and B&B:08/18 interview
B3OTHTCH	K-12 teaching: Experiences	Worked as another teacher type between BA completion and B&B:08/18 interview
B3CRTMID18	K-12 teaching: Qualifications	Certification level, as of B&B:08/18 interview: 6th through 8th grade
B3CRTHIGH18	K-12 teaching: Qualifications	Certification level, as of B&B:08/18 interview: 9th through 12th grade
B3CRTELEM18	K-12 teaching: Qualifications	Certification level, as of B&B:08/18 interview: K through 5th grade
B3EVRCERT	K-12 teaching: Qualifications	Certified to teach, as of B&B:08/18 interview
B3CURCRT	K-12 teaching: Qualifications	Currently certified to teach at K-12 level, as of B&B:08/18 interview
B3CRTMY	K-12 teaching: Qualifications	Date first certified to teach, as of B&B:08/18 interview

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3CART18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in arts/music
B3CELED18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in elementary education
B3CENG18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in English/language arts
B3CESL18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in ESL
B3CFLN18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in foreign languages
B3CSECED18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in general education in middle/secondary grades
B3CHPE18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in health/physical education
B3CMATH18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in mathematics/computer science
B3CSCI18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in natural sciences
B3COTH18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in other unspecified subject
B3CSOC18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in social sciences
B3CSPECED18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in special education
B3CVOC18	K-12 teaching: Qualifications	Most recent teaching job, as of B&B:08/18 interview: Certified in vocational/career/technical education
B3ART18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught arts/music
B3ELED18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught elementary education
B3ENG18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught English/language arts
B3ESL18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught ESL
B3FLN18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught foreign languages
B3SECED18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught general education in middle/secondary grades
B3HPE18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught health/physical education
B3MATH18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught mathematics/computer science
B3SCI18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught natural sciences
B3OTH18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught other subjects
B3SOC18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught social sciences
B3SPECED18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught special education
B3VOC18	K-12 teaching: Subject taught	Most recent teaching job, as of B&B:08/18 interview: Taught vocational/career/technical education
B3STEMTCHCRT	K-12 teaching: Subject taught	Taught and certified to teach STEM subject since BA completion, as of B&B:08/18 interview
B3ENGL	Language	English is native language
B3BAAT	Postbaccalaureate education	Completed additional bachelor's degree program between BA completion and B&B:08/18 interview
B3AAAT	Postbaccalaureate education	Completed associate's degree program between BA completion and B&B:08/18 interview

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3MACMP	Postbaccalaureate education	Completed master's degree program between BA completion and B&B:08/18 interview
B3PBCAT	Postbaccalaureate education	Completed postbaccalaureate certificate program between BA completion and B&B:08/18 interview
B3PMCAT	Postbaccalaureate education	Completed post-master's certificate program between BA completion and B&B:08/18 interview
B3PROAT	Postbaccalaureate education	Completed professional practice doctoral degree program between BA completion and B&B:08/18 interview
B3DOCAT	Postbaccalaureate education	Completed research doctoral degree program between BA completion and B&B:08/18 interview
B3CERAT	Postbaccalaureate education	Completed undergraduate certificate or diploma program between BA completion and B&B:08/18 interview
B3CURENRL	Postbaccalaureate education	Currently enrolled, as of B&B:08/18 interview
B3EVRENRLFP	Postbaccalaureate education	Enrolled at private for-profit institution between BA completion and B&B:08/18 interview
B3EVRGRDENR	Postbaccalaureate education	Enrolled in a graduate degree program between BA completion and B&B:08/18 interview
B3BAEV	Postbaccalaureate education	Enrolled in additional bachelor's degree program between BA completion and B&B:08/18 interview
B3ONLIN	Postbaccalaureate education	Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview
B3EVRUGENR	Postbaccalaureate education	Enrolled in an undergraduate degree program between BA completion and B&B:08/18 interview
B3PSTGRD	Postbaccalaureate education	Enrolled in any degree programs between BA completion and B&B:08/18 interview
B3AAEV	Postbaccalaureate education	Enrolled in associate's degree program between BA completion and B&B:08/18 interview
B3MSTR18	Postbaccalaureate education	Enrolled in master's degree program between BA completion and B&B:08/18 interview
B3NDGCWK	Postbaccalaureate education	Enrolled in non-degree coursework between BA completion and B&B:08/18 interview
B3PBCEV	Postbaccalaureate education	Enrolled in postbaccalaureate certificate program between BA completion and B&B:08/18 interview
B3PMCEV	Postbaccalaureate education	Enrolled in post-master's certificate program between BA completion and B&B:08/18 interview
B3PROEV	Postbaccalaureate education	Enrolled in professional practice doctoral degree program between BA completion and B&B:08/18 interview
B3DCTR18	Postbaccalaureate education	Enrolled in research doctoral degree program between BA completion and B&B:08/18 interview
B3CEREV	Postbaccalaureate education	Enrolled in undergraduate certificate or diploma program between BA completion and B&B:08/18 interview
B3WORTHG	Postbaccalaureate education	Graduate education was worth the financial cost, as of B&B:08/18 interview
B3HIDCOMP	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Completion date
B3HIDEG	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Degree type
B3HICINT	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Enrollment intensity
B3HICTYP	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Institution sector
B3HICIPEDS	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: IPEDS ID
B3HICMAJORS	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Major or field of study (10 categories)
B3HICMAJ	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Major or field of study (45 categories)

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B3HICDERMAJ	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Major or field of study (6-digit CIP code)
B3HISTMON	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Months between BA completion and start date of highest degree completed
B3HIONLIN	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Online degree program
B3HICDST	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Start date
B3HIBTMON	Postbaccalaureate education	Highest degree completed between BA completion and B&B:08/18 interview: Time to degree in months
B3TOTENRDEG	Postbaccalaureate education	Total number of degree program enrollments between BA completion and B&B:08/18 interview
B3TOTCOMPDEG	Postbaccalaureate education	Total number of degree programs completed between BA completion and B&B:08/18 interview
B3ACTDUTY	Public service participation	Military status, as of B&B:08/18 interview: Active duty
B3MILSERV	Public service participation	Military status, as of B&B:08/18 interview: Ever served in the military
B3RESVNATGD	Public service participation	Military status, as of B&B:08/18 interview: Reserves and National Guard
B3VET	Public service participation	Military status, as of B&B:08/18 interview: Veteran
B3VLNTRHRS	Public service participation	Number of hours volunteered in past 12 months, as of B&B:08/18 interview
B3VOTEREG	Public service participation	Registered to vote, as of B&B:08/18 interview
B3VLNTR	Public service participation	Volunteered in past 12 months, as of B&B:08/18 interview
B3VTNEL	Public service participation	Voted in 2016 presidential election
B3DISTINSTR	Residence	Distance (in miles) between residence and BA degree institution, as of B&B:08/18 interview
B3ALONE	Residence	Household composition, as of B&B:08/18 interview: Living alone
B3REGION	Residence	Region of residence, as of B&B:08/18 interview
B3SMSTR	Residence	Residence and BA degree institution in same state, as of B&B:08/18 interview
B3STCDR	Residence	State of residence, as of B&B:08/18 interview
B3RESZIP	Residence	Zip code of residence, as of B&B:08/18 interview
B3BAAWRDMY	Undergraduate education	BA award date
B3INCHO	Undergraduate education	Satisfaction with quality of education at BA institution, as of B&B:08/18 interview
B3MAJCHO	Undergraduate education	Satisfaction with undergraduate major choice, as of B&B:08/18 interview
B3WORTHUG	Undergraduate education	Undergraduate education was worth the financial cost, as of B&B:08/18 interview
ATTEND	Attendance: Intensity	Attendance intensity in fall
ATTNSTAT	Attendance: Intensity	Attendance pattern
ENRSTAT	Attendance: Intensity	Enrollment pattern
ATTNINST	Attendance: Intensity	Institution type and full time status
DOBY	Characteristics: Demographics	Date of birth
AGE	Demographics	Age as of 12/31/07
AGEATBA	Demographics	Age at 2007-08 bachelor's degree award date
AGEPSE	Demographics	Age at start of postsecondary education
AGEGROUP	Demographics	Age groups as of 12/31/07
B1AGE	Demographics	Age in 2009
B1DAGE	Demographics	Age of youngest dependent in 2009
B1DEPS	Demographics	Any dependents in 2009
USBORN	Demographics	Born in the U.S. (student)
CITIZEN2	Demographics	Citizenship
B1CITZN	Demographics	Citizenship status as of 2009
B2CITZN	Demographics	Citizenship status as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2DOBM	Demographics	Date of birth
DEPEND5A	Demographics	Dependency and marital status (separated is married)
DEPEND5B	Demographics	Dependency and marital status (separated is unmarried)
DEPEND	Demographics	Dependency status
DEPEND2	Demographics	Dependency status (3 categories)
DEPEND4	Demographics	Dependency status (4 categories)
DEPOL	Demographics	Dependents: Children, age of oldest
DEPYNG	Demographics	Dependents: Children, age of youngest
DEPANY	Demographics	Dependents: Has any dependents
DEPNUM	Demographics	Dependents: Has any dependents (number)
DEPCHILD	Demographics	Dependents: Has dependent children
DEPNUMCH	Demographics	Dependents: Has dependent children (number)
DEPOTHER	Demographics	Dependents: Has dependent(s) other than children
DEPTYPE	Demographics	Dependents: Types of dependents
DISABLE	Demographics	Disability: Has some type of disability
DISTYPES	Demographics	Disability: Main type of condition or impairment
DISMOBIL	Demographics	Disability: Mobility impairment
DISOTHER	Demographics	Disability: Other long lasting condition
DISSENSR	Demographics	Disability: Sensory impairment
HSIZE	Demographics	Family size (dependent & independent)
B1MARCH	Demographics	Family status in 2009
B2MARCH	Demographics	Family status in 2012
B1NSF11	Demographics	Foreign citizenship in 2009
B1FRNLNG	Demographics	Foreign language fluency in 2009
GENDER	Demographics	Gender
B1DISMOB	Demographics	Had mobility impairment in 2009
B1DISOTH	Demographics	Had other disability in 2009
B1DISSEN	Demographics	Had sensory impairment in 2009
HISPTYPE	Demographics	Hispanic type
IMMIGEN	Demographics	Immigrant generational status
IMMIGRA	Demographics	Immigrant status
RISKINDX	Demographics	Index of risk and nontraditional students
B1MAIN	Demographics	Main disability in 2009
SMARITAL	Demographics	Marital status
B1MARR	Demographics	Marital status in 2009
B2AMARR	Demographics	Marital status in 2012
B1NSF9D	Demographics	Method of U.S. citizenship as of 2009
B1DEP2	Demographics	Number of dependents in 2009
ORPHAN	Demographics	Orphan or ward of court
ZIPCODE	Demographics	Permanent/home zip code in 2007-08
RACE	Demographics	Race/ethnicity (with multiple)
RACESEX	Demographics	Race/ethnicity (with multiple) and gender
RACE2	Demographics	Race/ethnicity (with multiple) without foreign students
RACECN	Demographics	Race/ethnicity census categories
RAINDIAN	Demographics	Race: American Indian or Alaska Native
RAINDTRB	Demographics	Race: American Indian or Alaska Native recognized tribe
RAASIAN	Demographics	Race: Asian
RABLACK	Demographics	Race: Black or African American
HISPANIC	Demographics	Race: Hispanic or Latino origin
RAISLAND	Demographics	Race: Native Hawaiian or other Pacific Islander
RAOTHER	Demographics	Race: Other
RAWHITE	Demographics	Race: White
B1SINGP	Demographics	Single parent in 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
SINGLPAR	Demographics	Single parent independent students
TRIO	Demographics	TRIO program eligibility criteria
B1DCITZN	Demographics	U.S. citizenship status in 2009
ADMCON7	Education: Admissions	Admission considerations: Admission test scores
ADMCON4	Education: Admissions	Admission considerations: Completion of college preparatory program
ADMCON6	Education: Admissions	Admission considerations: Formal demonstration of competencies
ADMCON5	Education: Admissions	Admission considerations: Recommendations
ADMCON1	Education: Admissions	Admission considerations: Secondary school GPA
ADMCON2	Education: Admissions	Admission considerations: Secondary school rank
ADMCON3	Education: Admissions	Admission considerations: Secondary school record
ADMCON8	Education: Admissions	Admission considerations: TOEFL
ADMCON9	Education: Admissions	Other Test (Wonderlic, WISC III, etc.)
BAAWRDMY	Education: Attainment	Bachelor's degree award date
B2BAAT	Education: Attainment	Completed additional bachelor's degree program as of 2012
B1REQ	Education: Attainment	Completed bachelor's between July 1, 2007 and June 30, 2008
B2DOCAT	Education: Attainment	Completed doctoral degree program as of 2012
B1MACMP	Education: Attainment	Completed master's degree program as of 2009
B2MACMP	Education: Attainment	Completed master's degree program as of 2012
B2AAAT	Education: Attainment	Completed post-baccalaureate associate's degree program as of 2012
B2PBCAT	Education: Attainment	Completed post-baccalaureate certificate program after 2007-08 bachelor's degree as of 2012
B2CERAT	Education: Attainment	Completed post-baccalaureate certificate program as of 2012
B2PMCAT	Education: Attainment	Completed post-master's certificate program as of 2012
B2PROAT	Education: Attainment	Completed professional degree program as of 2012
B1AWRDMY	Education: Attainment	Date awarded bachelor's degree from NPSAS
B1PSDMY	Education: Attainment	Date of first post-baccalaureate completion as of 2009
PSE_DATE	Education: Attainment	Date of first postsecondary enrollment
B1DEGREE	Education: Attainment	Degree during last term of enrollment at NPSAS in 2007-08 academic year
B1NPDEG	Education: Attainment	Earned certificate or associate's at bachelor's institution before 2007-08 bachelor's, as of 2009
H1OTHDEG	Education: Attainment	Highest degree attained before 2007-08 bachelor's degree
B1HIDEG	Education: Attainment	Highest degree attained since bachelor's as of 2009
B2HIDEG	Education: Attainment	Highest degree attained since bachelor's as of 2012
HIGHLVEX	Education: Attainment	Highest level of education ever expected
B2HICDLT	Education: Attainment	Highest post-baccalaureate attainment as of 2012: Date last attended
B2HICINT	Education: Attainment	Highest post-baccalaureate attainment as of 2012: Enrollment intensity
B2HICTYP	Education: Attainment	Highest post-baccalaureate attainment as of 2012: Institution type
B2HICDST	Education: Attainment	Highest post-baccalaureate attainment: Date first attended, as of 2012
HS_BA	Education: Attainment	Months between high school graduation and 2007-08 bachelor's degree award date
HS_PSE	Education: Attainment	Months between high school graduation and postsecondary enrollment
PSE_BA	Education: Attainment	Months between initial enrollment in postsecondary education and 2007-08 bachelor's degree award date
B1ELIG	Education: Attainment	NPSAS enrollment between July 1, 2007 and June 30, 2008
DEGPR	Education: Attainment	Prior degree earned since high school
DEGPRBA4	Education: Attainment	Prior degree: 4-year bachelor's degree
DEGPRBA5	Education: Attainment	Prior degree: 5-year bachelor's degree
DEGPRAA	Education: Attainment	Prior degree: Associate's degree
DEGPRDOC	Education: Attainment	Prior degree: Doctoral degree

See notes at end of table.



**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
DEGPRFP	Education: Attainment	Prior degree: First professional degree
DEGPRMS	Education: Attainment	Prior degree: Master's degree
DEGPRPTB	Education: Attainment	Prior degree: Post BA certificate
DEGPRPTM	Education: Attainment	Prior degree: Post MA certificate
DEGPCRT	Education: Attainment	Prior degree: Undergraduate certificate or diploma
B1MULTDG	Education: Attainment	Working on bachelor's at NPSAS between July 1, 2007 and June 30, 2008
DISTALL	Education: Courses	Distance education: Entire program
DISTLOC	Education: Courses	Distance education: Location of courses
DISTEDUC	Education: Courses	Distance education: Took courses in 2007-08
SCHWKHR	Education: Courses	Hours per week on schoolwork outside of class
NUSPLGB	Education: Courses	Languages studied as of 2007-08: American Indian or Native American
NUSPLGC	Education: Courses	Languages studied as of 2007-08: American Sign Language
NUSPLGD	Education: Courses	Languages studied as of 2007-08: Asian
NUSPLGE	Education: Courses	Languages studied as of 2007-08: Celtic
NUSPLGF	Education: Courses	Languages studied as of 2007-08: Classical
NUSPLGG	Education: Courses	Languages studied as of 2007-08: Germanic
NUSPLGH	Education: Courses	Languages studied as of 2007-08: Middle Eastern
NUSPLGI	Education: Courses	Languages studied as of 2007-08: Modern Greek
NUSPLGJ	Education: Courses	Languages studied as of 2007-08: Romance
NUSPLGK	Education: Courses	Languages studied as of 2007-08: Slavic
NUSPLGL	Education: Courses	Languages studied as of 2007-08: Turkic
NUSPLGA	Education: Courses	Languages studied: African
NUOTLNG	Education: Courses	Number of languages studied as of 2007-08
B2NP2YR	Education: Experiences	Able to complete bachelor's without attending 2-year institution 2012
B1NP2YR	Education: Experiences	Able to complete bachelor's without attending 2-year institution as of 2009
B2CALTELSE	Education: Experiences	Alternate postbaccalaureate plan: Done something else in 2012
B2CALTDIFF	Education: Experiences	Alternate postbaccalaureate plan: Enrolled in a different program in 2012
B2CALTWORK	Education: Experiences	Alternate postbaccalaureate plan: Worked for pay or worked more hours in 2012
B1NPMJCH	Education: Experiences	Ever formally changed major at bachelor's degree institution as of 2009
MAJORS23	Education: Experiences	Field of study: undergraduate (23 categories)
B1EXPGH	Education: Experiences	Graduated with academic honors in 2007-08
NUSALEN	Education: Experiences	Length studied abroad as of 2007-08
B2CNIWKND	Education: Experiences	Night/weekend courses required in postbaccalaureate degree program(s) as of 2012
B1NDGCWK	Education: Experiences	Non-degree coursework enrollment as of 2009
B2CONLINE	Education: Experiences	Online courses offered in postbaccalaureate degree program(s) as of 2012
B1EXPAP	Education: Experiences	Placed on academic probation as of 2007-08
B1EXPD	Education: Experiences	Placed on Dean's List as of 2007-08
B1EXPIN	Education: Experiences	Received an incomplete grade as of 2007-08
B1EXPRP	Education: Experiences	Repeated course for higher grade as of 2007-08
B1INCHO	Education: Experiences	Satisfaction with quality of education at bachelor's degree institution as of 2009
B2INCHO	Education: Experiences	Satisfaction with quality of education at bachelor's degree institution as of 2012
B2MAJCHO	Education: Experiences	Satisfaction with undergraduate major choice 2012
B1MAJCHO	Education: Experiences	Satisfaction with undergraduate major choice as of 2009
NUSAPRD	Education: Experiences	Time period studied abroad as of 2007-08
B1COBEN	Education: Experiences	Undergraduate education worth the financial cost as of 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1EXPWD	Education: Experiences	Withdrew from course as of 2007-08
B1FUTENR	Education: Future	Expect to pursue degree or certificate in future as of 2009
NGGRDPLN	Education: Future	Plan to apply to graduate school in future as of 2007-08
B2CCARFAM	Education: Graduate	Choosing future field of study: Ability to balance work/family in 2012
B2CAPT	Education: Graduate	Choosing future field of study: Aptitude in 2012
B2CSOC	Education: Graduate	Choosing future field of study: Contribution to society in 2012
B2CEARN	Education: Graduate	Choosing future field of study: Earnings potential in 2012
B2CINT	Education: Graduate	Choosing future field of study: Level of interest in 2012
B2CJOB	Education: Graduate	Choosing future field of study: Likelihood of a job in 2012
B2CURMAJ	Education: Majors	Current enrollment: Field of study, in 2012
MAJORS4Y	Education: Majors	Field of study: undergraduate (10 categories)
B2FSTMAJ	Education: Majors	First post-baccalaureate enrollment as of 2012: Field of study
B2HICMAJ	Education: Majors	Highest post-baccalaureate attainment as of 2012: Field of study
BAMJCIP	Education: Majors	Primary major (CIP code) for 2007-08 bachelor's degree
B1STOPOT	Education: Persistence	Ever stopped out before completing bachelor's degree as of 2009
B1MSPE01	Education: Program	Postbaccalaureate degree 1 primary major: Specific CIP code as of 2009
B1MSPE02	Education: Program	Postbaccalaureate degree 2 primary major: Specific CIP code as of 2009
B1MSPE03	Education: Program	Postbaccalaureate degree 3 primary major: Specific CIP code as of 2009
B1MSPE04	Education: Program	Postbaccalaureate degree 4 primary major: Specific CIP code as of 2009
B1MSPE05	Education: Program	Postbaccalaureate degree 5 primary major: Specific CIP code as of 2009
B1MSPE06	Education: Program	Postbaccalaureate degree 6 primary major: Specific CIP code as of 2009
B1MSPE07	Education: Program	Postbaccalaureate degree 7 primary major: Specific CIP code as of 2009
B1MSPE08	Education: Program	Postbaccalaureate degree 8 primary major: specific CIP code as of 2009
B1MSPE09	Education: Program	Postbaccalaureate degree 9 primary major: specific CIP code as of 2009
NGNOGDA	Education: Reasons	Did not apply to graduate school for academic reasons in 2007-08
NGNOGDB	Education: Reasons	Did not apply to graduate school for employment reasons in 2007-08
NGNOGDC	Education: Reasons	Did not apply to graduate school for financial reasons in 2007-08
NGNOGDD	Education: Reasons	Did not apply to graduate school for other reasons in 2007-08
NGGRPSA	Education: Reasons	Postponed graduate applications for academic reasons in 2007-08
NGGRPSC	Education: Reasons	Postponed graduate applications for employment reasons in 2007-08
NGGRPSB	Education: Reasons	Postponed graduate applications for financial reasons in 2007-08
NGGRPSD	Education: Reasons	Postponed graduate applications for other reasons in 2007-08
B2CNOATTAPP	Education: Reasons	Reason did not attend additional education: Awaiting decision, as of 2012
B2CNOATTFIN	Education: Reasons	Reason did not attend additional education: Financial reasons, as of 2012
B2CNOATTREJ	Education: Reasons	Reason did not attend additional education: Not accepted, as of 2012
B2CNOATTFIT	Education: Reasons	Reason did not attend additional education: Not right fit, as of 2012
B2CNOATTOTH	Education: Reasons	Reason did not attend additional education: Other, as of 2012
B2CNOATTPER	Education: Reasons	Reason did not attend additional education: Personal reasons, as of 2012
B1RSEMP	Education: Reasons	Reason for non-degree coursework: Current employment, as of 2009
B2CRSEMP	Education: Reasons	Reason for non-degree coursework: Current employment, as of 2012
B2CRSGOAL	Education: Reasons	Reason for non-degree coursework: Long-term career goal, as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2CRSLTED	Education: Reasons	Reason for non-degree coursework: Long-term education goal, as of 2012
B1RSGOAL	Education: Reasons	Reason for non-degree coursework: Long-term goals, as of 2009
B1RSOTH	Education: Reasons	Reason for non-degree coursework: Other, as of 2009
B2CRSOTH	Education: Reasons	Reason for non-degree coursework: Other, as of 2012
B1RSPERS	Education: Reasons	Reason for non-degree coursework: Personal enrichment, as of 2009
B2CRSPERS	Education: Reasons	Reason for non-degree coursework: Personal enrichment, as of 2012
B2CPREREQ	Education: Reasons	Reason for non-degree coursework: Prerequisite requirement, as of 2012
B1SOTMOF	Education: Stopout	Stopped out before bachelor's because needed time off from studying as of 2009
B1SOWRK	Education: Stopout	Stopped out before bachelor's because needed to work as of 2009
B1SOACPR	Education: Stopout	Stopped out before bachelor's due to academic problems as of 2009
B1SOFAMC	Education: Stopout	Stopped out before bachelor's due to change in family status as of 2009
B1SOJBML	Education: Stopout	Stopped out before bachelor's due to conflict with job or military as of 2009
B1SOOTH	Education: Stopout	Stopped out before bachelor's for another reason as of 2009
B1SOOFIN	Education: Stopout	Stopped out before bachelor's for other financial reasons as of 2009
B1SOPERS	Education: Stopout	Stopped out before bachelor's for personal reasons as of 2009
B1SOENOT	Education: Stopout	Stopped out before bachelor's to enroll elsewhere as of 2009
TEACTDER	Education: Tests	ACT derived composite score
TESATMDE	Education: Tests	SAT derived math score
TESATVDE	Education: Tests	SAT derived verbal score
B2CGMAT	Education: Tests	Taken graduate or professional entrance exam: GMAT, as of 2012
B2CGRE	Education: Tests	Taken graduate or professional entrance exam: GRE, as of 2012
B2CLSAT	Education: Tests	Taken graduate or professional entrance exam: LSAT, as of 2012
B2CMCAT	Education: Tests	Taken graduate or professional entrance exam: MCAT, as of 2012
B2CEXMNON	Education: Tests	Taken graduate or professional entrance exam: None, as of 2012
B2CEXMOTH	Education: Tests	Taken graduate or professional entrance exam: Other, as of 2012
TETOOK	Education: Tests	Took SAT or ACT exams
NUTRNCRD	Education: Transfer	Ever tried to transfer credits to 2007-08 institution
ATTNPTRN	Education: Undergraduate	Attendance intensity (all schools)
NUSABEVR	Education: Undergraduate	Ever study abroad as of 2007-08
GPA	Education: Undergraduate	Grade point average
TESATDER	Education: Undergraduate	SAT derived composite score
NUTRNACC	Education: Undergraduate	Transfer credits accepted by 2007-08 bachelor's degree institution
B1OCC6A	Employment description	Occupation, collapsed, in 2009
B2DISTINSTE	Employment: 2012	Distance between primary job in 2012 and bachelor's degree institution
B2STCDE	Employment: 2012	State of primary job: 2012
B2EMPZIP	Employment: 2012	Zip code of primary job: 2012
B2RETADD	Employment: Benefits	Contributed to retirement account in past 12 months as of 2012
B2FCONT401K	Employment: Benefits	Contributed to retirement account: 401(k), as of 2012
B2FCONT403B	Employment: Benefits	Contributed to retirement account: 403(b), as of 2012
B2FCONTIRA	Employment: Benefits	Contributed to retirement account: IRA, as of 2012
B2FCONTOTH	Employment: Benefits	Contributed to retirement account: Other, as of 2012
B2FCONTPEN	Employment: Benefits	Contributed to retirement account: Pension, as of 2012
B1EMPLI	Employment: Benefits	Employer offers benefits: Life insurance in 2009
B1EMPMI	Employment: Benefits	Employer offers benefits: Medical or health insurance in 2009
B1EMPOTH	Employment: Benefits	Employer offers benefits: Other in 2009
B1EMPRB	Employment: Benefits	Employer offers benefits: Retirement, other financial benefits in 2009
B2RETIRE	Employment: Benefits	Had a retirement account as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2DBENANY	Employment: Benefits	Primary job: Employer offered any benefits, 2012
B2DBONUS	Employment: Benefits	Primary job: Received bonus, 2012
B2DCOMSN	Employment: Benefits	Primary job: Received commission, 2012
B2DOVTIM	Employment: Benefits	Primary job: Received overtime pay, 2012
B2FRET401K	Employment: Benefits	Retirement account: 401(k), in 2012
B2FRET403B	Employment: Benefits	Retirement account: 403(b), in 2012
B2FRETIRA	Employment: Benefits	Retirement account: IRA, in 2012
B2FRETOTH	Employment: Benefits	Retirement account: Other, in 2012
B2FRETPEN	Employment: Benefits	Retirement account: Pension, in 2012
B1NSF19B	Employment: Description	Job in 2009 related to bachelor's degree major
DISTWK	Employment: Description	Job: distance from NPSAS school to work
B1NSF21B	Employment: Description	Most important reason for working outside bachelor's field as of 2009
B1CUREST	Employment: Description	Non-career job: Continuing job held before graduating in 2009
B1CURFUT	Employment: Description	Non-career job: Deciding on future in 2009
B1CURCAR	Employment: Description	Non-career job: Exploring career options in 2009
B1CURSCH	Employment: Description	Non-career job: Job while in school in 2009
B1CURPAY	Employment: Description	Non-career job: Just paying the bills in 2009
B1CUROTH	Employment: Description	Non-career job: Other description in 2009
B1CURINT	Employment: Description	Non-career job: Pursuing other interests in 2009
B1CUREDU	Employment: Description	Non-career job: Working to prepare for education in 2009
B2DCUREST	Employment: Description	Non-career primary job: Continuing job held before graduating, 2012
B2DCURFUT	Employment: Description	Non-career primary job: Deciding on future, 2012
B2DCURCAR	Employment: Description	Non-career primary job: Exploring career options, 2012
B2DCURSCH	Employment: Description	Non-career primary job: Job while in school, 2012
B2DCURPAY	Employment: Description	Non-career primary job: Just paying the bills, 2012
B2DCUROTH	Employment: Description	Non-career primary job: Other description, 2012
B2DCURINT	Employment: Description	Non-career primary job: Pursuing other interests, 2012
B2DCUREDU	Employment: Description	Non-career primary job: Working to prepare for education, 2012
B2DCURBEN	Employment: Description	Non-career primary job: Working to receive benefits, 2012
B1TCHOCC	Employment: Description	Occupation code is in teaching in 2009
B1OCC33	Employment: Description	Occupation, 33 categories, in 2009
B1CARIND	Employment: Description	Part of a career in industry: Current job in 2009
B2SMSTE	Employment: Description	Primary job in 2012 is in same state as bachelor's degree institution state
B2DENDFPT	Employment: Description	Primary job: Current or most recent job status, 2012
B2DOCC6	Employment: Description	Primary job: Occupation coder 6-digit code, 2012
B2CJOCC33	Employment: Description	Primary job: Occupation, 2012
B2DCURL	Employment: Description	Primary job: Part of a career in industry, 2012
B2DPREFT	Employment: Description	Primary job: Prefer full-time, 2012
B2DNSF19B	Employment: Description	Primary job: Related to bachelor's degree major, 2012
B2DNSFPBD	Employment: Description	Primary job: Related to post-baccalaureate degree/certificate, 2012
B2DNSFA	Employment: Description	Primary job: Requires a bachelor's degree or higher, 2012
B2DEMPFPT	Employment: Description	Primary job: Starting job status, 2012
STEMOC12B	Employment: Description	Primary job: STEM occupation, 2012
B1OUTFLD	Employment: Description	Primary reason for working outside of bachelor's degree field in 2009
B2DOTR	Employment: Description	Reason worked more than 40 hours in primary job: Demands of job, 2012
B2DOTOTH	Employment: Description	Reason worked more than 40 hours in primary job: Other reason, 2012
B2DOTM	Employment: Description	Reason worked more than 40 hours in primary job: To earn extra money, 2012
B2DWYNOH	Employment: Description	Reason worked part time in primary job: Did not want to work more hours, in 2012
B2DWYFR	Employment: Description	Reason worked part time in primary job: Family responsibilities, in 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2DWYNJA	Employment: Description	Reason worked part time in primary job: Full-time job not available, in 2012
B2DWYMLJ	Employment: Description	Reason worked part time in primary job: Held more than one job, in 2012
B2DWYOTH	Employment: Description	Reason worked part time in primary job: Other reason, in 2012
B2DWYSCH	Employment: Description	Reason worked part time in primary job: Working while attending school, in 2012
B1NF21B2	Employment: Description	Second most important reason for working outside bachelor's field as of 2009
STEMOC09	Employment: Description	STEM occupation in 2009
B1EMPTYP	Employment: Description	Type of employer in 2009
B2LTSUB	Employment: Description	Worked as a long-term substitute as of 2012
B1REGTCH	Employment: Description	Worked as a regular teacher as of 2009
B2REGTCH	Employment: Description	Worked as a regular teacher as of 2012
B2TEACHR	Employment: Description	Worked as a regular, itinerant, long-term sub or support teacher since bachelor's degree as of 2012
B1TEACHR	Employment: Description	Worked as a regular, itinerant, support, or long-term sub teacher as of 2012.
B2STSUB	Employment: Description	Worked as a short-term substitute as of 2012
B1STUTCH	Employment: Description	Worked as a student teacher as of 2009
B2STUTCH	Employment: Description	Worked as a student teacher as of 2012
B1SUPTCH	Employment: Description	Worked as a support teacher as of 2009
B2SUPTCH	Employment: Description	Worked as a support teacher as of 2012
B2TCH AID	Employment: Description	Worked as a teacher's aide as of 2012
B2ITNTCH	Employment: Description	Worked as an itinerant teacher as of 2012
B1NSFCHG	Employment: Description	Working outside bachelor's field: Career change, in 2009
B1NSFFAM	Employment: Description	Working outside bachelor's field: Family-related, in 2009
B1NSFLOC	Employment: Description	Working outside bachelor's field: Job location, in 2009
B1NSFFLD	Employment: Description	Working outside bachelor's field: No job in degree field, in 2009
B1NSFOFR	Employment: Description	Working outside bachelor's field: Other, in 2009
B1NSFPAY	Employment: Description	Working outside bachelor's field: Pay/promotion opportunities, in 2009
B1NSFCON	Employment: Description	Working outside bachelor's field: Working conditions, in 2009
B2EMPTYP	Employment: Employer	Primary job: Employer type, 2012
B2DEMPSLF	Employment: Employer	Self-employed in 2012
NEJBNEW	Employment: Future	Job plans for 2008-09
NEWKPLN	Employment: Future	Work plans for 2008-09
B2EEHIST	Employment: History	Employment and enrollment history as of 2012
JOB1GT3	Employment: History	Held first job longer than 3 months
BA_JOB1	Employment: History	Months between bachelor's degree award date and first job
FLAGGT3	Employment: History	More than 3 loop-eligible jobs, 2012
B1NMJBGD	Employment: History	Number of jobs since 2007-08 bachelor's completion as of 2009
B2TOTJOB	Employment: History	Number of jobs since 2007-08 bachelor's degree as of 2012
B1PCEMP	Employment: History	Percent of time employed from bachelor's degree attainment to 2009
B2PCEMP	Employment: History	Percent of time employed from bachelor's degree award date to 2012
B1PCOLF	Employment: History	Percent of time out of the labor force from bachelor's degree attainment to 2009
B2PCOLF	Employment: History	Percent of time out of the labor force from bachelor's degree award date to 2012
B1PCUNEM	Employment: History	Percent of time unemployed from bachelor's degree attainment to 2009
B2PCUNEM	Employment: History	Percent of time unemployed from bachelor's degree award date to 2012
B2CLICENSE	Employment: Licensure	Had industry certification or occupational license as of 2012
B2CCERT	Employment: Licensure	Had vocational or technical certificate as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2DBENDAYC	Employment: Satisfaction	Importance of job factor: Daycare, in 2012
B2DBENCOM	Employment: Satisfaction	Importance of job factors: Commute, in 2012
B2DBENINSU	Employment: Satisfaction	Importance of job factors: Health insurance, in 2012
B2DBENFLEX	Employment: Satisfaction	Importance of job factors: Making decisions, in 2012
B2DBENPRO	Employment: Satisfaction	Importance of job factors: Promotion opportunities, in 2012
B2DBENRETR	Employment: Satisfaction	Importance of job factors: Retirement benefits, in 2012
B2DBENSAL	Employment: Satisfaction	Importance of job factors: Wages and bonuses, in 2012
B2DBENRELA	Employment: Satisfaction	Importance of job factors: Work related to major, in 2012
B1PREFT	Employment: Satisfaction	Prefer to work more hours as of 2009
B1AVGSAT	Employment: Satisfaction	Satisfaction with 2009 job
B1JBIMPO	Employment: Satisfaction	Satisfaction with employment: Challenge of work in 2009
B1JBPAY	Employment: Satisfaction	Satisfaction with employment: Compensation in 2009
B1JBSECR	Employment: Satisfaction	Satisfaction with employment: Job security in 2009
B1JBOVER	Employment: Satisfaction	Satisfaction with employment: Overall satisfaction in 2009
B2DBEN	Employment: Satisfaction	Satisfaction with primary job: Benefits, 2012
B2DCHAL	Employment: Satisfaction	Satisfaction with primary job: Challenge of work, 2012
B2DPAY	Employment: Satisfaction	Satisfaction with primary job: Compensation, 2012
B2DIMP	Employment: Satisfaction	Satisfaction with primary job: Importance of work, 2012
B2DSEC	Employment: Satisfaction	Satisfaction with primary job: Job security, in 2012
B2DBAL	Employment: Satisfaction	Satisfaction with primary job: Work life balance, 2012
B2DEVERLK	Employment: Search	Looked for work since completing bachelor's degree as of 2012
B1SEARCH	Employment: Search	Looking for a job in 2009
B2DSEARCH	Employment: Search	Looking for a job in 2012
B1TIMOFF	Employment: Search	Time before current job offer as of 2009
B1OCCTREND	Employment: Status	2009 occupation, computed for trends
B1EMPMY	Employment: Status	Date began 2009 job
B1WRK12M	Employment: Status	Employed since graduating with bachelor's degree as of 2009
B1LFP09	Employment: Status	Employment and enrollment status in 2009
B2LFP12	Employment: Status	Employment and enrollment status in 2012
B1EMPHX	Employment: Status	Employment history since bachelor's degree attainment as of 2009
B2ENREMP	Employment: Status	Enrollment and employment status (with enrollment intensity) in 2012
B2EMPRT	Employment: Status	Full time/part time status in all jobs in 2012
B1HOURS	Employment: Status	Hours worked per week in 2009
B2ALLHRS	Employment: Status	Hours worked per week in all jobs in 2012
B1APRLFP	Employment: Status	Labor force participation in April 2009
MEMPHIST	Employment: Status	Months between bachelor's degree attainment and 2009 interview
B1MEMP	Employment: Status	Months employed since bachelor's degree attainment as of 2009
B2MEMP	Employment: Status	Months employed since bachelor's degree award date as of 2012
B1MOLF	Employment: Status	Months out of the labor force since bachelor's degree attainment as of 2009
B2MOLF	Employment: Status	Months out of the labor force since bachelor's degree award date as of 2012
B1MUNEM	Employment: Status	Months unemployed since bachelor's degree attainment as of 2009
B2MUNEM	Employment: Status	Months unemployed since bachelor's degree award date as of 2012
B1NUMJOB	Employment: Status	Number of jobs for pay in 2009
B2JBNUM	Employment: Status	Number of jobs for pay in 2012
B1WRKS	Employment: Status	Primarily student or employee while enrolled in 2009
B2CMRJST	Employment: Status	Primary job: Employed in primary job in 2012
B2CJHRS	Employment: Status	Primary job: Hours worked per week, 2012
B2CJMOS	Employment: Status	Primary job: Months held, 2012
B2CJSDAT	Employment: Status	Primary job: Start date, 2012
B2DEMPHM	Employment: Status	Reason not working for pa: Homemaker, in 2012
B1EMPDIS	Employment: Status	Reason not working for pay: Disabled in 2009
B2DEMPDIS	Employment: Status	Reason not working for pay: Disabled, in 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2DEMPSCH	Employment: Status	Reason not working for pay: Enrolled in school, in 2012
B1EMPHM	Employment: Status	Reason not working for pay: Homemaker in 2009
B1EMPTRV	Employment: Status	Reason not working for pay: Traveling in 2009
B2DEMPTRV	Employment: Status	Reason not working for pay: Traveling, in 2012
B1EMPVOL	Employment: Status	Reason not working for pay: Volunteering in 2009
B2DEMPVOL	Employment: Status	Reason not working for pay: Volunteering, in 2012
B1EMPTMP	Employment: Status	Reason not working for pay: Waiting to report to work or layoff in 2009
B2DEMTMP	Employment: Status	Reason not working for pay: Waiting to report to work or layoff, in 2012
B1UNEMSP	Employment: Status	Unemployment spells since bachelor's degree attainment as of 2009
B1JSTAT	Employment: Status	Working for pay in 2009
B2JSTAT	Employment: Status	Working for pay in 2012
JOBEFFA	Employment: While enrolled	Job affects school: Helped with career preparation
JOBEFFB	Employment: While enrolled	Job affects school: Helped with class work
JOBEFFC	Employment: While enrolled	Job affects school: Limited access to campus facilities
JOBEFFD	Employment: While enrolled	Job affects school: Limited the class schedule
JOBEFFE	Employment: While enrolled	Job affects school: Limited the number of classes
JOBEFFF	Employment: While enrolled	Job affects school: Restricted choice of classes
JOBAFFOR	Employment: While enrolled	Job: Can afford school without working
JOBEARN	Employment: While enrolled	Job: earnings from work while enrolled (excl work-study/assistantship)
JOBEARN2	Employment: While enrolled	Job: earnings from work while enrolled (include work-study/assistantship)
JOBEFFGR	Employment: While enrolled	Job: Effect on grades (student)
JOBPRIOR	Employment: While enrolled	Job: Have job prior to enrollment at NPSAS school
JOBHOUR	Employment: While enrolled	Job: Hours worked per week (excluding work study or assistantship)
JOBNONOFF	Employment: While enrolled	Job: Located primarily on or off campus
JOBNUM	Employment: While enrolled	Job: Number (exclude work study or assistantship)
JOBROLE	Employment: While enrolled	Job: Primary role as student or employee (excl work study or assistant)
JOBMAJOR	Employment: While enrolled	Job: Related to major (degree)
JOBEMLP	Employment: While enrolled	Job: Type of employer
JOBTYPER	Employment: While enrolled	Job: Type of job
JOBWEEK	Employment: While enrolled	Job: Weeks worked while enrolled
JOBNUM2	Employment: While enrolled	Number of jobs (include work study or assistantship)
B2DWRKS	Employment: While enrolled	Primarily student or employee while enrolled in 2012
JOBSNA	Employment: While enrolled	Reason for working: Earn spending money
JOBSNB	Employment: While enrolled	Reason for working: Gain job experience
JOBSNC	Employment: While enrolled	Reason for working: Minimize debt
JOBSND	Employment: While enrolled	Reason for working: Parents' expectations
JOBSNE	Employment: While enrolled	Reason for working: Pay educational expenses
JOBSNF	Employment: While enrolled	Reason for working: Pay living expenses
JOBSNG	Employment: While enrolled	Reason for working: To send money home
SJASST	Employment: While enrolled	School job: assistantship
SJSCHOOL	Employment: While enrolled	School job: For NPSAS or another institution/organization
SJHOURS	Employment: While enrolled	School job: Hours worked per week (work-study/assistantship)
SJONOFF	Employment: While enrolled	School job: Located primarily on or off campus
SJMAJOR	Employment: While enrolled	School job: Related to major or coursework
SJEARN	Employment: While enrolled	School job: total earnings
SJWEEK	Employment: While enrolled	School job: Weeks worked
SJWKST	Employment: While enrolled	School job: work-study job
JOBTYPER2	Employment: While enrolled	Type of job student had (include work study or assistantship)
JOBENR	Employment: While enrolled	Work intensity while enrolled (exclude work study or assistantship)

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
JOBENR2	Employment: While enrolled	Work intensity while enrolled (include work study or assistantship)
JOBHOUR2	Employment: While enrolled	Work: Hours per week
JOBROLE2	Employment: While enrolled	Work: Primarily student or employee
SJCOMSER	Employment: While enrolled	Work-study job: Community service project
SJTUTOR	Employment: While enrolled	Work-study job: Literacy education or tutoring
B2FOTHER	Family	Any dependents other than children in 2012
PARBORN	Family	Born in the U.S. (parents)
DEPCARE	Family	Dependents: Children in daycare
DEPCOST	Family	Dependents: Children in daycare, monthly daycare costs
PRIMLANG	Family	English is the primary language
PFAMNUM	Family	Family size (dependent)
SFAMNUM	Family	Family size (independent)
PDADED	Family	Father's highest education level
SIBINCOL	Family	Have siblings in college
B1SPLV	Family	Highest education attained by spouse as of 2009
B2FSPLV	Family	Highest education attained by spouse as of 2012
PMARITAL	Family	Marital status (parents)
PMOMED	Family	Mother's highest education level
B1SPNOT	Family	Not married to spouse in 2008
B2FDEP2	Family	Number of dependent children in 2012
B2NMUN12	Family	Number of dependent children under age 12 in 2012
B2NUMDEP	Family	Number of dependents in 2012
PINCOL	Family	Number of family members in college (dependent)
SINCOL	Family	Number of family members in college (independent)
B2NUMNCD	Family	Number of non-child dependents in 2012
PAREduc	Family	Parent's highest education level
PARCOLL	Family	Parents taking college courses
B1SPCOL	Family	Spouse attended college or graduate school in 2008-09
B2FSPCOL	Family	Spouse attended college or graduate school in 2012-13
SPINCOL	Family	Spouse attending college
B1SPEMP	Family	Spouse employed in 2008
B2FSPEMP	Family	Spouse employed in 2011
B2FSELLPO	Finances: Assets	Result of the sale of all major possessions in 2012
B1LNFGN	Finances: Debt education	Loan payments: Paid through a loan forgiveness program in 2009
PFEDBEN	Finances: Debt other	Dependent student parents number of federal benefits
PCTPOV	Finances: Debt other	Income percent of poverty level
FEDBEND	Finances: Debt other	Received federal benefit: TANF Benefits
FEDBENE	Finances: Debt other	Received federal benefit: WIC Benefits
B1CARPAY	Finances: Expenses	Car payment amount in 2009
B2FCARAMT	Finances: Expenses	Car payment amount in 2012
B2FHOMOWE	Finances: Expenses	Current amount owed on mortgage for primary residence in 2012
B2FHOMVAL	Finances: Expenses	Current value of primary residence in 2012
B2FNONE	Finances: Expenses	Do not pay mortgage or rent in 2012
B2FSTRESS	Finances: Expenses	Financial difficulty in past 12 months as of 2012
B2FCARLOAN	Finances: Expenses	Had car loan or lease in 2012
PCTINDEP	Finances: Expenses	Income percentile independent students
B2FCSTDYCR	Finances: Expenses	Monthly daycare costs in 2012
B1MTGAMT	Finances: Expenses	Monthly rent or mortgage payment amount in 2009
B2FMTGAMT	Finances: Expenses	Monthly rent or mortgage payment amount in 2012
B2FOWNHM	Finances: Expenses	Own home outright in 2012
OWNINVPA	Finances: Expenses	Parents own investments, business or farm over \$10,000
B2FMORTG	Finances: Expenses	Pay mortgage in 2012
B2FRENT	Finances: Expenses	Pay rent in 2012
FEDBENC	Finances: Expenses	Received federal benefit: Supplemental Security Income Benefits

See notes at end of table.



**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1HHPAY	Finances: Expenses	Total monthly household debt payment in 2009
B2AFINWHO	Finances: Family	Adult in household who shares financial responsibilities in 2012
PFEDTAX	Finances: Family	Dependent student parents federal tax paid
PCTDEP	Finances: Family	Income percentile dependent students
B2AFINCON	Finances: Family	Shares financial responsibilities with household adult in 2012
B1SPLN	Finances: Family	Spouse had student loans as of 2009
B2FSPLN	Finances: Family	Spouse had student loans as of 2012
B2FSPOWE	Finances: Family	Spouse's loan amount owed as of 2012
B1SPPAMT	Finances: Family	Spouse's monthly payment on student loans in 2009
B2FSPLNPY	Finances: Family	Spouse's monthly payment on student loans in 2012
B1SPAMT	Finances: Family	Spouse's student loan amount as of 2009
B1SPLNAM	Finances: Family	Spouse's student loan amount as of 2009
B2FSPAMT	Finances: Family	Spouse's student loan amount as of 2012
B1SPOWE	Finances: Family	Spouse's student loan amount owed as of 2009
CAGI	Finances: Income	Adjusted Gross Income (AGI)
JOBSAVE	Finances: Income	Amount saved from summer 2007 earnings
B1SALNT	Finances: Income	Annualized salary (non-teachers) in 2009
B1ERNINC	Finances: Income	Annualized salary for current job in 2009
B1SALPR	Finances: Income	Annualized salary percentile for current job in 2009
B2INC12	Finances: Income	Annualized total salary for all jobs in 2012
CRBALDUE	Finances: Income	Credit cards: Balance due on all credit cards
CRNUMCRD	Finances: Income	Credit cards: Number of credit cards in own name
CRPARPAY	Finances: Income	Credit cards: Parents help pay credit card bills
CRPAYOFF	Finances: Income	Credit cards: Pay off or carry balance
DEPINC	Finances: Income	Dependent parent income
DSTUINC	Finances: Income	Dependent student income
PTAXFILE	Finances: Income	Dependent student parents federal tax filed
INCOMST	Finances: Income	Earnings in 2007
B1INCSP	Finances: Income	Income (independents' spouses) in 2008
PCTALL	Finances: Income	Income percentile rank for all students
INDEPINC	Finances: Income	Independent student and spouse income
STAXFILE	Finances: Income	Independent student federal tax filed
SFEDTAX	Finances: Income	Independent student federal tax paid
SFEDBEN	Finances: Income	Independent student number of federal benefits
SPSINC	Finances: Income	Independent student spouse income
MNTRENT	Finances: Income	Monthly mortgage or rent amount
HOMEPAR	Finances: Income	Parents own home or pay mortgage
B2CJSAL	Finances: Income	Primary job: Annualized salary, 2012
FEDBEN	Finances: Income	Received federal benefit: Any
FEDBENA	Finances: Income	Received federal benefit: Food Stamp Benefit
FEDBENB	Finances: Income	Received federal benefit: Free or Reduced Price School Lunch Benefits
UNTAXBF	Finances: Income	Received untaxed benefits in 2007
UNTAXBFA	Finances: Income	Received untaxed benefits: Child support
UNTAXBFB	Finances: Income	Received untaxed benefits: disability payments
UNTAXBFC	Finances: Income	Received untaxed benefits: worker's compensation
INCPCT1	Finances: Income	Student budget as percent of income
HOMESTUD	Finances: Income	Student owns home or pays mortgage
OWNINVST	Finances: Income	Student owns investments, business or farm over \$10,000
INCOME	Finances: Income	Total income by dependency
CINCOME	Finances: Income	Total income: Parents and independent
JOBSUMMR	Finances: Income	Worked during summer 2007
TOTWKST	Financial aid	Total work study
AIDAPP	Financial aid: Application	Applied for any aid

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
FEDAPP	Financial aid: Application	Applied for federal aid
FINAIDA	Financial aid: Application	Financial aid decisions: Compared lender options
FINAIDB	Financial aid: Application	Financial aid decisions: Discussed with family or friends
FINAIDC	Financial aid: Application	Financial aid decisions: Researched on Internet
FINAIDD	Financial aid: Application	Financial aid decisions: Talked with staff
REANOAPA	Financial aid: Application	Reason for not applying: Did not want to take on the debt
REANOAPB	Financial aid: Application	Reason for not applying: Forms were too much work
REANOAPC	Financial aid: Application	Reason for not applying: No information about how to apply
REANOAPD	Financial aid: Application	Reason for not applying: No need
REANOAPE	Financial aid: Application	Reason for not applying: Thought ineligible
B2CNSCUM	Financial aid: Borrowed cumulative	Amount of federal loans consolidated as of 2012
B1LOANS	Financial aid: Borrowed cumulative	Borrowed any undergraduate loans through 2007-08
B2BORAT	Financial aid: Borrowed cumulative	Cumulative amount borrowed for education as of 2012
B2FEDCUM2	Financial aid: Borrowed cumulative	Cumulative amount borrowed in federal loans as of 2012 - graduate level
B2FEDCUM1	Financial aid: Borrowed cumulative	Cumulative amount borrowed in federal loans as of 2012 - undergraduate level
B2FDDUE3	Financial aid: Borrowed cumulative	Cumulative federal amount owed (principal and interest) for all education as of 2012
B2FDDUE2	Financial aid: Borrowed cumulative	Cumulative federal amount owed (principal and interest) for graduate as of 2012
B2FDDUE1	Financial aid: Borrowed cumulative	Cumulative federal amount owed (principal and interest) for undergraduate as of 2012
B2FDOWE1	Financial aid: Borrowed cumulative	Cumulative federal amount owed (principal) for undergraduate as of 2012
FEDCUM1	Financial aid: Borrowed cumulative	Cumulative federal loan amount for undergrad
B1T4TOWE	Financial aid: Borrowed cumulative	Cumulative federal loan amount owed in 2009
B2PLUCUM	Financial aid: Borrowed cumulative	Cumulative Graduate PLUS loan amount as of 2012
B1BORAT	Financial aid: Borrowed cumulative	Cumulative loan amount borrowed for undergraduate through 2007-08
CUMLNTP1	Financial aid: Borrowed cumulative	Cumulative loan type for undergrad
B1NFCUM1	Financial aid: Borrowed cumulative	Cumulative nonfederal loans borrowed for undergraduate through 2007-08
B1PERCUM	Financial aid: Borrowed cumulative	Cumulative Perkins loan amount as of 2009
B2PERCUM	Financial aid: Borrowed cumulative	Cumulative Perkins loan amount as of 2012
PLUSCUM	Financial aid: Borrowed cumulative	Cumulative PLUS amount
B2T4XCUM	Financial aid: Borrowed cumulative	Cumulative Stafford and Perkins loan amount as of 2012
B2SUBCUM	Financial aid: Borrowed cumulative	Cumulative Stafford subsidized and Perkins loan amount as of 2012
B1STSCUM	Financial aid: Borrowed cumulative	Cumulative Stafford subsidized loan amount as of 2009
B2STSCUM	Financial aid: Borrowed cumulative	Cumulative Stafford subsidized loan amount as of 2012
B2STFCUM	Financial aid: Borrowed cumulative	Cumulative Stafford total loan amount as of 2012
B2STUCUM	Financial aid: Borrowed cumulative	Cumulative Stafford unsubsidized loan amount as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2FEDCUM3	Financial aid: Borrowed cumulative	Cumulative total amount borrowed in federal loans as of 2012
B2LOANPAID	Financial aid: Debt and repayment	All federal loans were paid in full as of 2012
B2PRIVAMT	Financial aid: Debt and repayment	Amount of private student loans as of 2012
B1OWAMT1	Financial aid: Debt and repayment	Amount owed in 2009
B1DEFER	Financial aid: Debt and repayment	Any undergraduate loans in deferment as of 2009
B1FORBAR	Financial aid: Debt and repayment	Any undergraduate loans in forbearance as of 2009
B1SETTLE	Financial aid: Debt and repayment	Any undergraduate loans settled as of 2009
B2DFR_AVG	Financial aid: Debt and repayment	Average number of deferments per loan as of 2012
B2DLQ_AVG	Financial aid: Debt and repayment	Average number of delinquencies per federal loan as of 2012
B2FBPERLN	Financial aid: Debt and repayment	Average number of forbearances per loan as of 2012
LOANBF071995	Financial aid: Debt and repayment	Borrowed federal loans before July 1995
B2TOTDUE3	Financial aid: Debt and repayment	Cumulative amount owed for education loans as of 2012 (federal and private, principal and interest)
B2PELLCUM	Financial aid: Debt and repayment	Cumulative amount received in Pell grants as of 2012
B1FDOWE1	Financial aid: Debt and repayment	Cumulative federal amount owed for undergraduate as of 2008-09
B2T4XDUE	Financial aid: Debt and repayment	Cumulative Stafford and Perkins loan amount owed (principal and interest) as of 2012
B2DLQ_NOW	Financial aid: Debt and repayment	Currently in delinquent status - has a federal loan in delinquency in the 2011-12 academic year
B2LOANPDDT	Financial aid: Debt and repayment	Date all federal loans were paid in full as of 2012
B2LASTSTD	Financial aid: Debt and repayment	Date of status of latest federal loan as of 2012
B2FAFFHOME	Financial aid: Debt and repayment	Education cost: Delayed buying a home, in 2012
B2FAFFMARR	Financial aid: Debt and repayment	Education cost: Delayed getting married, in 2012
B2FAFFCHLD	Financial aid: Debt and repayment	Education cost: Delayed having children, in 2012
B2FAFFEDJB	Financial aid: Debt and repayment	Education cost: Taken job instead of enroll, in 2012
B2FAFFLESS	Financial aid: Debt and repayment	Education cost: Taken job outside of field, in 2012
B2FAFFWKMR	Financial aid: Debt and repayment	Education cost: Work more than desired, in 2012
B2DEFER	Financial aid: Debt and repayment	Ever had a deferment on a loan as of 2012
B2EVERPIF	Financial aid: Debt and repayment	Ever had a loan paid in full as of 2012
B2FORBAR	Financial aid: Debt and repayment	Ever had any loans in forbearance as of 2012
B2EVERDAFB	Financial aid: Debt and repayment	Ever had loans in deferment or forbearance as of 2012
B2LASTLEV	Financial aid: Debt and repayment	Grade level when last federal loan was received as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2FWORTHG	Financial aid: Debt and repayment	Graduate education was worth the financial cost in 2012
B1BRLN	Financial aid: Debt and repayment	Income based repayment in 2009
B2OWEPRIN	Financial aid: Debt and repayment	Latest federal amount owed - principal as of 2012
B2DATFB	Financial aid: Debt and repayment	Latest forbearance date for borrower as of 2012
B2REPLN	Financial aid: Debt and repayment	Latest repayment plan type for federal loan as of 2012
B1LNHLP	Financial aid: Debt and repayment	Loan payments: Paid by family or friends, as of 2009
B2CELNHLP	Financial aid: Debt and repayment	Loans being paid by family or friends in 2012
B2RPMT_FED	Financial aid: Debt and repayment	Monthly federal student loan payment in 2012
B1EDPCT	Financial aid: Debt and repayment	Monthly loan repayment as percent of income in 2009
B2EDPCT	Financial aid: Debt and repayment	Monthly loan repayment as percent of income in 2012
B2LNPMT	Financial aid: Debt and repayment	Monthly payment on student loans in 2012 (federal and private)
B2RPMT_PRI	Financial aid: Debt and repayment	Monthly private student loan payment in 2012
B1RPYAMT	Financial aid: Debt and repayment	Monthly undergraduate loan payment in 2009
B2DFR_REAS	Financial aid: Debt and repayment	Most common deferment reason for borrower for all loans as of 2012
B2DFR_ECON	Financial aid: Debt and repayment	Number of deferments for economic difficulty for all loans as of 2012
B2DFR_FAM	Financial aid: Debt and repayment	Number of deferments for family or disability for all loans as of 2012
B2DFR_GOV	Financial aid: Debt and repayment	Number of deferments for government program (Action, Peace Corps, Head Start, NOAA) for all loans as of 2012
B2DFR_MIL	Financial aid: Debt and repayment	Number of deferments for military or law enforcement for all loans as of 2012
B2DFR_ENR	Financial aid: Debt and repayment	Number of deferments for student enrollment for all loans as of 2012
B2DFR_TEA	Financial aid: Debt and repayment	Number of deferments for teacher, medical, or nonprofit for all loans as of 2012
B2DFROCRECON	Financial aid: Debt and repayment	Number of separate deferments granted for economic difficulty as of 2012
B2DFROCRFAM	Financial aid: Debt and repayment	Number of separate deferments granted for family or disability as of 2012
B2DFROCRGOV	Financial aid: Debt and repayment	Number of separate deferments granted for government program (Action, Peace Corps, Head Start, NOAA) as of 2012
B2DFROCRMIL	Financial aid: Debt and repayment	Number of separate deferments granted for military or law enforcement as of 2012
B2DFROCRENR	Financial aid: Debt and repayment	Number of separate deferments granted for student enrollment as of 2012
B2DFROCRTEA	Financial aid: Debt and repayment	Number of separate deferments granted for teacher, medical, or nonprofit as of 2012
B2OWEPNLRP	Financial aid: Debt and repayment	Outstanding principle amount at date last entered repayment as of 2012
B2CPRIVRT	Financial aid: Debt and repayment	Private student loan interest rate in 2012
B2PRIVSTAT	Financial aid: Debt and repayment	Private student loan status in 2012
B2DEBTRT	Financial aid: Debt and repayment	Ratio of federal loans to annualized salary as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
DEBTRT09	Financial aid: Debt and repayment	Ratio of federal loans to annualized salary in 2009
B2DFROCRREAS	Financial aid: Debt and repayment	Reason for most frequently-granted deferment as of 2012
B2PRIVLN	Financial aid: Debt and repayment	Received a private loan as of 2012
B1PAYPLN	Financial aid: Debt and repayment	Repayment plan of federal loan in 2009
B1REPAY	Financial aid: Debt and repayment	Repayment status for any loans in 2009
B2PAYSTAT	Financial aid: Debt and repayment	Repayment status for any loans in 2012 (federal and private)
B2LNSTAT	Financial aid: Debt and repayment	Status of latest federal loan as of 2012
LNSTATUS	Financial aid: Debt and repayment	Status of latest undergraduate federal loan as of 2008-09
B2CEOUTLN	Financial aid: Debt and repayment	Stress from education-related debt in 2012
B2OWELRP	Financial aid: Debt and repayment	Total federal amount owed at time last entered repayment as of 2012
B2OWELDEF	Financial aid: Debt and repayment	Total federal amount owed at time of latest default as of 2012
B2DFR_NUM	Financial aid: Debt and repayment	Total number of deferments for all loans as of 2012
B2NUMFEDLN	Financial aid: Debt and repayment	Total number of federal loans taken by student as of 2012
B2DFROCRNUM	Financial aid: Debt and repayment	Total number of separate deferment incidents as of 2012
B1LNINST	Financial aid: Debt and repayment	Undergrad loan debt influenced employment: Job outside field, as of 2009
B1LNINJB	Financial aid: Debt and repayment	Undergrad loan debt influenced employment: Less desirable job, as of 2009
B1LNINMR	Financial aid: Debt and repayment	Undergrad loan debt influenced employment: More than one job, as of 2009
B1LNEDU	Financial aid: Debt and repayment	Undergrad loan debt influenced employment: Work instead of school, as of 2009
B1LNINHR	Financial aid: Debt and repayment	Undergrad loan debt influenced employment: Worked more hours, as of 2009
B2FWORTH	Financial aid: Debt and repayment	Undergraduate education was worth the financial cost as of 2012
B1LNWRTH	Financial aid: Debt and repayment	Undergraduate loan debt a worthwhile investment as of 2009
B1LNINFL	Financial aid: Debt and repayment	Undergraduate loan debt influenced employment plans as of 2009
B1LNINOT	Financial aid: Debt and repayment	Undergraduate loan debt influenced employment: Other reasons, as of 2009
CAMPAMT	Financial aid: Federal	Federal campus based aid (Perkins, SEOG, FWSP)
FEDNEED	Financial aid: Federal	Federal need based aid
TFEDWRK	Financial aid: Federal	Federal work-study
TXELIGD	Financial aid: Federal	Tax benefit eligibility (Hope, Lifetime, deduction)
TXTOTBEN	Financial aid: Federal	Tax benefit received from federal tax credits and deductions
TXELIGR	Financial aid: Federal	Tax benefit: reasons not received
ETOTMX2	Financial aid: Federal loans	Stafford individual total maximum
B1SBLOAN	Financial aid: Graduate	Graduate federal subsidized loan amount in 2008-09
B1STFAMT	Financial aid: Graduate	Graduate Stafford total loan amount in 2008-09
B1T4LAMT	Financial aid: Graduate	Graduate Title IV loan amount in 2008-09
B1ANYAS	Financial aid: Graduate	Post-baccalaureate degree: Any assistantships as of 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1FINETR	Financial aid: Graduate	Postbaccalaureate financial aid type: Employer tuition assistance, as of 2009
B1FINFEL	Financial aid: Graduate	Postbaccalaureate financial aid type: Fellowships, as of 2009
B1FINGR	Financial aid: Graduate	Postbaccalaureate financial aid type: Grants or scholarships, as of 2009
B1FINNON	Financial aid: Graduate	Postbaccalaureate financial aid type: None, as of 2009
B1FINOGA	Financial aid: Graduate	Postbaccalaureate financial aid type: Other graduate assistantship, as of 2009
B1FINOTH	Financial aid: Graduate	Postbaccalaureate financial aid type: Other, as of 2009
B1FINPL	Financial aid: Graduate	Postbaccalaureate financial aid type: Personal loan or gift, as of 2009
B1FINBLO	Financial aid: Graduate	Postbaccalaureate financial aid type: Private education/bank loans, as of 2009
B1FINRA	Financial aid: Graduate	Postbaccalaureate financial aid type: Research assistantship, as of 2009
B1FINTA	Financial aid: Graduate	Postbaccalaureate financial aid type: Teaching assistantship, as of 2009
INATHAMT	Financial aid: Grants	Athletic scholarships
PELLCUM	Financial aid: Grants	Cumulative Pell amount
EMPLYAM3	Financial aid: Grants	Employer aid (student & parents)
EMPLYAM1	Financial aid: Grants	Employer aid (student)
SMARTAMT	Financial aid: Grants	Federal National Science and Mathematics Access to Retain Talent grant
PELLAMT	Financial aid: Grants	Federal Pell grant
SEOGAMT	Financial aid: Grants	Federal Supplemental Educational Opportunity Grant (SEOG)
PELLFST	Financial aid: Grants	First year received a Pell grant
GRNTSRC	Financial aid: Grants	Grant package by source of grant
INGRTAMT	Financial aid: Grants	Institutional grants total
INSTNOND	Financial aid: Grants	Institutional non need & merit grants
PELLST	Financial aid: Grants	Last year received a Pell grant
PELLYRS	Financial aid: Grants	Number of years received Pell grants
OTHFDGRT	Financial aid: Grants	Other federal grants (not Title IV)
OTHGTAMT	Financial aid: Grants	Outside grants (private & employer)
PRIVAIID	Financial aid: Grants	Private sources grants
GRTPCCTN	Financial aid: Grants	Ratio of grant aid to tuition
GRTLON	Financial aid: Grants	Ratio of grants to total loans
PELLCST	Financial aid: Grants	Ratio of Pell grant to student budget
PELLRAT2	Financial aid: Grants	Ratio of Pell grant to total grants
NSGST07	Financial aid: Grants	SMART grant status in 2006-07
NSGST08	Financial aid: Grants	SMART grant status in 2007-08
TFEDGRT	Financial aid: Grants	Total federal grants
TFEDGRT2	Financial aid: Grants	Total federal grants and veterans/DOD
MERITAIID	Financial aid: Grants	Total merit only grants
NEEDAID	Financial aid: Grants	Total need based grant aid
B1TCHGRT	Financial aid: Information	Aware of TEACH Grant program as of 2009
B2TCHGRT	Financial aid: Information	Aware of TEACH Grant Program in 2012
B1LNFRGV	Financial aid: Information	Aware of teacher loan forgiveness programs as of 2009
B2LNFRGV	Financial aid: Information	Aware of teacher loan forgiveness programs in 2012
B1LNINCT	Financial aid: Information	Teacher loan forgiveness programs influential as of 2009
INSTPACK	Financial aid: Institutional	Aid package with institutional aid
INSTAMT	Financial aid: Institutional	Institutional aid total
INLNAMT	Financial aid: Institutional	Institutional loans
INSMERIT	Financial aid: Institutional	Institutional merit-only grants
INSTNEED	Financial aid: Institutional	Institutional need-based grants
INSWAIV	Financial aid: Institutional	Institutional tuition & fee waivers
EMPLWAIV	Financial aid: Institutional	Institutional tuition waivers for staff

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
INSTWRK	Financial aid: Institutional	Institutional work-study
INSTGPCT	Financial aid: Institutional	Ratio of institutional grants to total aid
B1DEFAULT	Financial aid: Loans	Any federal loans in default as of 2009
LNCOSIGN	Financial aid: Loans	Cosign on student loans
B1T4TCUM	Financial aid: Loans	Cumulative federal loan amount borrowed as of 2009
B1PLUCUM	Financial aid: Loans	Cumulative Graduate PLUS loan amount as of 2009
PERKCUM1	Financial aid: Loans	Cumulative Perkins amount for undergrad
B1T4XCUM	Financial aid: Loans	Cumulative Stafford and Perkins loan amount as of 2009
B1T4XOWE	Financial aid: Loans	Cumulative Stafford and Perkins loan amount owed in 2009
STFCUM1	Financial aid: Loans	Cumulative Stafford for undergrad
B1SUBCUM	Financial aid: Loans	Cumulative Stafford subsidized and Perkins loan amount as of 2009
B1STFCUM	Financial aid: Loans	Cumulative Stafford total loan amount as of 2009
B1STUCUM	Financial aid: Loans	Cumulative Stafford unsubsidized loan amount as of 2009
SUBCUM1	Financial aid: Loans	Cumulative subsidized Stafford and Perkins for undergrad
STSBUM1	Financial aid: Loans	Cumulative subsidized Stafford for undergrad
LNREPAY	Financial aid: Loans	Expect help with repaying student loans
SUBLOAN	Financial aid: Loans	Federal subsidized loans (Stafford & Perkins)
B2FEDFYEAR	Financial aid: Loans	First year borrowed federal loans as of 2012
B1PRKAMT	Financial aid: Loans	Graduate Perkins loan amount in 2008-09
B1GPLAMT	Financial aid: Loans	Graduate PLUS loan amount in 2008-09
B1STAFSB	Financial aid: Loans	Graduate Stafford subsidized loan amount in 2008-09
B1STUNSB	Financial aid: Loans	Graduate Stafford unsubsidized loan amount in 2008-09
B2FEDLYEAR	Financial aid: Loans	Last year borrowed federal loans as of 2012
LOANSRC	Financial aid: Loans	Loan package by source of loan
B2NUMFDYR2	Financial aid: Loans	Number of years borrowing federal loans - graduate, as of 2012
B2NUMFDYR1	Financial aid: Loans	Number of years borrowing federal loans - undergraduate, as of 2012
B2NUMFDYR3	Financial aid: Loans	Number of years borrowing federal loans as of 2012
STAFYRS	Financial aid: Loans	Number of years received Stafford loans
PRIVPACK	Financial aid: Loans	Package of private and non-private loans
PLUSAMT	Financial aid: Loans	Parent PLUS loan total
B1FORGIV	Financial aid: Loans	Participating in loan forgiveness for undergraduate loans in 2009
PERKAMT	Financial aid: Loans	Perkins loan
PRIVLOAN	Financial aid: Loans	Private (alternative) loans
FLNPCT6	Financial aid: Loans	Ratio of federal loans to federal aid (excludes PLUS, veterans)
LOANCST	Financial aid: Loans	Ratio of loans to student budget (excludes PLUS)
LOANPCT	Financial aid: Loans	Ratio of loans to total aid (excl PLUS)
PLUSPCT	Financial aid: Loans	Ratio of PLUS loan to total aid
ESUBMX2	Financial aid: Loans	Stafford individual subsidized maximum
STAFYPE	Financial aid: Loans	Stafford loan types received
DIRECTLN	Financial aid: Loans	Stafford loan, Direct or FFELP program indicator
STSUBMX	Financial aid: Loans	Stafford program subsidized maximum
STTOTMX	Financial aid: Loans	Stafford program total maximum
STAFCT1	Financial aid: Loans	Stafford subsidized maximum
STAFSUB	Financial aid: Loans	Stafford subsidized total
STAFCT2	Financial aid: Loans	Stafford total maximum
STAFFAMT	Financial aid: Loans	Stafford total subsidized and unsubsidized
STAFUNSB	Financial aid: Loans	Stafford unsubsidized total
T4LNAMT1	Financial aid: Loans	Title IV loans (excludes PLUS)
T4LNAMT2	Financial aid: Loans	Title IV loans (includes PLUS)
TFEDLN	Financial aid: Loans	Total federal loans (excludes PLUS)
TFEDLN2	Financial aid: Loans	Total federal loans (includes PLUS)
STAFFST	Financial aid: Loans	Year of first Stafford loan
STAFST	Financial aid: Loans	Year of last Stafford loan

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
AIDSNEED	Financial aid: Need	Aid amount exceeding federal need
EFCAID	Financial aid: Need	Aid subject to federal EFC limitation
EFC	Financial aid: Need	Expected Family Contribution
GRTSNEED	Financial aid: Need	Grant amount exceeding federal need
SNEED1	Financial aid: Need	Student budget minus EFC
SNEED9	Financial aid: Need	Student budget minus EFC & all aid except private loans
SNEED8	Financial aid: Need	Student budget minus EFC & federal, state, and other grants
SNEED5	Financial aid: Need	Student budget minus EFC minus all grants
SNEED3	Financial aid: Need	Student budget minus EFC minus federal grants
SNEED4	Financial aid: Need	Student budget minus EFC minus grants and federal need aid
SNEED2	Financial aid: Need	Student budget minus EFC minus total aid
SNEED7	Financial aid: Need	Student budget minus EFC, federal & state grants
EFFORT20	Financial aid: Net price	Net price after grants and loans as percent of income
EFFORT9	Financial aid: Net price	Net tuition after all grants as percent of income
NETCST1	Financial aid: Net price	Student budget minus all aid
NETCST34	Financial aid: Net price	Student budget minus all aid and federal tax benefits
NETCST41	Financial aid: Net price	Student budget minus all aid except private loans
NETCST18	Financial aid: Net price	Student budget minus all aid except work study
NETCST3	Financial aid: Net price	Student budget minus all grants
NETCST17	Financial aid: Net price	Student budget minus all grants and loans
NETCST20	Financial aid: Net price	Student budget minus all grants and loans (including PLUS)
NETCST32	Financial aid: Net price	Student budget minus all grants and Veterans' benefit
NETCST33	Financial aid: Net price	Student budget minus all grants, veteran, and tax benefits
NETCST16	Financial aid: Net price	Student budget minus federal and state grants
NETCST2	Financial aid: Net price	Student budget minus federal grants
NETCST30	Financial aid: Net price	Student budget minus federal grants and Veterans' benefit
NETCST31	Financial aid: Net price	Student budget minus federal grants, veteran, and tax benefits
NETCST4	Financial aid: Net price	Student budget minus grants and half of loans
NETCST40	Financial aid: Net price	Student budget minus state & institutional grants
NETCST9	Financial aid: Net price	Tuition and fees minus all grants
NETCST35	Financial aid: Net price	Tuition and fees minus all grants and Veterans' benefit
NETCST36	Financial aid: Net price	Tuition and fees minus all grants, veteran, and tax benefits
NETCST14	Financial aid: Net price	Tuition and fees minus all non federal grants
NETCST10	Financial aid: Net price	Tuition and fees minus federal grants
NETCST37	Financial aid: Net price	Tuition and fees minus federal grants and Veterans' benefit
NETCST38	Financial aid: Net price	Tuition and fees minus federal grants, veteran, and tax benefits
NETCST13	Financial aid: Net price	Tuition and fees minus institutional grants
NETCST15	Financial aid: Net price	Tuition and fees minus state and institutional grants
NETCST12	Financial aid: Net price	Tuition and fees minus state grants
EMPLYAMT	Financial aid: Other	Employer aid (includes college staff)
EMPLYAM2	Financial aid: Other	Employer aid (parents)
OTHRSCR	Financial aid: Other	Outside sources total
OTHTYPE2	Financial aid: Other	Total other type of aid including work study
PRIVAMT	Financial aid: Other	Total private sources grants and loans
VETBEN	Financial aid: Other	Veterans' benefit
VADODAMT	Financial aid: Other	Veterans' benefit and DOD
AIDSRC	Financial aid: Package	Aid package by source of aid
PELLPACK	Financial aid: Package	Aid package with Pell grants
FEDPACK	Financial aid: Package	Federal aid package by type of aid
FEDLNPAK	Financial aid: Package	Federal loan package by type of loan
EFFORT18	Financial aid: Ratios	Net price after all aid except work study as percent of income
EFFORT3	Financial aid: Ratios	Net price after grants as percent of income
FEDPCT	Financial aid: Ratios	Ratio of federal aid to total aid
FEDGRPCT	Financial aid: Ratios	Ratio of federal grants to total aid

See notes at end of table.



**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
GRTCST	Financial aid: Ratios	Ratio of grant aid to student budget
GRTRATIO	Financial aid: Ratios	Ratio of grants to grants and loans
GRTPCT	Financial aid: Ratios	Ratio of grants to total aid
INSTPCT	Financial aid: Ratios	Ratio of institution aid to total aid
LOANCST2	Financial aid: Ratios	Ratio of loans to student budget (includes PLUS)
LOANPCT2	Financial aid: Ratios	Ratio of loans to total aid (incl PLUS)
SMARTCST	Financial aid: Ratios	Ratio of Pell and SMART grants to student budget
SMTRAT1	Financial aid: Ratios	Ratio of Pell and SMART grants to total aid
SMTRAT2	Financial aid: Ratios	Ratio of Pell and SMART grants to total grants
PELLRAT1	Financial aid: Ratios	Ratio of Pell grant to total aid
PRIVCST	Financial aid: Ratios	Ratio of private loans to student budget
PRIVPCT	Financial aid: Ratios	Ratio of private loans to total aid
PRIVLRAT	Financial aid: Ratios	Ratio of private loans to total loans
STAFFRAT	Financial aid: Ratios	Ratio of Stafford loans to total loans
STAPCT	Financial aid: Ratios	Ratio of state aid to total aid
STGRPCT	Financial aid: Ratios	Ratio of state grants to total aid
WORKPCT	Financial aid: Ratios	Ratio of work study to total aid
INCPCT2	Financial aid: Ratios	Tuition as percent of income
STATEAMT	Financial aid: State	State aid total
STGTAMT	Financial aid: State	State grants total
STLNAMT	Financial aid: State	State loans
STMERIT	Financial aid: State	State merit-only grants
STATNOND	Financial aid: State	State non need & merit grants
STNOND1	Financial aid: State	State non-need grants
STWKAMT	Financial aid: State	State work-study
STATNEED	Financial aid: State	State-need based grants
VOHELP	Financial aid: State	Vocational rehabilitation and training
AIDTYPE	Financial aid: Total	Aid package by type of aid
TOTAID	Financial aid: Total	Aid total amount
TOTNOND3	Financial aid: Total	Institutional non-need and State non-need grants
AIDCST	Financial aid: Total	Ratio of total aid to student budget
TOTAID6	Financial aid: Total	Total aid (excludes parent PLUS and veterans/DOD)
TOTAID7	Financial aid: Total	Total aid (excludes veterans/DOD)
TOTAID4	Financial aid: Total	Total aid (excluding PLUS)
TOTAID5	Financial aid: Total	Total aid excluding work-study
TOTAID8	Financial aid: Total	Total aid without private loans
TOTAID2	Financial aid: Total	Total federal (Title IV), state, & institutional aid
TFEDAID6	Financial aid: Total	Total federal aid (excludes parent PLUS and veterans/DOD)
TFEDAID	Financial aid: Total	Total federal aid (excludes veterans/DOD)
TFEDAID2	Financial aid: Total	Total federal aid (includes veterans/DOD)
TFEDGRT3	Financial aid: Total	Total federal grants, veteran, and tax benefits
FGRTLN	Financial aid: Total	Total federal loans and grants
TITIVAMT	Financial aid: Total	Total federal Title IV aid
TOTGRT	Financial aid: Total	Total grants
TOTGRT2	Financial aid: Total	Total grants and veterans/DOD
TOTGRT3	Financial aid: Total	Total grants, Veterans' benefit, and federal education tax benefits
TOTLOAN	Financial aid: Total	Total loans (excluding PLUS)
TOTLOAN2	Financial aid: Total	Total loans (including PLUS)
TGRTLN	Financial aid: Total	Total loans and grants
TOTLOAN3	Financial aid: Total	Total loans excluding private loans
NEEDAID1	Financial aid: Total	Total need based aid
TNFEDAID	Financial aid: Total	Total non federal aid
TNFEDGRT	Financial aid: Total	Total non federal grants

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
TNFEDLN	Financial aid: Total	Total non federal loans
OTHTYPE	Financial aid: Total	Total other type of aid (PLUS, job training, assistantships, VA)
TOTGRT4	Financial aid: Total	Total state and institutional grants
UNSBLOAN	Financial aid: Total	Total unsubsidized loans (all sources)
HSMY	High school	Date of high school completion
HSCRDAP	High school	Earned Advanced Placement credit in high school
HSCRDANY	High school	Earned any college credits in high school
HSCRDCOL	High school	Earned college credits at a college in high school
HSGPA	High school	Grade point average in high school
HSDEG	High school	High school degree type
HCMATHHI	High school	Highest level of math completed or planned
HCHONORS	High school	Number of honors subjects
HCSCINUM	High school	Number of science courses taken
HCTKBIOL	High school	Took or planned to take biology
HCTKCHEM	High school	Took or planned to take chemistry
HCTKPHYS	High school	Took or planned to take physics
HSTYPE	High school	Type of high school attended
HCYSENGL	High school	Years completed or planned English
HCYSLANG	High school	Years completed or planned foreign languages
HCYSMATH	High school	Years completed or planned math
HCYSSCIE	High school	Years completed or planned science
HCYSSOCI	High school	Years completed or planned social studies
BUDNONAJ	Institution price	Non-tuition expense budget (attendance adjusted)
BUDGETAJ	Institution price	Student budget (attendance adjusted)
TUITION2	Institution price	Tuition and fees paid
INJURIS	Institution price	Tuition jurisdiction (in/out of area)
SAMESTAT	Institution: location	Attend institution in state of legal residence
CC2005S	Institutional characteristics	2005 Carnegie: size and setting
CC2005P	Institutional characteristics	2005 Carnegie: undergraduate instructional program
CC2005U	Institutional characteristics	2005 Carnegie: undergraduate profile
SAMEINST	Institutional characteristics	Bachelor's degree institution same as first postsecondary institution, 2007-08
CC2000B	Institutional characteristics	Carnegie categories (modified 2000) with control
CC2000	Institutional characteristics	Carnegie code (2000) for NPSAS institution
CC2000A	Institutional characteristics	Carnegie code (2000) with control
CC2005B	Institutional characteristics	Carnegie: Basic classification 2005
CC2005C	Institutional characteristics	Carnegie: Basic classification collapsed
CC2005E	Institutional characteristics	Carnegie: enrollment profile
CC2005G	Institutional characteristics	Carnegie: Graduate instructional program
CLOCK	Institutional characteristics	Clock hour or credit hour institution
B2CURTYP	Institutional characteristics	Current enrollment: Institution type, in 2012
LOCALE	Institutional characteristics	Degree of urbanization
ENRLSIZE	Institutional characteristics	Enrollment size at NPSAS institution
EVER2PUB	Institutional characteristics	Ever attended community college
HBCUANY	Institutional characteristics	Ever attended HBCU as of 2007-08
HHE	Institutional characteristics	Ever attended HHE institution as of 2007-08
ATT2PUB	Institutional characteristics	Ever attended public 2-year institution as of 2007-08
B2FSTTYP	Institutional characteristics	First post-baccalaureate enrollment as of 2012: Institution type
I1CTRL	Institutional characteristics	First postsecondary institution control
I1IPEDS	Institutional characteristics	First postsecondary institution IPEDS ID
I1LEVEL	Institutional characteristics	First postsecondary institution level
I1SECT	Institutional characteristics	First postsecondary institution sector
I1PUB2	Institutional characteristics	First postsecondary institution was a public 2-year
FPOFFER	Institutional characteristics	First professional degree program offered

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
GPASCALE	Institutional characteristics	GPA scale
HLOFFER	Institutional characteristics	Highest level of offering at NPSAS institution
OCRHSI	Institutional characteristics	Hispanic serving institution
HBCU	Institutional characteristics	Historical black college indicator
CALSYS	Institutional characteristics	Institution calendar system
AIDCTRL	Institutional characteristics	Institution control (with multiple)
AIDLEVL	Institutional characteristics	Institution level (with multiple)
SECTOR4	Institutional characteristics	Institution sector (4 with multiple)
AIDSECT	Institutional characteristics	Institution sector (with multiple)
SECTOR1	Institutional characteristics	Institution type
CNTLAFFI	Institutional characteristics	Institutional control of affiliation
CONTROL	Institutional characteristics	NPSAS institution control
LEVEL	Institutional characteristics	NPSAS institution level
OBereg	Institutional characteristics	NPSAS institution region
INSTSTAT	Institutional characteristics	NPSAS institution state
SECTOR9	Institutional characteristics	NPSAS institution type
STUDMULT	Institutional characteristics	Number of institutions attended
NUMINST	Institutional characteristics	Number of institutions attended before 2007-08 bachelor's degree
PCTMIN2	Institutional characteristics	Percent enrolled: American Indian or Alaskan Native
PCTMIN3	Institutional characteristics	Percent enrolled: Asian or Pacific Islander
PCTMIN1	Institutional characteristics	Percent enrolled: Black, non Hispanic
PCTMIN4	Institutional characteristics	Percent enrolled: Hispanic
HHEBA	Institutional characteristics	Received 2007-08 bachelor's degree from High Hispanic Enrollment institution
SELECTV2	Institutional characteristics	Selectivity (4-year institutions)
B1TCHAPP	K-12 teaching: Entrance	Applied for K-12 teaching position as of 2009
B2TCHAPP	K-12 teaching: Entrance	Applied for K-12 teaching position as of 2012
NTCONSID	K-12 teaching: Entrance	Considering career in K-12 teaching in 2007-08
B1CONSID	K-12 teaching: Entrance	Considering career in K-12 teaching in 2009
B2CNSD12	K-12 teaching: Entrance	Considering career in K-12 teaching in 2012
NTEVRTCH	K-12 teaching: Entrance	Ever been employed as K-12 teacher as of 2007-08
B1PREP	K-12 teaching: Entrance	Felt prepared in first teaching job as of 2009
B1SUB1	K-12 teaching: Entrance	First taught as aide, short-term sub, or student teacher as of 2009
B1POS1	K-12 teaching: Entrance	First teaching position type as of 2009
B1TEACHEXB	K-12 teaching: Entrance	K-12 teaching experience (alternative) as of 2009
B1TEACHEX	K-12 teaching: Entrance	K-12 teaching experience as of 2009
B2IND01	K-12 teaching: Entrance	Participated in teacher induction/mentor program in first teaching job as of 2012
B1FAM	K-12 teaching: Entrance	Reason did not apply for a teaching position: Personal reasons, as of 2009
B1OTHRSN	K-12 teaching: Entrance	Reason didn't apply for a teaching position: Another reason not listed as of 2009
B1APCOMP	K-12 teaching: Entrance	Reason didn't apply for a teaching position: Application difficult 2009
B1TCHNO	K-12 teaching: Entrance	Reason didn't apply for a teaching position: Did not like teaching, as of 2009
B1MORMON	K-12 teaching: Entrance	Reason didn't apply for a teaching position: Didn't offer enough money, as of 2009
B1MORED	K-12 teaching: Entrance	Reason didn't apply for a teaching position: Needed more education, as of 2009
B1PREF	K-12 teaching: Entrance	Reason didn't apply for a teaching position: Preferred other career as of 2009
B1OFFER	K-12 teaching: Entrance	Received any offers for teaching positions as of 2009
B2OFFER	K-12 teaching: Entrance	Received any offers for teaching positions as of 2012
B2EVRTCH	K-12 teaching: Entrance	Taught at K-12 level as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1LVCAR	K-12 teaching: Exiting	Reasons left teaching: Dissatisfied with teaching or wanted another career, as of 2009
B2LVCAR	K-12 teaching: Exiting	Reasons left teaching: Dissatisfied with teaching or wanted another career, as of 2012
B1LVCOND	K-12 teaching: Exiting	Reasons left teaching: Dissatisfied with workplace conditions, as of 2009
B2LVCOND	K-12 teaching: Exiting	Reasons left teaching: Dissatisfied with workplace conditions, as of 2012
B1LVSAL	K-12 teaching: Exiting	Reasons left teaching: Inadequate salary and/or benefits, as of 2009
B2LVSAL	K-12 teaching: Exiting	Reasons left teaching: Inadequate salary and/or benefits, as of 2012
B1LVTRSF	K-12 teaching: Exiting	Reasons left teaching: Laid off or involuntarily transferred, as of 2009
B2LVTRSF	K-12 teaching: Exiting	Reasons left teaching: Laid off or involuntarily transferred, as of 2012
B1LVOTH	K-12 teaching: Exiting	Reasons left teaching: Other reasons, as of 2009
B2LVOTH	K-12 teaching: Exiting	Reasons left teaching: Other reasons, as of 2012
B1LVPERS	K-12 teaching: Exiting	Reasons left teaching: Personal reasons, as of 2009
B2LVPERS	K-12 teaching: Exiting	Reasons left teaching: Personal reasons, as of 2012
B2LVSCHL	K-12 teaching: Exiting	Reasons left teaching: Return to school, as of 2012
B1MOVE	K-12 teaching: Expectations	Plan to move into non-teaching job in K-12 education as of 2009
B1PLNTCH	K-12 teaching: Expectations	Plan to teach in K-12 classroom in future as of 2009
B2INLFIN	K-12 teaching: Expectations	Teaching influences: Financial compensation, as of 2012
B2INFLLOAN	K-12 teaching: Expectations	Teaching influences: Loan forgiveness or other financial incentives, as of 2012
B2INFLCONT	K-12 teaching: Expectations	Teaching influences: Opportunity to contribute to society, as of 2012
B2INFLADV	K-12 teaching: Expectations	Teaching influences: Possibilities for career advancement, as of 2012
B2INFLPRES	K-12 teaching: Expectations	Teaching influences: Prestige of occupation, as of 2012
B2INFLACCT	K-12 teaching: Expectations	Teaching influences: Teacher accountability, as of 2012
B2INFLWKCD	K-12 teaching: Expectations	Teaching influences: Teachers' working conditions, as of 2012
B2INFLKIDS	K-12 teaching: Expectations	Teaching influences: Working with kids, as of 2012
B1HIGH09	K-12 teaching: Experiences	Current K-12 teaching job, highest grade level school offered in 2009
B1HIGR09	K-12 teaching: Experiences	Current K-12 teaching job, highest grade level taught in 2009
B1LOW09	K-12 teaching: Experiences	Current K-12 teaching job, lowest grade level school offered in 2009
B1LOGR09	K-12 teaching: Experiences	Current K-12 teaching job, lowest grade level taught in 2009
B1FRPL09	K-12 teaching: Experiences	Current K-12 teaching job, percent free or reduced-price lunch in 2009
B2FRPL12	K-12 teaching: Experiences	Current K-12 teaching job, percent free or reduced-price lunch in 2012
B1PMIN09	K-12 teaching: Experiences	Current K-12 teaching job, percent minority enrollment in 2009
B1SIZE09	K-12 teaching: Experiences	Current K-12 teaching job, school enrollment size (matches B&B:01) in 2009
B1LOC09	K-12 teaching: Experiences	Current K-12 teaching job, school locale in 2009
B2LOC12	K-12 teaching: Experiences	Current K-12 teaching job, school locale in 2012
B1FOR09	K-12 teaching: Experiences	Current K-12 teaching job, school was foreign in 2009
B1ST09	K-12 teaching: Experiences	Current K-12 teaching job, state in 2009
B1TFP09	K-12 teaching: Experiences	Current K-12 teaching job, taught full time or part time in 2009
B1ENR09	K-12 teaching: Experiences	Current K-12 teaching job, total school K-12 enrollment in 2009
B1AYP09	K-12 teaching: Experiences	Current school AYP status in 2009
B2AYP12	K-12 teaching: Experiences	Current school AYP status in 2012
B1LEV09	K-12 teaching: Experiences	Current school level in 2009
B2LEV12	K-12 teaching: Experiences	Current school level in 2012
B1PU09	K-12 teaching: Experiences	Current school sector (public/private) in 2009
B2PU12	K-12 teaching: Experiences	Current school sector (public/private) in 2012
B1TTL09	K-12 teaching: Experiences	Current school Title I eligible in 2009
B1TYP09	K-12 teaching: Experiences	Current school type in 2009
B1SUB09	K-12 teaching: Experiences	Currently teaching as aide, short-term sub, or student teacher in 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1PRSB1	K-12 teaching: Experiences	First job, felt prepared to teach subjects as of 2009
B1HIGH1	K-12 teaching: Experiences	First job, highest grade level school offered as of 2009
B1HIGR1	K-12 teaching: Experiences	First job, highest grade level taught as of 2009
B1LOW1	K-12 teaching: Experiences	First job, lowest grade level school offered as of 2009
B1LOGR1	K-12 teaching: Experiences	First job, lowest grade level taught as of 2009
B1FRPL1	K-12 teaching: Experiences	First job, percent free or reduced-price lunch as of 2009
B1PMIN1	K-12 teaching: Experiences	First job, percent minority enrollment as of 2009
B1AYP1	K-12 teaching: Experiences	First job, school AYP status as of 2009
B1SIZE1	K-12 teaching: Experiences	First job, school enrollment size (matches B&B:01) as of 2009
B1LEV1	K-12 teaching: Experiences	First job, school level as of 2009
B1LOC1	K-12 teaching: Experiences	First job, school locale as of 2009
B1PUPR1	K-12 teaching: Experiences	First job, school sector (public/private) as of 2009
B1TYP1	K-12 teaching: Experiences	First job, school type as of 2009
B1FOR1	K-12 teaching: Experiences	First job, school was foreign as of 2009
B1ST1	K-12 teaching: Experiences	First job, state as of 2009
B1TFP1	K-12 teaching: Experiences	First job, taught full time or part time as of 2009
B1ENR1	K-12 teaching: Experiences	First job, total school K-12 enrollment as of 2009
B1DSCP01	K-12 teaching: Experiences	First teaching job: Felt prepared to manage classroom as of 2009
B1TCH01	K-12 teaching: Experiences	First teaching job: Felt prepared to teach subject matter as of 2009
B1INVR01	K-12 teaching: Experiences	First teaching job: Felt prepared to use instructional methods as of 2009
B1DISC01	K-12 teaching: Experiences	First teaching job: Received help disciplining students as of 2009
B1HELP	K-12 teaching: Experiences	First teaching job: Received help from school or district as of 2009
B1MTHD01	K-12 teaching: Experiences	First teaching job: Received help selecting curriculum 2009
B1CMNT01	K-12 teaching: Experiences	First teaching job: Received help working with parents and community as of 2009
B2POS1	K-12 teaching: Experiences	First teaching position type as of 2012
NTPOSITI	K-12 teaching: Experiences	Had been itinerant K-12 teacher as of 2007-08
NTPOSSTU	K-12 teaching: Experiences	Had been K-12 student teacher as of 2007-08
NTPOSSPP	K-12 teaching: Experiences	Had been K-12 support teacher as of 2007-08
NTPOSAID	K-12 teaching: Experiences	Had been K-12 teacher's aide as of 2007-08
NTPOSLSU	K-12 teaching: Experiences	Had been long-term K-12 substitute teacher as of 2007-08
NTPOSREG	K-12 teaching: Experiences	Had been regular K-12 teacher as of 2007-08
NTPOSSSU	K-12 teaching: Experiences	Had been short-term K-12 substitute teacher as of 2007-08
B2TEACHEX	K-12 teaching: Experiences	K-12 teaching experience as of 2012
B1POS09	K-12 teaching: Experiences	Most recent teaching position type as of 2009
B2POS12	K-12 teaching: Experiences	Most recent teaching position type as of 2012
B2TCHMO	K-12 teaching: Experiences	Number of months taught as of 2012
B1TJBNUM	K-12 teaching: Experiences	Number of teaching positions held as of 2009
B1IND01	K-12 teaching: Experiences	Participated in formal teacher induction/mentor program in first teaching job as of 2009
B1INT01	K-12 teaching: Experiences	Participated in teacher internship program in first teaching job as of 2009
B1LNPRT	K-12 teaching: Experiences	Participated in teacher loan forgiveness program 2009
B2TCHRTAT	K-12 teaching: Experiences	Ratio of months taught to all months employed
B1EVRTCH	K-12 teaching: Experiences	Taught at K-12 level since completing 2007-08 bachelor's degree, as of 2009
B2EVTCHTP	K-12 teaching: Experiences	Taught since bachelor's degree, teacher type, as of 2012
B1ADMSUP	K-12 teaching: Experiences	Teacher satisfaction: Administrative support as of 2009
B1CLSIZE	K-12 teaching: Experiences	Teacher satisfaction: Class size, as of 2009
B1TCHEFF	K-12 teaching: Experiences	Teacher satisfaction: Effectiveness as a teacher, as of 2009
B1PNTSUP	K-12 teaching: Experiences	Teacher satisfaction: Parent support, as of 2009
B1SOCSUP	K-12 teaching: Experiences	Teacher satisfaction: Relationships with colleagues and supervisors as of 2009
B1STDISP	K-12 teaching: Experiences	Teacher satisfaction: Student discipline as of 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2TCHR12	K-12 teaching: Experiences	Teaching status as of 2012
B1JBTP05	K-12 teaching: Experiences	Type of fifth K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1JBTP01	K-12 teaching: Experiences	Type of first K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1JBTP04	K-12 teaching: Experiences	Type of fourth K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1JBTP02	K-12 teaching: Experiences	Type of second K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1JBTP07	K-12 teaching: Experiences	Type of seventh K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1JBTP06	K-12 teaching: Experiences	Type of sixth K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1JBTP03	K-12 teaching: Experiences	Type of third K-12 teaching position after 2007-08 bachelor's degree, as of 2009
B1LTSUB	K-12 teaching: Experiences	Worked as a long-term substitute as of 2009
B1STSUB	K-12 teaching: Experiences	Worked as a short-term substitute as of 2009
B1TCHAD	K-12 teaching: Experiences	Worked as a teacher's aide as of 2009
B1ITNTCH	K-12 teaching: Experiences	Worked as an itinerant teacher as of 2009
B2OHTCH	K-12 teaching: Experiences	Worked as an other teacher as of 2012
B1OHTCH	K-12 teaching: Experiences	Worked as an other type of teacher as of 2009
B1JBCR01	K-12 teaching: Experiences	Working in K-12 teaching position 1 in 2009
B1JBCR02	K-12 teaching: Experiences	Working in K-12 teaching position 2 in 2009
B1JBCR03	K-12 teaching: Experiences	Working in K-12 teaching position 3 in 2009
B1JBCR04	K-12 teaching: Experiences	Working in K-12 teaching position 4 in 2009
B1JBCR05	K-12 teaching: Experiences	Working in K-12 teaching position 5 in 2009
B1JBCR06	K-12 teaching: Experiences	Working in K-12 teaching position 6 in 2009
B1JBCR07	K-12 teaching: Experiences	Working in K-12 teaching position 7 in 2009
NTPREP1	K-12 teaching: Qualifications	Applied to K-12 teacher education program as of 2007-08
B1TCHCIP	K-12 teaching: Qualifications	Bachelor's degree major in teaching as of 2009
B2EVRCERT	K-12 teaching: Qualifications	Certified to teach as of 2012
B1CURCRT	K-12 teaching: Qualifications	Certified to teach at K-12 level as of 2009
NTPREP6	K-12 teaching: Qualifications	Completed K-12 student teaching assignment as of 2007-08
B2STCOMP	K-12 teaching: Qualifications	Completed student teaching or practicum as of 2012
B1STCOMP	K-12 teaching: Qualifications	Completed student teaching or teacher practicum as of 2009
B1CART	K-12 teaching: Qualifications	Content area certification: Arts and music, as of 2009
B1CGENA	K-12 teaching: Qualifications	Content area certification: Elementary education, as of 2009
B1CENGL	K-12 teaching: Qualifications	Content area certification: English or language arts, as of 2009
B1CESL	K-12 teaching: Qualifications	Content area certification: ESL, as of 2009
B1CFLNG	K-12 teaching: Qualifications	Content area certification: Foreign languages, as of 2009
B1CHELTH	K-12 teaching: Qualifications	Content area certification: Health/physical education, as of 2009
B1CMATH	K-12 teaching: Qualifications	Content area certification: Math or computer science, as of 2009
B1MISC	K-12 teaching: Qualifications	Content area certification: Miscellaneous, as of 2009
B1CSCIEN	K-12 teaching: Qualifications	Content area certification: Natural sciences, as of 2009
B1COTHER	K-12 teaching: Qualifications	Content area certification: Other, as of 2009
B1CGENB	K-12 teaching: Qualifications	Content area certification: Secondary education, as of 2009
B1CSOSCI	K-12 teaching: Qualifications	Content area certification: Social sciences, as of 2009
B1CSPCED	K-12 teaching: Qualifications	Content area certification: Special education, as of 2009
B1CVOCTC	K-12 teaching: Qualifications	Content area certification: Vocational/career/technical education, as of 2009
B1CRTMY	K-12 teaching: Qualifications	Date first certified to teach as of 2009
NTPREP3	K-12 teaching: Qualifications	Entered K-12 teacher education program as of 2007-08
NTPREP7	K-12 teaching: Qualifications	Had applied to non-traditional K-12 teacher program as of 2007-08
NTPREP5	K-12 teaching: Qualifications	Had taken exam for teaching certificate/license as of 2007-08
B1CRTCRS	K-12 teaching: Qualifications	Had taken or was taking K-12 teacher certification course as of 2009
NTPREP2	K-12 teaching: Qualifications	Had taken Praxis teaching exam as of 2007-08

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
NTPREP4	K-12 teaching: Qualifications	Had taken/was taking K-12 teacher certification course as of 2007-08
B2PREPAR	K-12 teaching: Qualifications	Prepared for a K-12 teaching as of 2012
B1PREPAR	K-12 teaching: Qualifications	Prepared for a teaching career at the K-12 level as of 2009
B1PIPLN	K-12 teaching: Qualifications	Teacher pipeline status as of 2009
B2CRTCRS	K-12 teaching: Qualifications	Took courses toward certification as of 2012
B1CRTTYP	K-12 teaching: Qualifications	Type of teacher certification as of 2009
B1TCERT	K-12 teaching: Qualifications	Whether certified in subjects taught in 2009
B1CERT	K-12 teaching: Qualifications	Whether certified to teach K-12 in 2009
B2CERT	K-12 teaching: Qualifications	Whether certified to teach K-12 in 2012
B1PRSB09	K-12 teaching: Subject taught	Current K-12 teaching job, felt prepared to teach subjects in 2009
B1STEM09	K-12 teaching: Subject taught	Currently teach a STEM subject in 2009
B1ART09	K-12 teaching: Subject taught	Currently teach arts/music in 2009
B1EE09	K-12 teaching: Subject taught	Currently teach elementary education in 2009
B1ENG09	K-12 teaching: Subject taught	Currently teach English/language arts in 2009
B1ESL09	K-12 teaching: Subject taught	Currently teach ESL in 2009
B1FL09	K-12 teaching: Subject taught	Currently teach foreign languages in 2009
B1HPE09	K-12 teaching: Subject taught	Currently teach health/physical education in 2009
B1MAT09	K-12 teaching: Subject taught	Currently teach math/computer science in 2009
B1MISC09	K-12 teaching: Subject taught	Currently teach miscellaneous subjects in 2009
B1OTH09	K-12 teaching: Subject taught	Currently teach other unspecified subject in 2009
B1SCI09	K-12 teaching: Subject taught	Currently teach science in 2009
B1SEC09	K-12 teaching: Subject taught	Currently teach secondary education in 2009
B1SOC09	K-12 teaching: Subject taught	Currently teach social sciences in 2009
B1SED09	K-12 teaching: Subject taught	Currently teach special education in 2009
B1VOC09	K-12 teaching: Subject taught	Currently teach vocational/career/technical in 2009
B1ART1	K-12 teaching: Subject taught	First job, taught arts/music as of 2009
B1EE1	K-12 teaching: Subject taught	First job, taught elementary education as of 2009
B1ENG1	K-12 teaching: Subject taught	First job, taught English/language arts as of 2009
B1ESL1	K-12 teaching: Subject taught	First job, taught ESL as of 2009
B1FL1	K-12 teaching: Subject taught	First job, taught foreign languages as of 2009
B1HPE1	K-12 teaching: Subject taught	First job, taught health/physical education 2009
B1MAT1	K-12 teaching: Subject taught	First job, taught math/computer science as of 2009
B1MISC1	K-12 teaching: Subject taught	First job, taught miscellaneous subjects as of 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1OTH1	K-12 teaching: Subject taught	First job, taught other unspecified subject as of 2009
B1SCI1	K-12 teaching: Subject taught	First job, taught science as of 2009
B1SEC1	K-12 teaching: Subject taught	First job, taught secondary education as of 2009
B1SOC1	K-12 teaching: Subject taught	First job, taught social sciences as of 2009
B1SED1	K-12 teaching: Subject taught	First job, taught special education as of 2009
B1VOC1	K-12 teaching: Subject taught	First job, taught vocational/career/technical as of 2009
B1ART	K-12 teaching: Subject taught	Taught arts/music as of 2009
B2ART	K-12 teaching: Subject taught	Taught arts/music as of 2012
B2ELED	K-12 teaching: Subject taught	Taught elementary education as of 2012
B1ELED	K-12 teaching: Subject taught	Taught elementary education since bachelor's as of 2009
B2ENG	K-12 teaching: Subject taught	Taught English/language arts as of 2012
B1ENG	K-12 teaching: Subject taught	Taught English/language arts since bachelor's as of 2009
B1ESL	K-12 teaching: Subject taught	Taught ESL since bachelor's as of 2009
B2ESL	K-12 teaching: Subject taught	Taught ESL since bachelor's degree as of 2012
B1FLN	K-12 teaching: Subject taught	Taught foreign language as of 2009
B2FLN	K-12 teaching: Subject taught	Taught foreign language as of 2012
B2HPE	K-12 teaching: Subject taught	Taught health or physical education as of 2012
B1HPE	K-12 teaching: Subject taught	Taught health or physical education since bachelor's as of 2009
B1MATH	K-12 teaching: Subject taught	Taught math or computer science as of 2009
B2MATH	K-12 teaching: Subject taught	Taught math or computer science as of 2012
B1MISC	K-12 teaching: Subject taught	Taught miscellaneous subjects as of 2009
B2MISC	K-12 teaching: Subject taught	Taught miscellaneous subjects as of 2012
B1SCI	K-12 teaching: Subject taught	Taught natural sciences as of 2009
B2SCI	K-12 teaching: Subject taught	Taught natural sciences as of 2012
B1OTH	K-12 teaching: Subject taught	Taught other subjects as of 2009
B2OTH	K-12 teaching: Subject taught	Taught other subjects as of 2012
B1SECD	K-12 teaching: Subject taught	Taught secondary education as of 2009
B2SECD	K-12 teaching: Subject taught	Taught secondary education as of 2012
B1SOC	K-12 teaching: Subject taught	Taught social sciences as of 2009
B2SOC	K-12 teaching: Subject taught	Taught social sciences as of 2012

See notes at end of table.



**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1SPECED	K-12 teaching: Subject taught	Taught special education as of 2009
B2SPECED	K-12 teaching: Subject taught	Taught special education as of 2012
B1VOC	K-12 teaching: Subject taught	Taught vocational/career/technical education as of 2009
B2VOC	K-12 teaching: Subject taught	Taught vocational/career/technical education as of 2012
B1LANGS	Language	Best known second language as of 2009
B1ENGL	Language	English as native language in 2009
B2ENGL	Language	English as native language in 2012
B1LNGPST	Language	Frequency of non-English language spoken growing up, as of 2009
B1OTLANG	Language	Knew non-English language as of 2009
B1LNGCLS	Language	Last time non-English language class was taken as of 2009
B1NATIVE	Language	Native language other than English in 2009
B1NOLNG	Language	No second best language as of 2009
B1LNUND	Language	Proficiency in understanding non-English language speech in 2009
B1LNREAD	Language	Reading proficiency of non-English language in 2009
B1LNGCUR	Language	Regular interaction with others in non-English language in 2009
B1LNSPEK	Language	Speaking proficiency of non-English language in 2009
B1LGCAR	Language	Use non-English language in current career in 2009
B1LNGPLN	Language	Use of non-English language in career in 2009
B1LNWRIT	Language	Writing proficiency of non-English language in 2009
B2CAPP	Postbaccalaureate education	Applied for enrollment in a degree program since bachelor's degree as of 2012
NGGRDAPP	Postbaccalaureate education	Applied to graduate school in 2007-08
B2CNDGCWK	Postbaccalaureate education	Attended for non-degree post-baccalaureate courses as of 2012
B2CURDST	Postbaccalaureate education	Current enrollment: Date first attended, in 2012
B2CURDEG	Postbaccalaureate education	Current enrollment: Degree type, in 2012
B2CURENRL	Postbaccalaureate education	Currently enrolled in 2012
B1G1FSDT	Postbaccalaureate education	Date of first post-baccalaureate enrollment as of 2009
B2CPSTGRD	Postbaccalaureate education	Enrolled in additional degree program since bachelor's degree as of 2012
B1ENRST	Postbaccalaureate education	Enrollment in degree program in 2009
B1PBENST	Postbaccalaureate education	Enrollment intensity after bachelor's degree, as of 2009
B1ENIN09	Postbaccalaureate education	Enrollment intensity in 2009
B2ENIN12	Postbaccalaureate education	Enrollment intensity in 2012
B2BAEV	Postbaccalaureate education	Ever enrolled in additional bachelor's degree program as of 2012
B1DCTR09	Postbaccalaureate education	Ever enrolled in doctoral degree program as of 2009
B2DCTR12	Postbaccalaureate education	Ever enrolled in doctoral degree program as of 2012
B1MSTR09	Postbaccalaureate education	Ever enrolled in master's degree program as of 2009
B2MSTR12	Postbaccalaureate education	Ever enrolled in master's degree program as of 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B2AAEV	Postbaccalaureate education	Ever enrolled in post-baccalaureate associate's degree program as of 2012
B2PBCEV	Postbaccalaureate education	Ever enrolled in post-baccalaureate certificate program after 2007-08 bachelor's degree as of 2012
B2CEREV	Postbaccalaureate education	Ever enrolled in post-baccalaureate certificate program as of 2012
B2PMCEV	Postbaccalaureate education	Ever enrolled in post-master's certificate program as of 2012
B2PROEV	Postbaccalaureate education	Ever enrolled in professional degree program as of 2012
B1GRMJ09	Postbaccalaureate education	Field of study for degree program enrollment in 2009
B1GR1MJ	Postbaccalaureate education	Field of study for first post-baccalaureate degree enrollment, as of 2009
B2FSTDEG	Postbaccalaureate education	First post-baccalaureate enrollment as of 2012: Degree type
B2FSTINT	Postbaccalaureate education	First post-baccalaureate enrollment as of 2012: Enrollment intensity
B2FSTDST	Postbaccalaureate education	First post-baccalaureate enrollment: Date first attended, as of 2012
B2FSTDLT	Postbaccalaureate education	First post-baccalaureate enrollment: Date last attended, as of 2012
B1GR1DG	Postbaccalaureate education	First post-baccalaureate enrollment: Degree type, as of 2009
B1GR1CON	Postbaccalaureate education	First post-baccalaureate enrollment: Institution control, as of 2009
B1GR1LEV	Postbaccalaureate education	First post-baccalaureate enrollment: Institution level, as of 2009
B1GR1SEC	Postbaccalaureate education	First post-baccalaureate enrollment: Institution sector, as of 2009
B2HIEDLT	Postbaccalaureate education	Highest post-baccalaureate enrollment as of 2012: Date last attended
B2HIEINT	Postbaccalaureate education	Highest post-baccalaureate enrollment as of 2012: Enrollment intensity
B2HIETYP	Postbaccalaureate education	Highest post-baccalaureate enrollment as of 2012: Institution sector
B2HIEDST	Postbaccalaureate education	Highest post-baccalaureate enrollment: Date first attended, as of 2012
B1HIENR	Postbaccalaureate education	Highest post-baccalaureate enrollment: Degree type, as of 2009
B2HIENR	Postbaccalaureate education	Highest post-baccalaureate enrollment: Degree type, as of 2012
B1HIMAJ	Postbaccalaureate education	Highest post-baccalaureate enrollment: Field of study, as of 2009
B2HIEMAJ	Postbaccalaureate education	Highest post-baccalaureate enrollment: Field of study, as of 2012
B2CEFUT	Postbaccalaureate education	Likelihood of enrolling in an undergraduate or graduate program as of 2012
CUR_POSTBA	Postbaccalaureate education	Loop number of current degree enrolled in 2012
FIRST_POSTBA	Postbaccalaureate education	Loop number of first degree enrolled since bachelor's degree as of 2012
HI_POSTCMP	Postbaccalaureate education	Loop number of highest degree completed since bachelor's degree as of 2012
HI_POSTENR	Postbaccalaureate education	Loop number of highest degree enrolled since bachelor's degree as of 2012
BA_ENR	Postbaccalaureate education	Months between bachelor's degree award date and first post-bachelor's enrollment
B1GRFUTR	Postbaccalaureate education	Plans for future post-baccalaureate enrollment in 2009

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
NGGRE	Postbaccalaureate education	Took graduate admissions exams in 2007-08
B1GRE	Postbaccalaureate education	Took graduate or professional entrance exam as of 2009
B2CEXAM	Postbaccalaureate education	Took graduate or professional entrance exam as of 2012
COMSERVA	Public service participation	Community service type: Fundraising
COMSERVB	Public service participation	Community service type: Health services
COMSERVC	Public service participation	Community service type: Homeless shelter or soup kitchen
COMSERVD	Public service participation	Community service type: Neighborhood improvement
COMSERVE	Public service participation	Community service type: Non education related work with kids
COMSERVX	Public service participation	Community service type: Other
COMSERVF	Public service participation	Community service type: Service to church
COMSERVG	Public service participation	Community service type: Tutoring or education-related
COMNUM	Public service participation	Community service: Number of activities
COMHOUR	Public service participation	Community service: Number of hours volunteered per month
COMONE	Public service participation	Community service: One time event
COMREQ	Public service participation	Community service: Required or part of program
COMSERV	Public service participation	Community service: Volunteered in last 12 months
B1EVRVT	Public service participation	Ever voted as of 2009
B1VLFUT	Public service participation	Likely to continue volunteering in next 12 months, as of 2009
B1MILIT	Public service participation	Military status in 2009
B2FMILITB	Public service participation	Military status in 2012: Active duty
B2FMILITD	Public service participation	Military status in 2012: National guard
B2FMILITC	Public service participation	Military status in 2012: Reserves
B2FMILITA	Public service participation	Military status in 2012: Veteran
MILTYPE	Public service participation	Military type
B1VYHRS	Public service participation	Number of hours volunteered in 2009
B2VYHRS	Public service participation	Number of hours volunteered in 2012
B1VOTE	Public service participation	Registered to vote as of 2009
B2FMILSERV	Public service participation	Served in the military as of 2012
VETERAN	Public service participation	Veteran status
B1VLONE	Public service participation	Volunteered : One-time event, in 2009
B1COMSRV	Public service participation	Volunteered in last 12 months as of 2009
B2FCOMSRV	Public service participation	Volunteered in last 12 months as of 2012
B1VLFUND	Public service participation	Volunteered: Fundraising, in 2009
B1VLHEAL	Public service participation	Volunteered: Health services, in 2009
B1VLSOUP	Public service participation	Volunteered: Homeless shelter or soup kitchen, in 2009
B1VLNBRH	Public service participation	Volunteered: Neighborhood improvement, in 2009
B1VLKIDS	Public service participation	Volunteered: Non-education-related work with kids, in 2009
B1VLOTH	Public service participation	Volunteered: Other type of service, in 2009
B1VLCHUR	Public service participation	Volunteered: Service to a church, in 2009
B1VLNON	Public service participation	Volunteered: Service to nonprofit organizations, in 2009
B1VLCOM	Public service participation	Volunteered: Service to the community, in 2009
B1VLTUT	Public service participation	Volunteered: Tutoring or education-related work, in 2009
VOTEEVER	Public service participation	Vote: Ever voted
VOTEREG	Public service participation	Vote: Registered to vote
LOCALEST	Residence	Degree of urbanization of student's address
B2DISTINSTR	Residence	Distance between residence in 2012 and bachelor's degree institution
DISTHOME	Residence	Distance from NPSAS school to home
B1HHCOMP	Residence	Household composition in 2009
B1ALONE	Residence	Living alone in 2009
B2AALONE	Residence	Living alone in 2012

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
B1CRELOC	Residence	Living more than 50 miles from bachelor's degree institution in 2009
B1HRELOC	Residence	Living more than 50 miles from high school in 2009
B1DPNTS	Residence	Living with children or dependents in 2009
B2ADPNTS	Residence	Living with children or dependents in 2012
B1PARIL	Residence	Living with parents or in-laws in 2009
B2APARIL	Residence	Living with parents or in-laws in 2012
B1HOTH	Residence	Living with someone not listed in 2009
B2AHOTH	Residence	Living with someone not listed in 2012
B1SPODP	Residence	Living with spouse or domestic partner in 2009
B2ASPODP	Residence	Living with spouse or domestic partner in 2012
B1HOUSE	Residence	Own home and/or pay rent in 2009
B2SMSTER	Residence	Primary job and residence in 2012 are in same state as bachelor's degree institution state
B1REGION	Residence	Region of residence in 2009
B2SMSTR	Residence	Residence in 2012 is in same state as bachelor's degree institution state
B1SMSTAT	Residence	Residence in bachelor's degree institution state in 2009
LOCALRES	Residence	Residence while enrolled
STUSTATE	Residence	State of legal residence
B1STRES	Residence	State of legal residence in 2009
B2STCDR	Residence	State of residence: 2012
B2RESZIP	Residence	Zip code of residence: 2012
B1CMPDAT	Survey sample	Date awarded bachelor's degree from NPSAS
B1SUMFLG	Survey sample	Interview completion flag for B&B:08/09
B1CMPMDE	Survey sample	Interview completion mode
B2ADMSUP	Teacher: Satisfaction	Teacher satisfaction: Administrative support, as of 2012
B2CLSIZE	Teacher: Satisfaction	Teacher satisfaction: Class size, as of 2012
B2TCHEFF	Teacher: Satisfaction	Teacher satisfaction: Effectiveness as a teacher, as of 2012
B2SOCSUP	Teacher: Satisfaction	Teacher satisfaction: Relationships with colleagues and supervisors, as of 2012
B2STDISP	Teacher: Satisfaction	Teacher satisfaction: Student discipline and behavior, as of 2012
B2PNTSUP	Teacher: Satisfaction	Teacher satisfaction: Support from parents, as of 2012
QETCSRPT	Transcript	Transcript: Number of repeated courses
QETOTR	Transcript	Transcript: Remedial courses: # taken
QFMJSTEM	Transcript	Transcript: STEM major field of study indicator
QESTMERN	Transcript	Transcript: STEM: credits earned
QESTMGPA	Transcript	Transcript: STEM: GPA
RTRPTID	Transcript	Transcript: Transcript ID
QFNPBAMY	Transcript: Awards	Transcript: Date bachelor's degree received at NPSAS institution
QDFA2BCH	Transcript: Awards	Transcript: Elapsed time from NPSAS institution entry to NPSAS bachelor's degree
QFHDGHON	Transcript: Awards	Transcript: NPSAS Bachelor's degree was with honors
QEALBATT	Transcript: Credits Attempted by Subject Area	Transcript: Advanced laboratory science: credits attempted
QECLCATT	Transcript: Credits Attempted by Subject Area	Transcript: Calculus/advanced math: credits attempted
QEMATATT	Transcript: Credits Attempted by Subject Area	Transcript: College-level mathematics: credits attempted
QECSCATT	Transcript: Credits Attempted by Subject Area	Transcript: Computer science: credits attempted
QEEDUATT	Transcript: Credits Attempted by Subject Area	Transcript: Education excluding student teaching: credits attempted
QEEGNATT	Transcript: Credits Attempted by Subject Area	Transcript: Engineering: credits attempted
QEFLATT	Transcript: Credits Attempted by Subject Area	Transcript: Foreign language: credits attempted

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
QEHISERN	Transcript: Credits Attempted by Subject Area	Transcript: History: credits earned
QELABATT	Transcript: Credits Attempted by Subject Area	Transcript: Introductory laboratory science: credits attempted
QEBIOATT	Transcript: Credits Attempted by Subject Area	Transcript: Life sciences: credits attempted
QENSEATT	Transcript: Credits Attempted by Subject Area	Transcript: Non-science & engineering: credits attempted
QENSTATT	Transcript: Credits Attempted by Subject Area	Transcript: Non-STEM: credits attempted
QEPSCATT	Transcript: Credits Attempted by Subject Area	Transcript: Physical science: credits attempted
QESERATT	Transcript: Credits Attempted by Subject Area	Transcript: Science & engineering: credits attempted
QESCIATT	Transcript: Credits Attempted by Subject Area	Transcript: Science: credits attempted
QESTAATT	Transcript: Credits Attempted by Subject Area	Transcript: Statistics courses in all departments: credits attempted
QESTMATT	Transcript: Credits Attempted by Subject Area	Transcript: STEM: credits attempted
QESTTATT	Transcript: Credits Attempted by Subject Area	Transcript: Student teaching: credits attempted
QEPSEATT	Transcript: Credits Attempted by Timeframe	Transcript: College career: credits attempted
QESUMATT	Transcript: Credits Attempted by Timeframe	Transcript: Summer terms: credits attempted
QESABERN	Transcript: Credits Earned by Institution	Transcript: Study abroad: credits earned
QESABRAT	Transcript: Credits Earned by Institution	Transcript: Study abroad: ratio of credits earned to total
QEALBERN	Transcript: Credits Earned by Subject Area	Transcript: Advanced laboratory science: credits earned
QEAWCERN	Transcript: Credits Earned by Subject Area	Transcript: Advanced western culture and society: credits earned
QEHLTERN	Transcript: Credits Earned by Subject Area	Transcript: Allied health: credits earned
QEBWCERN	Transcript: Credits Earned by Subject Area	Transcript: Basic western culture and society: credits earned
QEPMAERN	Transcript: Credits Earned by Subject Area	Transcript: Below college-level mathematics: credits earned
QEBUSERN	Transcript: Credits Earned by Subject Area	Transcript: Business: credits earned
QECLCERN	Transcript: Credits Earned by Subject Area	Transcript: Calculus/advanced math: credits earned
QECHLERN	Transcript: Credits Earned by Subject Area	Transcript: Child, family, and youth studies: credits earned
QEMATERN	Transcript: Credits Earned by Subject Area	Transcript: College-level mathematics: credits earned
QECSCERN	Transcript: Credits Earned by Subject Area	Transcript: Computer science: credits earned
QEECNERN	Transcript: Credits Earned by Subject Area	Transcript: Economics: credits earned
QEEDUERN	Transcript: Credits Earned by Subject Area	Transcript: Education excluding student teaching: credits earned
QEEGTERN	Transcript: Credits Earned by Subject Area	Transcript: Engineering technologies: credits earned
QEEGNERN	Transcript: Credits Earned by Subject Area	Transcript: Engineering: credits earned

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
QEENVERN	Transcript: Credits Earned by Subject Area	Transcript: Environment and natural resources: credits earned
QEETHERN	Transcript: Credits Earned by Subject Area	Transcript: Ethics: credits earned
QEFARERN	Transcript: Credits Earned by Subject Area	Transcript: Fine arts, incl graphic arts & design: credits earned
QEFLERN	Transcript: Credits Earned by Subject Area	Transcript: Foreign language: credits earned
QEHUMERN	Transcript: Credits Earned by Subject Area	Transcript: Humanities: credits earned
QEITLERN	Transcript: Credits Earned by Subject Area	Transcript: Int'l studies excl arts/humanities/history: credits earned
QELABERN	Transcript: Credits Earned by Subject Area	Transcript: Introductory laboratory science: credits earned
QEBIOERN	Transcript: Credits Earned by Subject Area	Transcript: Life sciences: credits earned
QEMDAERN	Transcript: Credits Earned by Subject Area	Transcript: Media studies: credits earned
QEMINERN	Transcript: Credits Earned by Subject Area	Transcript: Minority/ethnic/women's/cultural studies: credits earned
QEMCCFAC	Transcript: Credits Earned by Subject Area	Transcript: Missing course code for any awarded credits
QENSEERN	Transcript: Credits Earned by Subject Area	Transcript: Non-science & engineering: credits earned
QENSTERN	Transcript: Credits Earned by Subject Area	Transcript: Non-STEM: credits earned
QENWCERN	Transcript: Credits Earned by Subject Area	Transcript: Non-western culture and society: credits earned
QENRSERN	Transcript: Credits Earned by Subject Area	Transcript: Nursing: credits earned
QEPSCERN	Transcript: Credits Earned by Subject Area	Transcript: Physical science: credits earned
QEPSYERN	Transcript: Credits Earned by Subject Area	Transcript: Psychology: credits earned
QERELERN	Transcript: Credits Earned by Subject Area	Transcript: Religious studies and theology: credits earned
QESERERN	Transcript: Credits Earned by Subject Area	Transcript: Science & engineering: credits earned
QESCIERN	Transcript: Credits Earned by Subject Area	Transcript: Science: credits earned
QESSCERN	Transcript: Credits Earned by Subject Area	Transcript: Social sciences: credits earned
QESPTERN	Transcript: Credits Earned by Subject Area	Transcript: Sports/PE/recreation: credits earned
QESTAERN	Transcript: Credits Earned by Subject Area	Transcript: Statistics courses in all departments: credits earned
QE1STSTM	Transcript: Credits Earned by Subject Area	Transcript: STEM, number of credits earned, year 1
QE2NDSTM	Transcript: Credits Earned by Subject Area	Transcript: STEM, number of credits earned, year 2
QE3RDSTM	Transcript: Credits Earned by Subject Area	Transcript: STEM, number of credits earned, year 3
QE4THSTM	Transcript: Credits Earned by Subject Area	Transcript: STEM, number of credits earned, year 4
QE5THSTM	Transcript: Credits Earned by Subject Area	Transcript: STEM, number of credits earned, year 5
QE6THSTM	Transcript: Credits Earned by Subject Area	Transcript: STEM, number of credits earned, year 6
QESTTERN	Transcript: Credits Earned by Subject Area	Transcript: Student teaching: credits earned

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
QEWRTERN	Transcript: Credits Earned by Subject Area	Transcript: Writing beyond English composition: credits earned
QE1TO6RN	Transcript: Credits Earned by Timeframe	Transcript: First through sixth yrs combined: credits earned
QEPSEERN	Transcript: Credits Earned by Timeframe	Transcript: NPSAS institution: credits earned
QEPSERAT	Transcript: Credits Earned by Timeframe	Transcript: NPSAS institution: ratio of credits earned to attempted
QE12ERN	Transcript: Credits Earned by Timeframe	Transcript: Number of credits earned, years 1-2
QE123ERN	Transcript: Credits Earned by Timeframe	Transcript: Number of credits earned, years 1-3
QE1234EN	Transcript: Credits Earned by Timeframe	Transcript: Number of credits earned, years 1-4
QE12345N	Transcript: Credits Earned by Timeframe	Transcript: Number of credits earned, years 1-5
QEAVGERN	Transcript: Credits Earned by Timeframe	Transcript: Per-year average: credits earned
QESUMERN	Transcript: Credits Earned by Timeframe	Transcript: Summer terms: credits earned
QESUMRAT	Transcript: Credits Earned by Timeframe	Transcript: Summer terms: ratio of credits earned to total
QE1STERN	Transcript: Credits Earned by Timeframe	Transcript: Total number of credits earned in year 1
QE2NDERN	Transcript: Credits Earned by Timeframe	Transcript: Total number of credits earned in year 2
QE3RDERN	Transcript: Credits Earned by Timeframe	Transcript: Total number of credits earned in year 3
QE4THERN	Transcript: Credits Earned by Timeframe	Transcript: Total number of credits earned in year 4
QE5THERN	Transcript: Credits Earned by Timeframe	Transcript: Total number of credits earned in year 5
QE6THERN	Transcript: Credits Earned by Timeframe	Transcript: Total number of credits earned in year 6
QDFAEVMY	Transcript: Enrollment	Transcript: First attended ever month/year
QDLEUGMY	Transcript: Enrollment	Transcript: Last date enrolled as an undergraduate
QDLEYEAR	Transcript: Enrollment	Transcript: Last year of enrollment
QF11FBAC	Transcript: Field of Study	Transcript: NPSAS Bachelor's degree field of study: 11 categories
QFCGFBA	Transcript: Field of Study	Transcript: NPSAS Bachelor's degree field of study: 2-digit CIP
QFCSFBA	Transcript: Field of Study	Transcript: NPSAS Bachelor's degree field of study: 4-digit CIP
QF23FBAC	Transcript: Field of Study	Transcript: NPSAS Bachelor's field of study: 23 categories
QFMNSTEM	Transcript: Field of Study	Transcript: STEM minor field of study indicator
QEALBGPA	Transcript: GPA by Subject Area	Transcript: Advanced laboratory science: GPA
QEAWC GPA	Transcript: GPA by Subject Area	Transcript: Advanced western culture and society: GPA
QEHLTGPA	Transcript: GPA by Subject Area	Transcript: Allied health: GPA
QEBWCGPA	Transcript: GPA by Subject Area	Transcript: Basic western culture and society: GPA
QEBUSGPA	Transcript: GPA by Subject Area	Transcript: Business: GPA
QECLCGPA	Transcript: GPA by Subject Area	Transcript: Calculus/advanced math: GPA
QECHLGPA	Transcript: GPA by Subject Area	Transcript: Child, family, and youth studies: GPA
QEMATGPA	Transcript: GPA by Subject Area	Transcript: College-level mathematics: GPA

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
QECSCGPA	Transcript: GPA by Subject Area	Transcript: Computer science: GPA
QEECGPA	Transcript: GPA by Subject Area	Transcript: Economics: GPA
QEEDUGPA	Transcript: GPA by Subject Area	Transcript: Education excluding student teaching: GPA
QEEGTGPA	Transcript: GPA by Subject Area	Transcript: Engineering technologies: GPA
QEEGNGPA	Transcript: GPA by Subject Area	Transcript: Engineering: GPA
QEENVGPA	Transcript: GPA by Subject Area	Transcript: Environment and natural resources: GPA
QEETHGPA	Transcript: GPA by Subject Area	Transcript: Ethics: GPA
QEFARGPA	Transcript: GPA by Subject Area	Transcript: Fine arts, incl graphic arts & design: GPA
QEFLGPA	Transcript: GPA by Subject Area	Transcript: Foreign language: GPA
QEHISGPA	Transcript: GPA by Subject Area	Transcript: History: GPA
QEHUMGPA	Transcript: GPA by Subject Area	Transcript: Humanities: GPA
QEITLGPA	Transcript: GPA by Subject Area	Transcript: Int'l studies excl arts/humanities/history: GPA
QELABGPA	Transcript: GPA by Subject Area	Transcript: Introductory laboratory science: GPA
QEBIOGPA	Transcript: GPA by Subject Area	Transcript: Life sciences: GPA
QEMDAGPA	Transcript: GPA by Subject Area	Transcript: Media studies: GPA
QEMINGPA	Transcript: GPA by Subject Area	Transcript: Minority/ethnic/women's/cultural studies: GPA
QENSEGPA	Transcript: GPA by Subject Area	Transcript: Non-science & engineering: GPA
QENSTGPA	Transcript: GPA by Subject Area	Transcript: Non-STEM: GPA
QENWCGPA	Transcript: GPA by Subject Area	Transcript: Non-western culture and society: GPA
QENRSGPA	Transcript: GPA by Subject Area	Transcript: Nursing: GPA
QEPSCGPA	Transcript: GPA by Subject Area	Transcript: Physical science: GPA
QEPMAGPA	Transcript: GPA by Subject Area	Transcript: Pre-college level mathematics: GPA
QEPSYGPA	Transcript: GPA by Subject Area	Transcript: Psychology: GPA
QERELGPA	Transcript: GPA by Subject Area	Transcript: Religious studies and theology: GPA
QESERGPA	Transcript: GPA by Subject Area	Transcript: Science & engineering: GPA
QESCIGPA	Transcript: GPA by Subject Area	Transcript: Science: GPA
QESSCGPA	Transcript: GPA by Subject Area	Transcript: Social sciences: GPA
QESPTGPA	Transcript: GPA by Subject Area	Transcript: Sports/PE/recreation: GPA
QESTAGPA	Transcript: GPA by Subject Area	Transcript: Statistics courses in all departments: GPA
QESTTGPA	Transcript: GPA by Subject Area	Transcript: Student teaching: GPA

See notes at end of table.



**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
QEWRTGPA	Transcript: GPA by Subject Area	Transcript: Writing beyond English composition: GPA
QEYR1GPA	Transcript: GPA by Timeframe	Transcript GPA in year 1 of attendance
QEYR2GPA	Transcript: GPA by Timeframe	Transcript GPA in year 2 of attendance
QEYR3GPA	Transcript: GPA by Timeframe	Transcript GPA in year 3 of attendance
QEYR4GPA	Transcript: GPA by Timeframe	Transcript GPA in year 4 of attendance
QEYR5GPA	Transcript: GPA by Timeframe	Transcript GPA in year 5 of attendance
QEYR6GPA	Transcript: GPA by Timeframe	Transcript GPA in year 6 of attendance
QEALBNUM	Transcript: Number of Courses Taken	Transcript: Advanced laboratory science: number of courses taken
QECLCNUM	Transcript: Number of Courses Taken	Transcript: Calculus/advanced math: number taken
QEMATNUM	Transcript: Number of Courses Taken	Transcript: College-level mathematics: number of courses taken
QECSCNUM	Transcript: Number of Courses Taken	Transcript: Computer science: number of courses taken
QEEDUNUM	Transcript: Number of Courses Taken	Transcript: Education excluding student teaching: number of courses taken
QEEGNUM	Transcript: Number of Courses Taken	Transcript: Engineering: number of courses taken
QEFLNUM	Transcript: Number of Courses Taken	Transcript: Foreign language: number taken
QELABNUM	Transcript: Number of Courses Taken	Transcript: Introductory laboratory science: number of courses taken
QEBIONUM	Transcript: Number of Courses Taken	Transcript: Life sciences: number taken
QENSENUM	Transcript: Number of Courses Taken	Transcript: Non-science & engineering: number of courses taken
QENSTNUM	Transcript: Number of Courses Taken	Transcript: Non-STEM: number of courses taken
QEPSCNUM	Transcript: Number of Courses Taken	Transcript: Physical science: number taken
QESERNUM	Transcript: Number of Courses Taken	Transcript: Science & engineering: number of courses taken
QESCINUM	Transcript: Number of Courses Taken	Transcript: Science: number of courses taken
QESTANUM	Transcript: Number of Courses Taken	Transcript: Statistics courses in all departments: number taken
QESTMNUM	Transcript: Number of Courses Taken	Transcript: STEM: number of courses taken
QESTTNUM	Transcript: Number of Courses Taken	Transcript: Student teaching: number taken
QECOPTOT	Transcript: Number of Courses Taken	Transcript: Total number of co-op or internship courses
QEUGCRS	Transcript: Number of Courses Taken	Transcript: Total number of undergraduate courses
QBBIOCRD	Transcript: Pre-College Info	Transcript: Biology credit received for AP exam
QBCHMCRD	Transcript: Pre-College Info	Transcript: Chemistry credit received for AP exam
QBNMCPCR	Transcript: Pre-College Info	Transcript: College Level Examination Program course credit
QBMTHCRD	Transcript: Pre-College Info	Transcript: College-level math credits received for AP exams
QBCSCCRD	Transcript: Pre-College Info	Transcript: Computer science credit received for AP exam
QBOTEXCR	Transcript: Pre-College Info	Transcript: Credit by other examination

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
QBHSMY	Transcript: Pre-College Info	Transcript: High school graduation date (year and month)
QBNMIBCR	Transcript: Pre-College Info	Transcript: International Baccalaureate course credit
QBNMMLCR	Transcript: Pre-College Info	Transcript: Military training/experience course credit
QBNMNCCR	Transcript: Pre-College Info	Transcript: Other non-course based credit
QBPHYCRD	Transcript: Pre-College Info	Transcript: Physics credit received for AP exam
QBTLAPCR	Transcript: Pre-College Info	Transcript: Total credits received for AP exam(s)
QBTLNCCR	Transcript: Pre-College Info	Transcript: Total non-course credits
QBNMWKCR	Transcript: Pre-College Info	Transcript: Work experience course credit
QEPASESL	Transcript: Remedial or ESL	Transcript: English as a second language: number of courses passed
QERPTESL	Transcript: Remedial or ESL	Transcript: English as a second language: number of courses repeated
QEESL	Transcript: Remedial or ESL	Transcript: English as a second language: number of courses taken
QEREMRAT	Transcript: Remedial or ESL	Transcript: Ratio of remedial courses to all courses
QEPASR	Transcript: Remedial or ESL	Transcript: Remedial courses: number passed
QERPTR	Transcript: Remedial or ESL	Transcript: Remedial courses: number repeated
QEPASENR	Transcript: Remedial or ESL	Transcript: Remedial English: number of courses passed
QERPTENR	Transcript: Remedial or ESL	Transcript: Remedial English: number of courses repeated
QEENGR	Transcript: Remedial or ESL	Transcript: Remedial English: number of courses taken
QEPASMAR	Transcript: Remedial or ESL	Transcript: Remedial mathematics: number of courses passed
QERPTMAR	Transcript: Remedial or ESL	Transcript: Remedial mathematics: number of courses repeated
QEMATHR	Transcript: Remedial or ESL	Transcript: Remedial mathematics: number of courses taken
QEPASRER	Transcript: Remedial or ESL	Transcript: Remedial reading: number of courses passed
QERPTRER	Transcript: Remedial or ESL	Transcript: Remedial reading: number of courses repeated
QEREADR	Transcript: Remedial or ESL	Transcript: Remedial reading: number of courses taken
QEPASOTR	Transcript: Remedial or ESL	Transcript: Remedial, not English/reading/math: number of courses passed
QERPTOTR	Transcript: Remedial or ESL	Transcript: Remedial, not English/reading/math: number of courses repeated
QEOTHERR	Transcript: Remedial or ESL	Transcript: Remedial, not English/reading/math: number of courses taken
QETRNACC	Transcript: Transfer	Transcript: Transfer credits accepted by NPSAS institution
QECRDRPT	Transcript: Withdrawals/Repeats	Transcript: Credits repeated
QECRDWDR	Transcript: Withdrawals/Repeats	Transcript: Credits withdrawn
QECRSWRT	Transcript: Withdrawals/Repeats	Transcript: Number of courses with withdraw or repeat grades
QECRSWDR	Transcript: Withdrawals/Repeats	Transcript: Number of courses with withdrawals
QERPTRAT	Transcript: Withdrawals/Repeats	Transcript: Ratio of courses repeated to courses attempted
QEWDRRAT	Transcript: Withdrawals/Repeats	Transcript: Ratio of courses withdrawn to courses attempted
QEWRTTRAT	Transcript: Withdrawals/Repeats	Transcript: Ratio of withdraw/repeats to all courses
BB9ANALPSU	Survey Weights	B&B:08/09 Analysis first stage replicate (PSU)
BB9ANALSTR	Survey Weights	B&B:08/09 Analysis stratum
BB12ANALPSU	Survey Weights	B&B:08/12 Analysis first stage replicate (PSU)
BB12ANALSTR	Survey Weights	B&B:08/12 Analysis stratum
BB18ANALPSU	Survey Weights	B&B:08/18 Analysis first stage replicate (PSU)
BB18ANALSTR	Survey Weights	B&B:08/18 Analysis stratum
WTA000	Survey Weights	B&B:08/09 response cross-sectional analysis weight
WTA001–WTA200	Survey Weights	B&B:08/09 Bootstrap replicate weight 1–200 for B&B:08/09 cross-sectional respondents

See notes at end of table.

**Table J-1. Analysis variables: 2018—Continued**

Variable name	Subject	Variable label
WTB000	Survey Weights	B&B:08/09 Transcript response-only analysis weight
WTB001–WTB200	Survey Weights	B&B:08/09 Bootstrap replicate weight 1–200 for transcript respondents
WTC000	Survey Weights	B&B:08/09 and Transcript response analysis weight
WTC001–WTC200	Survey Weights	B&B:08/09 Bootstrap replicate weight 1–200 for B&B:08/09 and transcript respondents
WTD000	Survey Weights	B&B:08/12 response analysis weight
WTD001–WTD200	Survey Weights	B&B:08/12 Bootstrap replicate weight 1–200 for B&B:08/12 respondents
WTE000	Survey Weights	B&B:08/12 and B&B:08/09 response analysis weight
WTE001–WTE200	Survey Weights	B&B:08/09/12 Bootstrap replicate weight 1–200 for B&B:08/12 and B&B:08/09 respondents
WTF000	Survey Weights	B&B:08/12, B&B:08/09, and transcript response analysis weight
WTF001–WTF200	Survey Weights	B&B:08/09/12 Bootstrap replicate weight 1–200 for B&B:08/12, B&B:08/09, and transcript respondents
WTG000	Survey Weights	B&B:08/18 response cross-sectional analysis weight
WTG001–WTG200	Survey Weights	B&B:08/18 Bootstrap replicate weight 1–200 for BB:08/18 cross-sectional respondents
WTH000	Survey Weights	B&B:08/18 and B&B:08/12 response analysis weight
WTH001–WTH200	Survey Weights	B&B:08/18 Bootstrap replicate weight 1–200 for BB:08/18 and BB:08/12 respondents
WTI000	Survey Weights	B&B:08/18 and Transcript response analysis weight
WTI001–WTI200	Survey Weights	B&B:08/18 Bootstrap replicate weight 1–200 for BB:08/18 and Transcript respondents
WTJ000	Survey Weights	B&B:08/18 and B&B:08/12 and Transcript response analysis weight
WTJ001–WTJ200	Survey Weights	B&B:08/18 Bootstrap replicate weight 1–200 for BB:08/18 and BB:08/12 and Transcript respondents
WTK000	Survey Weights	B&B:08/18, B&B:08/12, B&B:08/09, and Transcript response analysis weight
WTK001–WTK200	Survey Weights	B&B:08/18 Bootstrap replicate weight 1–200 for BB:08/18, B&B:08/12, B&B:08/09, and Transcript respondents

NOTE: LGBT = lesbian, gay, bisexual, or transgender. BA = bachelor's degree. STEM = science, technology, engineering, and mathematics. IDR = income-driven repayment. CIP = Classification of Instructional Programs. IPEDS = Integrated Postsecondary Education Data Systems. K-12 = kindergarten through 12<sup>th</sup> grade. ESL = English as a Second Language. K = kindergarten. TEACH = Teacher Education Assistance for College and Higher Education. NPSAS = National Postsecondary Student Aid Study. AYP = Adequate Yearly Progress. GMAT = Graduate Management Admission Test. GRE = Graduate Record Examination. LSAT = Law School Admission Test. MCAT = Medical College Admission Test. NOAA = National Oceanic and Atmospheric Administration. AP = Advanced Placement. GPA = grade-point average. TOEFL = Test of English as a Foreign Language. HBCU = Historically Black Colleges and Universities. HHE = High Hispanic Enrollment. SEOG = Supplemental Educational Opportunity Grant. FWSP = Federal Work-Study program. EFC = expected family contribution. SMART = National Science and Mathematics Access to Retain Talent. VA = veteran's association. DOD = Department of Defense. PSU = Primary Sampling Unit.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

## Appendix K. Estimates for Nonresponse Bias Analysis

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**Table K-1. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Control of baccalaureate-granting institution <sup>4</sup>						(Effect size = 0.03)				(Effect size = #)		
Public	8,520	1,340	62.78	63.58	59.81	0.80	1.27	62.78	62.78	#	#	
Private nonprofit	5,460	870	32.75	32.44	33.91	-0.31	-0.95	32.75	32.75	#	#	
Private for-profit	690	190	4.46	3.98	6.27	-0.49	-10.87	4.46	4.46	#	#	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.04)				(Effect size = #)		
New England	740	130	6.91	7.02	6.51	0.11	1.53	6.91	6.91	#	#	
Mideast	2,520	510	17.52	16.54	21.19	-0.98*	-5.61	17.52	17.52	#	#	
Great Lakes	2,330	330	15.90	16.69	12.96	0.79*	4.97	15.90	15.90	#	#	
Plains	1,890	250	8.44	8.53	8.08	0.10	1.14	8.44	8.44	#	#	
Southeast	3,350	560	24.46	24.46	24.45	#	0.01	24.46	24.46	#	#	
Southwest	1,180	210	9.36	9.04	10.58	-0.33	-3.48	9.36	9.36	#	#	
Rocky Mountains	730	60	3.89	4.32	2.26	0.44*	11.20	3.89	3.89	#	#	
Far West	1,730	300	12.12	12.03	12.44	-0.09	-0.72	12.12	12.12	#	#	
Outlying areas	200	40	1.41	1.38	1.53	-0.03	-2.36	1.41	1.41	#	#	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.02)				(Effect size = #)		
1–4,760	3,690	580	20.96	21.21	20.04	0.25	1.18	20.96	20.96	#	#	
4,761–13,042	3,620	640	21.08	20.88	21.79	-0.19	-0.91	21.08	21.08	#	#	
13,043–27,210	3,680	620	26.98	26.05	30.45	-0.93	-3.45	26.98	26.98	#	#	
27,211 or more	3,680	550	30.99	31.86	27.72	0.88	2.83	30.99	30.99	#	#	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	5,860	850	25.23	25.73	23.37	0.50	1.98	25.23	25.23	#	#	
Did not receive	8,620	1,520	71.82	71.28	73.85	-0.54	-0.76	71.82	71.82	#	#	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	8,620	1,520	71.82	71.82	73.85	-0.54	-0.76	71.82	71.82	#	#	
\$1–\$2,155	2,070	280	9.58	9.50	9.86	-0.08	-0.79	9.58	9.58	#	#	
\$2,156–\$4,309	2,300	340	9.18	9.77	6.97	0.59*	6.46	9.18	9.18	#	#	
\$4,310 or more	1,490	220	6.47	6.45	6.54	-0.02	-0.28	6.47	6.47	#	#	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-1. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2007–08						(Effect size = 0.04)				(Effect size = #)		
Received	8,210	1,220	48.82	50.83	41.31	2.01*	4.13	48.82	48.82	#	#	
Did not receive	6,470	1,180	51.18	49.17	58.69	-2.01*	-3.94	51.18	51.18	#	#	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	6,470	1,180	51.18	49.17	58.69	-2.01*	-3.94	51.18	51.18	#	#	
\$1–\$4,410	2,080	280	11.66	12.07	10.12	0.41	3.53	11.66	11.66	#	#	
\$4,411–\$5,500	3,940	570	22.94	24.48	17.20	1.54*	6.71	22.94	22.94	#	#	
\$5,501–\$6,490	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$6,491 or more	2,000	350	13.13	13.25	12.69	0.12	0.89	13.13	13.13	#	#	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	13,770	2,250	93.35	92.73	95.64	-0.61*	-0.66	93.35	93.35	#	#	
\$1–\$5,000	230	40	1.47	1.60	1.01	0.12	8.42	1.47	1.47	#	#	
\$5,001–\$9,396	220	40	1.62	1.70	1.30	0.08	5.24	1.62	1.62	#	#	
\$9,397–\$14,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$14,001 or more	220	40	1.74	1.96	0.92	0.22*	12.59	1.74	1.74	#	#	
Federal aid status in 2007–08						(Effect size = 0.05)				(Effect size = #)		
Received	10,130	1,460	57.01	59.35	48.29	2.34*	4.10	57.01	57.01	#	#	
Did not receive	4,540	930	42.99	40.65	51.71	-2.34*	-5.44	42.99	42.99	#	#	
Institution aid status in 2007–08						(Effect size = 0.06)				(Effect size = #)		
Received	7,670	1,000	39.68	42.76	28.16	3.09*	7.78	39.68	39.68	#	#	
Did not receive	7,000	1,400	60.32	57.24	71.84	-3.09*	-5.12	60.32	60.32	#	#	
State aid status in 2007–08						(Effect size = 0.04)				(Effect size = #)		
Received	5,990	790	27.42	29.32	20.32	1.90*	6.95	27.42	27.42	#	#	
Did not receive	8,680	1,600	72.58	70.68	79.68	-1.90*	-2.62	72.58	72.58	#	#	
Any aid status in 2007–08						(Effect size = 0.08)				(Effect size = #)		
Received	12,610	1,850	74.91	78.39	61.94	3.48*	4.65	74.91	74.91	#	#	
Did not receive	2,060	540	25.09	21.61	38.06	-3.48*	-13.87	25.09	25.09	#	#	

See notes at end of table.

**Table K-1. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number available						(Effect size = 0.05)				(Effect size = #)		
Available	14,390	2,280	96.13	97.08	92.57	0.95*	0.99	96.13	96.13	#	#	
Not available	280	120	3.87	2.92	7.43	-0.95*	-24.59	3.87	3.87	#	#	
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = #)		
Yes	680	150	4.12	4.02	4.53	-0.11	-2.63	4.12	4.12	#	#	
No	13,990	2,240	95.88	95.98	95.47	0.11	0.11	95.88	95.88	#	#	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	10,480	1,450	68.08	71.05	57.01	2.97*	4.36	68.08	69.48	1.39*	2.05	
Black or African American, non-Hispanic	1,330	250	9.46	9.29	10.12	-0.17	-1.85	9.46	9.48	0.01	0.14	
Hispanic	1,290	240	8.91	9.12	8.12	0.21	2.37	8.91	8.91	#	#	
Asian, non-Hispanic	930	240	6.42	5.88	8.44	-0.54*	-8.45	6.42	6.43	0.01	0.12	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	350	60	1.92	2.08	1.34	0.16*	8.16	1.92	1.96	0.03	1.75	
Unknown race and ethnicity	180	140	4.42	1.84	14.03	-2.58*	-58.43	4.42	2.98	-1.43*	-32.41	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	6,020	1,090	42.87	40.61	51.30	-2.26*	-5.28	42.87	42.87	#	#	
Female	8,650	1,300	56.75	59.39	46.88	2.65*	4.66	56.75	57.13	0.39	0.68	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-1. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.05)				(Effect size = #)	
None	5,130	750	30.55	31.23	27.98	0.69	2.25	30.55	30.55	#	#
1–69 percent	1,580	230	10.30	10.88	8.15	0.58*	5.59	10.30	10.30	#	#
70–116 percent	1,630	210	9.48	10.17	6.92	0.69*	7.26	9.48	9.48	#	#
117–146 percent	1,570	210	8.96	9.45	7.12	0.49*	5.50	8.96	8.96	#	#
147 percent or more	1,480	320	10.03	9.51	11.98	-0.52	-5.21	10.03	10.03	#	#
Not applicable, did not borrow federal student loan(s)	3,280	680	30.68	28.76	37.85	-1.92*	-6.27	30.68	30.68	#	#
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.06)				(Effect size = #)	
None	3,280	680	30.68	28.76	37.85	-1.92*	-6.27	30.68	30.68	#	#
\$1–\$16,735	2,800	480	19.22	18.38	22.38	-0.85	-4.40	19.22	19.22	#	#
\$16,736–\$27,586	2,840	430	17.54	18.00	15.81	0.46	2.65	17.54	17.54	#	#
\$27,587–\$57,914	2,840	440	17.92	18.97	13.98	1.06*	5.89	17.92	17.92	#	#
\$57,915 or more	2,910	370	14.64	15.89	9.98	1.25*	8.53	14.64	14.64	#	#
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)	
Liberal arts	1,790	330	12.90	12.92	12.83	0.02	0.15	12.90	12.90	#	#
Psychology/history	1,790	260	13.09	14.06	9.45	0.97*	7.45	13.09	13.09	#	#
Biology	2,380	300	8.84	9.18	7.57	0.34	3.85	8.84	8.84	#	#
Physical sciences	420	50	1.67	1.51	2.30	-0.17	-10.07	1.67	1.67	#	#
Mathematics and statistics	300	40	0.91	1.02	0.50	0.11	12.23	0.91	0.91	#	#
Computer and information sciences	610	120	2.41	2.02	3.86	-0.39	-16.06	2.41	2.41	#	#
Engineering	1,050	150	5.25	5.37	4.78	0.13	2.40	5.25	5.25	#	#
Education	1,010	140	6.00	6.39	4.54	0.39*	6.51	6.00	6.00	#	#
Business	1,560	370	19.79	18.71	23.83	-1.08*	-5.48	19.79	19.79	#	#
Health professions	930	140	6.28	6.37	5.96	0.09	1.36	6.28	6.28	#	#
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Agricultural sciences	1,510	270	11.32	11.17	11.87	-0.15	-1.31	11.32	11.32	#	#
Missing/unknown	1,250	230	11.04	10.76	12.07	-0.28	-2.51	11.04	11.04	#	#

See notes at end of table.

**Table K-1. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	10,000	1,450	65.25	67.84	55.58	2.59*	3.97	65.25	65.25	#	#
24–29	2,790	550	20.28	18.85	25.62	-1.43*	-7.06	20.28	20.28	#	#
30 or older	1,880	400	14.13	13.25	17.42	-0.88*	-6.23	14.13	14.42	0.28	2.00
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.07)				(Effect size = #)	
Yes, defaulted on federal student loan(s)	1,200	370	10.63	9.32	15.53	-1.31*	-12.36	10.63	10.63	#	#
No, did not default on federal student loan(s)	10,190	1,350	58.69	61.92	46.62	3.24*	5.52	58.69	58.69	#	#
Not applicable, did not receive federal student loan(s)	3,280	680	30.68	28.76	37.85	-1.92*	-6.27	30.68	30.68	#	#

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-2. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by selected variables: 2018**

			Before weight adjustments					After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
Variable	Unweighted respondents	Unweighted non-respondents	Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)	
New England	200	40	3.61	3.53	3.93	-0.08	-2.26	3.61	3.45	-0.16	-4.38
Mideast	1,270	270	13.89	12.76	18.37	-1.13*	-8.14	13.89	13.82	-0.07	-0.52
Great Lakes	1,320	180	16.80	17.51	13.98	0.71	4.24	16.80	16.91	0.11	0.68
Plains	1,090	140	7.66	8.08	5.99	0.42	5.51	7.66	7.87	0.22	2.82
Southeast	2,070	330	27.71	28.01	26.49	0.31	1.11	27.71	27.97	0.26	0.94
Southwest	780	150	10.60	10.04	12.82	-0.56	-5.30	10.60	10.14	-0.46	-4.35
Rocky Mountains	430	40	4.31	4.71	2.71	0.40	9.37	4.31	4.18	-0.12	-2.84
Far West	1,270	190	14.59	14.58	14.63	-0.01	-0.07	14.59	14.88	0.29	2.02
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.02)				(Effect size = 0.01)	
1–11,664	2,160	340	19.48	19.77	18.34	0.29	1.48	19.48	19.90	0.42	2.17
11,665–20,095	2,090	350	24.16	23.39	27.23	-0.77	-3.21	24.16	23.95	-0.21	-0.89
20,096–31,916	2,140	330	25.54	25.43	25.98	-0.11	-0.43	25.54	25.61	0.07	0.27
31,917 or more	2,130	320	30.82	31.42	28.45	0.60	1.94	30.82	30.54	-0.28	-0.90
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)	
Received	3,500	490	26.46	26.62	25.81	0.16	0.62	26.46	25.97	-0.48	-1.83
Did not receive	4,900	850	71.16	70.69	73.05	-0.48	-0.67	71.16	71.46	0.30	0.42
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	4,900	850	71.16	70.69	73.05	-0.48	-0.67	71.16	71.46	0.30	0.42
\$1–\$2,155	1,250	170	10.09	9.77	11.39	-0.33	-3.24	10.09	9.73	-0.36	-3.61
\$2,156–\$4,309	1,370	200	9.62	10.25	7.13	0.63*	6.55	9.62	9.67	0.05	0.51
\$4,310 or more	880	120	6.74	6.60	7.29	-0.14	-2.07	6.74	6.57	-0.17	-2.48
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Direct Loan status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)	
Received	4,370	630	43.45	44.65	38.70	1.20*	2.76	43.45	42.83	-0.62	-1.42
Did not receive	4,150	720	56.55	55.35	61.30	-1.20*	-2.12	56.55	57.17	0.62	1.09

See notes at end of table.

**Table K-2. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	4,150	720	56.55	55.35	61.30	-1.20*	-2.12	56.55	57.17	0.62	1.09	
\$1–\$3,767	1,110	140	10.34	10.30	10.47	-0.03	-0.32	10.34	9.96	-0.38	-3.69	
\$3,768–\$5,500	2,150	300	21.00	22.21	16.19	1.21*	5.78	21.00	21.10	0.10	0.46	
\$5,501–\$5,935	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,936 or more	1,080	170	11.82	11.81	11.85	-0.01	-0.08	11.82	11.44	-0.38	-3.23	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	8,110	1,280	94.79	94.53	95.82	-0.26	-0.27	94.79	94.92	0.12	0.13	
\$1–\$4,488	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$4,489–\$7,453	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$7,454–\$12,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$12,001 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.02)				(Effect size = 0.02)		
Received	5,620	790	52.27	53.48	47.48	1.21*	2.31	52.27	51.22	-1.05	-2.02	
Did not receive	2,900	560	47.73	46.52	52.52	-1.21*	-2.53	47.73	48.78	1.05	2.21	
Institution aid status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)		
Received	3,520	430	31.18	33.12	23.51	1.94*	6.21	31.18	30.73	-0.46	-1.46	
Did not receive	5,000	910	68.82	66.88	76.49	-1.94*	-2.81	68.82	69.27	0.46	0.66	
State aid status in 2007–08						(Effect size = 0.05)				(Effect size = 0.01)		
Received	3,510	420	27.51	29.61	19.17	2.10*	7.65	27.51	27.86	0.35	1.27	
Did not receive	5,010	920	72.49	70.39	80.83	-2.10*	-2.90	72.49	72.14	-0.35	-0.48	
Any aid status in 2007–08						(Effect size = 0.06)				(Effect size = 0.02)		
Received	6,970	990	70.58	73.22	60.12	2.64*	3.74	70.58	69.52	-1.06	-1.51	
Did not receive	1,550	360	29.42	26.78	39.88	-2.64*	-8.97	29.42	30.48	1.06	3.62	
Social Security number available						(Effect size = 0.03)				(Effect size = 0.03)		
Available	8,280	1,270	95.42	95.99	93.15	0.57	0.60	95.42	94.84	-0.58	-0.61	
Not available	240	80	4.58	4.01	6.85	-0.57	-12.54	4.58	5.16	0.58	12.76	

See notes at end of table.

**Table K-2. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = 0.01)		
Yes	360	80	3.30	3.11	4.06	-0.19	-5.81	3.30	3.14	-0.16	-4.90	
No	8,160	1,270	96.70	96.89	95.94	0.19	0.20	96.70	96.86	0.16	0.17	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	6,160	820	69.69	72.41	58.92	2.72*	3.90	69.69	71.47	1.78*	2.56	
Black or African American, non-Hispanic	710	120	8.88	8.44	10.66	-0.45	-5.03	8.88	8.35	-0.54	-6.04	
Hispanic	700	130	9.19	9.24	9.03	0.04	0.46	9.19	9.08	-0.12	-1.28	
Asian, non-Hispanic	590	150	6.84	6.35	8.77	-0.49	-7.12	6.84	7.12	0.28	4.03	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	200	30	1.79	1.95	1.12	0.17*	9.35	1.79	1.80	0.01	0.75	
Unknown race and ethnicity	80	70	2.89	0.95	10.56	-1.94*	-66.98	2.89	1.54	-1.35*	-46.75	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	3,570	640	44.14	42.51	50.57	-1.62*	-3.68	44.14	44.55	0.41	0.92	
Female	4,940	700	55.60	57.49	48.11	1.89*	3.40	55.60	55.45	-0.14	-0.25	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.03)				(Effect size = 0.02)		
None	2,920	420	29.08	29.29	28.26	0.21	0.71	29.08	28.85	-0.24	-0.81	
1–69 percent	880	120	8.59	8.93	7.23	0.34	4.00	8.59	8.41	-0.17	-2.04	
70–114 percent	900	110	9.29	9.59	8.09	0.30	3.26	9.29	9.06	-0.22	-2.41	
115–143 percent	890	110	8.97	9.47	6.99	0.50	5.58	8.97	8.90	-0.06	-0.71	
144 percent or more	820	160	9.61	9.18	11.29	-0.42	-4.41	9.61	9.28	-0.33	-3.45	
Not applicable, did not receive federal student loan(s)	2,100	430	34.47	33.54	38.15	-0.93	-2.70	34.47	35.50	1.03	2.99	

See notes at end of table.



**Table K-2. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.04)				(Effect size = 0.03)		
None	2,100	430	34.47	33.54	38.15	-0.93	-2.70	34.47	35.50	1.03	2.99	
\$1–\$15,070	1,560	270	17.66	16.61	21.81	-1.05*	-5.93	17.66	17.46	-0.20	-1.12	
\$15,071–\$25,683	1,610	220	15.98	16.53	13.77	0.56	3.49	15.98	16.22	0.24	1.51	
\$25,684–\$56,748	1,610	230	17.78	18.19	16.14	0.41	2.33	17.78	16.77	-1.01*	-5.70	
\$56,749 or more	1,640	190	14.12	15.12	10.14	1.00*	7.11	14.12	14.06	-0.06	-0.43	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	970	160	11.88	12.00	11.40	0.12	1.01	11.88	12.12	0.25	2.08	
Psychology/history	1,160	170	13.97	14.65	11.29	0.68	4.85	13.97	13.88	-0.10	-0.69	
Biology	1,410	180	9.70	10.16	7.90	0.46	4.69	9.70	10.03	0.32	3.35	
Physical sciences	240	30	1.91	1.68	2.85	-0.24	-12.31	1.91	2.02	0.10	5.33	
Mathematics and statistics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	250	50	1.84	1.65	2.56	-0.18	-9.90	1.84	2.01	0.17	9.32	
Engineering	760	110	6.64	6.75	6.16	0.12	1.79	6.64	6.53	-0.11	-1.61	
Education	670	90	6.91	7.31	5.32	0.40	5.82	6.91	7.07	0.16	2.31	
Business	710	170	17.66	16.73	21.35	-0.93*	-5.26	17.66	17.29	-0.37	-2.08	
Health professions	550	80	5.81	5.68	6.32	-0.13	-2.23	5.81	5.66	-0.15	-2.50	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	950	160	12.46	12.32	13.02	-0.14	-1.13	12.46	12.42	-0.04	-0.35	
Missing/unknown	650	120	9.97	9.74	10.88	-0.23	-2.30	9.97	9.79	-0.19	-1.86	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	5,770	820	66.61	68.57	58.86	1.96*	2.94	66.61	66.54	-0.07	-0.10	
24–29	1,860	350	22.93	21.83	27.30	-1.10	-4.80	22.93	23.35	0.42	1.84	
30 or older	880	170	10.39	9.61	13.49	-0.78*	-7.53	10.39	10.10	-0.28	-2.73	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-2. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.05)				(Effect size = 0.02)
Yes, defaulted on federal student loan(s)	620	170	8.82	7.79	12.90	-1.03*	-11.67	8.82	8.84	0.03	0.29
No, did not default on federal student loan(s)	5,800	750	56.71	58.67	48.95	1.96*	3.45	56.71	55.66	-1.06	-1.86
Not applicable, did not receive federal student loan(s)	2,100	430	34.47	33.54	38.15	-0.93	-2.70	34.47	35.50	1.03	2.99

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$

<sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.

<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.

<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.

<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>6</sup> Categories were defined by quartiles computed at the institution level.

<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-3. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)	
New England	550	100	14.17	14.71	12.27	0.53	3.77	14.17	14.48	0.30	2.14
Mideast	1,130	200	25.69	25.07	27.89	-0.62	-2.40	25.69	26.01	0.32	1.26
Great Lakes	900	120	14.55	15.17	12.33	0.62	4.27	14.55	14.15	-0.39	-2.69
Plains	700	90	10.30	9.99	11.40	-0.31	-2.99	10.30	10.17	-0.13	-1.27
Southeast	1,170	190	19.27	18.96	20.36	-0.30	-1.58	19.27	19.40	0.13	0.69
Southwest	290	40	3.90	3.73	4.50	-0.17	-4.29	3.90	3.68	-0.23	-5.78
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Far West	370	80	7.12	6.98	7.61	-0.14	-1.94	7.12	6.82	-0.30	-4.19
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.04)				(Effect size = 0.04)	
1–2,507	1,360	220	28.69	28.99	27.60	0.31	1.07	28.69	27.97	-0.72	-2.50
2,508–4,874	1,410	170	21.36	22.89	15.91	1.53*	7.16	21.36	22.64	1.28	5.98
4,875–11,571	1,330	250	22.41	22.06	23.64	-0.35	-1.55	22.41	21.60	-0.81	-3.60
11,572 or more	1,360	220	27.54	26.06	32.85	-1.49	-5.40	27.54	27.79	0.25	0.89
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)	
Received	2,030	280	23.50	24.44	20.13	0.94	4.02	23.50	24.54	1.05	4.46
Did not receive	3,380	570	73.90	73.86	74.02	-0.03	-0.05	73.90	73.53	-0.37	-0.50
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	3,380	570	73.90	73.86	74.02	-0.03	-0.05	73.90	73.53	-0.37	-0.50
\$1–\$2,155	700	80	8.34	8.52	7.71	0.18	2.13	8.34	8.92	0.58	6.95
\$2,156–\$4,309	810	120	8.77	9.40	6.52	0.63	7.19	8.77	8.87	0.10	1.10
\$4,310 or more	520	80	6.38	6.52	5.90	0.14	2.12	6.38	6.76	0.37	5.81
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Direct Loan status in 2007–08						(Effect size = 0.07)				(Effect size = 0.03)	
Received	3,340	480	56.96	60.66	43.79	3.69*	6.49	56.96	58.34	1.37	2.41
Did not receive	2,120	390	43.04	39.34	56.21	-3.69*	-8.59	43.04	41.66	-1.37	-3.19

See notes at end of table.

**Table K-3. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>b</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	2,120	390	43.04	39.34	56.21	-3.69*	-8.59	43.04	41.66	-1.37	-3.19	
\$1–\$5,500	2,510	350	41.31	45.01	28.09	3.71*	8.97	41.31	41.92	0.61	1.48	
\$5,501–\$5,531	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,532 or more	830	130	15.65	15.63	15.69	-0.01	-0.08	15.65	16.40	0.76	4.84	
Parent PLUS Loan amount received in 2007–08 <sup>b</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	4,990	800	90.24	88.89	95.06	-1.35*	-1.50	90.24	90.06	-0.18	-0.19	
\$1–\$6,250	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$6,251–\$11,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$11,001–\$16,091	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$16,092 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.09)				(Effect size = 0.04)		
Received	3,960	550	64.32	68.70	48.69	4.38*	6.82	64.32	66.30	1.98	3.08	
Did not receive	1,500	320	35.68	31.30	51.31	-4.38*	-12.29	35.68	33.70	-1.98	-5.56	
Institution aid status in 2007–08						(Effect size = 0.11)				(Effect size = 0.02)		
Received	3,960	520	59.89	65.48	39.95	5.59*	9.33	59.89	60.89	1.00	1.67	
Did not receive	1,500	340	40.11	34.52	60.05	-5.59*	-13.93	40.11	39.11	-1.00	-2.50	
State aid status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)		
Received	2,290	320	29.22	30.82	23.53	1.60*	5.47	29.22	28.86	-0.37	-1.26	
Did not receive	3,170	540	70.78	69.18	76.47	-1.60*	-2.26	70.78	71.14	0.37	0.52	
Any aid status in 2007–08						(Effect size = 0.13)				(Effect size = 0.06)		
Received	5,000	720	82.15	87.11	64.46	4.96*	6.04	82.15	84.26	2.11	2.57	
Did not receive	460	150	17.85	12.89	35.54	-4.96*	-27.79	17.85	15.74	-2.11	-11.81	
Social Security number available						(Effect size = 0.10)				(Effect size = 0.05)		
Available	5,420	840	97.37	98.89	91.94	1.52*	1.56	97.37	98.13	0.76	0.78	
Not available	50	30	2.63	1.11	8.06	-1.52*	-57.89	2.63	1.87	-0.76	-28.81	

See notes at end of table.

**Table K-3. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = 0.02)	
Yes	230	60	3.70	3.86	3.15	0.16	4.19	3.70	4.04	0.34	9.10
No	5,230	810	96.30	96.14	96.85	-0.16	-0.16	96.30	95.96	-0.34	-0.35
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	3,980	540	68.63	72.08	56.34	3.45*	5.02	68.63	69.41	0.78	1.13
Black or African American, non-Hispanic	470	90	8.88	8.85	8.98	-0.03	-0.32	8.88	9.75	0.87	9.77
Hispanic	450	70	7.17	7.63	5.51	0.46	6.47	7.17	7.36	0.20	2.75
Asian, non-Hispanic	310	80	5.67	5.33	6.86	-0.33	-5.89	5.67	5.59	-0.08	-1.43
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Unknown race and ethnicity	70	50	6.38	2.74	19.34	-3.63*	-56.98	6.38	4.48	-1.89	-29.68
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	2,160	370	40.35	36.97	52.42	-3.38*	-8.39	40.35	39.34	-1.01	-2.50
Female	3,310	500	58.98	63.03	44.55	4.05*	6.86	58.98	60.66	1.67	2.84
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.10)				(Effect size = 0.04)	
None	2,030	290	34.91	36.81	28.16	1.89*	5.43	34.91	35.67	0.76	2.18
1–65 percent	590	80	10.87	11.62	8.19	0.75	6.91	10.87	10.98	0.11	0.99
66–114 percent	600	70	9.06	10.27	4.73	1.21*	13.40	9.06	9.45	0.39	4.28
115–146 percent	580	80	9.38	10.11	6.76	0.73	7.83	9.38	9.72	0.34	3.65
147 percent or more	540	110	10.65	9.69	14.08	-0.96	-9.02	10.65	10.53	-0.12	-1.14
Not applicable, did not receive federal student loan(s)	1,110	230	25.13	21.49	38.09	-3.63*	-14.46	25.13	23.65	-1.48	-5.88

See notes at end of table.

**Table K-3. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.09)				(Effect size = 0.04)		
None	1,110	230	25.13	21.49	38.09	-3.63*	-14.46	25.13	23.65	-1.48	-5.88	
\$1–\$17,125	1,190	190	23.25	23.25	23.27	#	-0.02	23.25	23.72	0.47	2.02	
\$17,126–\$28,199	960	150	17.58	18.22	15.30	0.64	3.63	17.58	17.73	0.15	0.85	
\$28,200–\$61,502	1,080	170	19.89	21.29	14.89	1.40*	7.05	19.89	20.57	0.68	3.44	
\$61,503 or more	1,110	130	14.15	15.75	8.46	1.60*	11.28	14.15	14.33	0.17	1.22	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	670	120	15.71	15.63	16.00	-0.08	-0.51	15.71	15.49	-0.22	-1.43	
Psychology/history	620	90	13.11	14.56	7.97	1.44*	11.00	13.11	13.30	0.18	1.39	
Biology	970	110	8.23	8.20	8.34	-0.03	-0.35	8.23	7.57	-0.66	-8.02	
Physical sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Mathematics and statistics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	230	40	2.20	1.67	4.10	-0.53	-24.10	2.20	2.02	-0.18	-8.22	
Engineering	270	40	3.27	3.31	3.13	0.04	1.20	3.27	3.49	0.22	6.76	
Education	340	50	5.07	5.37	4.02	0.29	5.81	5.07	4.77	-0.31	-6.03	
Business	690	160	20.87	19.49	25.79	-1.38	-6.61	20.87	20.74	-0.13	-0.60	
Health professions	350	50	6.33	6.85	4.47	0.52	8.25	6.33	6.81	0.48	7.59	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	430	80	9.42	9.33	9.74	-0.09	-0.96	9.42	9.73	0.31	3.26	
Missing/unknown	550	90	12.43	12.09	13.65	-0.34	-2.75	12.43	12.82	0.39	3.16	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	4,060	590	69.80	73.31	57.29	3.51*	5.02	69.80	70.14	0.34	0.49	
24–29	690	130	13.85	12.13	19.95	-1.71*	-12.36	13.85	13.39	-0.45	-3.28	
30 or older	700	140	15.45	14.37	19.29	-1.08	-6.98	15.45	16.29	0.84	5.44	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-3. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.12)				(Effect size = 0.04)
Yes, defaulted on federal student loan(s)	410	140	10.89	8.73	18.57	-2.15*	-19.78	10.89	10.24	-0.65	-5.95
No, did not default on federal student loan(s)	3,930	500	63.99	69.77	43.35	5.79*	9.04	63.99	66.11	2.12*	3.32
Not applicable, did not receive federal student loan(s)	1,110	230	25.13	21.49	38.09	-3.63*	-14.46	25.13	23.65	-1.48	-5.88

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-4. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)	
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mideast	130	40	8.68	7.33	11.86	-1.34	-15.50	8.68	7.32	-1.35	-15.61
Great Lakes	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Plains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Southeast	120	40	16.90	12.57	27.14	-4.33	-25.61	16.90	12.25	-4.65	-27.51
Southwest	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Far West	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.12)				(Effect size = 0.15)	
1–1,972	190	50	16.90	14.28	23.08	-2.62	-15.48	16.90	14.25	-2.65	-15.68
1,973–3,355	170	40	17.61	20.06	11.83	2.44	13.88	17.61	19.36	1.75	9.93
3,356–8,142	170	60	13.66	10.88	20.22	-2.78	-20.33	13.66	9.69	-3.97*	-29.03
8,143 or more	170	50	51.83	54.78	44.87	2.95	5.68	51.83	56.70	4.86	9.38
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)	
Received	340	80	20.65	21.93	17.61	1.28	6.22	20.65	19.76	-0.89	-4.31
Did not receive	350	100	65.90	59.69	80.58	-6.21*	-9.42	65.90	64.43	-1.47	-2.23
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	350	100	65.90	59.69	80.58	-6.21*	-9.42	65.90	64.43	-1.47	-2.23
\$1–\$2,155	120	30	11.40	13.30	6.93	1.89	16.59	11.40	12.28	0.87	7.66
\$2,156–\$4,309	120	30	5.93	5.10	7.89	-0.83	-13.96	5.93	4.53	-1.40	-23.54
\$4,310 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Direct Loan status in 2007–08						(Effect size = 0.10)				(Effect size = 0.03)	
Received	490	120	64.54	69.54	52.73	5.00	7.74	64.54	63.17	-1.37	-2.13
Did not receive	200	70	35.46	30.46	47.27	-5.00	-14.09	35.46	36.83	1.37	3.88

See notes at end of table.



**Table K-4. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	200	70	35.46	30.46	47.27	-5.00	-14.09	35.46	36.83	1.37	3.88
\$1–\$3,938	130	30	14.38	16.65	9.00	2.27	15.81	14.38	15.98	1.60	11.14
\$3,939–\$5,500	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$5,501–\$10,500	240	60	24.52	25.06	23.25	0.54	2.20	24.52	22.38	-2.14	-8.74
\$10,501 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	660	180	95.85	95.35	97.04	-0.50	-0.52	95.85	95.41	-0.45	-0.47
\$1–\$5,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$5,001–\$8,253	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$8,254–\$11,737	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$11,738 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal aid status in 2007–08						(Effect size = 0.15)				(Effect size = 0.01)	
Received	550	130	70.01	76.84	53.86	6.83	9.75	70.01	70.29	0.28	0.40
Did not receive	140	60	29.99	23.16	46.14	-6.83	-22.77	29.99	29.71	-0.28	-0.94
Institution aid status in 2007–08						(Effect size = 0.03)				(Effect size = 0.03)	
Received	190	40	10.81	11.67	8.79	0.86	7.92	10.81	9.88	-0.94	-8.65
Did not receive	500	150	89.19	88.33	91.21	-0.86	-0.96	89.19	90.12	0.94	1.05
State aid status in 2007–08						(Effect size = 0.01)				(Effect size = 0.07)	
Received	190	50	12.92	12.51	13.90	-0.41	-3.20	12.92	10.70	-2.22	-17.18
Did not receive	500	140	87.08	87.49	86.10	0.41	0.48	87.08	89.30	2.22	2.55
Any aid status in 2007–08						(Effect size = 0.19)				(Effect size = 0.01)	
Received	640	150	82.65	89.87	65.60	7.21*	8.73	82.65	82.15	-0.50	-0.60
Did not receive	50	40	17.35	10.13	34.40	-7.21*	-41.58	17.35	17.85	0.50	2.88
Social Security number available						(Effect size = ‡)				(Effect size = ‡)	
Available	690	180	96.90	99.60	90.52	2.70	2.79	96.90	99.56	2.66	2.75
Not available	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-4. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Yes	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
No	600	170	81.20	80.21	83.55	-0.99	-1.22	81.20	81.40	0.20	0.25	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	340	80	41.41	40.98	42.41	-0.43	-1.03	41.41	41.88	0.48	1.15	
Black or African American, non-Hispanic	150	30	21.88	26.44	11.08	4.56*	20.87	21.88	23.37	1.49	6.82	
Hispanic	130	40	17.68	19.40	13.62	1.72	9.72	17.68	17.89	0.21	1.17	
Asian, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Unknown race and ethnicity	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	300	90	43.50	39.83	52.18	-3.67	-8.44	43.50	45.17	1.67	3.83	
Female	400	100	56.50	60.17	47.82	3.67	6.50	56.50	54.83	-1.67	-2.95	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	180	50	19.08	16.84	24.37	-2.24	-11.74	19.08	16.83	-2.25	-11.78	
1–103 percent	110	30	26.46	33.87	8.94	7.41*	28.00	26.46	30.78	4.32	16.33	
104–141 percent	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
142–166 percent	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
167 percent or more	110	40	17.56	19.28	13.50	1.72	9.78	17.56	21.49	3.93	22.38	
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-4. Table K-4. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$1–\$23,046	160	40	20.19	17.48	26.59	-2.71	-13.40	20.19	18.20	-1.99	-9.83
\$23,047–\$35,955	150	50	23.09	25.94	16.35	2.85	12.35	23.09	25.27	2.18	9.44
\$35,956–\$50,287	160	40	16.21	18.20	11.50	1.99	12.27	16.21	19.17	2.96	18.26
\$50,288 or more	160	30	22.37	26.80	11.89	4.43*	19.82	22.37	22.87	0.50	2.26
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)	
Liberal arts	150	50	6.75	5.65	9.34	-1.10	-16.27	6.75	4.92	-1.83	-27.05
Psychology/history	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Computer and information sciences	140	40	12.03	10.80	14.94	-1.23	-10.21	12.03	10.96	-1.08	-8.95
Engineering	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Business	160	40	41.87	43.92	37.01	2.05	4.90	41.87	47.97	6.10*	14.58
Health professions	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Agricultural sciences	130	40	9.16	7.79	12.40	-1.37	-14.96	9.16	7.53	-1.63	-17.83
Missing/unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007						(Effect size = 0.11)				(Effect size = 0.08)	
15–23	170	40	12.68	11.70	15.00	-0.98	-7.74	12.68	11.13	-1.55	-12.25
24–29	230	70	30.17	25.90	40.27	-4.27	-14.16	30.17	27.57	-2.61	-8.64
30 or older	300	80	57.15	62.40	44.73	5.25	9.19	57.15	61.31	4.16	7.28

See notes at end of table.

**Table K-4. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = ‡)				(Effect size = ‡)
Yes, defaulted on federal student loan(s)	170	60	34.31	38.55	24.28	4.24	12.37	34.31	38.71	4.40	12.83
No, did not default on federal student loan(s)	460	100	47.54	49.87	42.05	2.32	4.89	47.54	46.80	-0.74	-1.56
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-5. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Eligible sample vs. Respondents		
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Control of baccalaureate-granting institution <sup>4</sup>						(Effect size = 0.04)				(Effect size = #)		
Public	7,720	2,140	62.78	64.40	59.20	1.62*	2.58	62.78	62.78	#	#	
Private nonprofit	4,940	1,390	32.75	31.65	35.20	-1.11	-3.38	32.75	32.75	#	#	
Private for-profit	610	270	4.46	3.95	5.60	-0.51*	-11.52	4.46	4.46	#	#	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.06)				(Effect size = #)		
New England	650	230	6.91	6.90	6.94	-0.01	-0.18	6.91	6.91	#	#	
Mideast	2,230	800	17.52	15.84	21.24	-1.68*	-9.59	17.52	17.52	#	#	
Great Lakes	2,140	530	15.90	17.10	13.25	1.20*	7.54	15.90	15.90	#	#	
Plains	1,740	400	8.44	8.53	8.23	0.09	1.11	8.44	8.44	#	#	
Southeast	3,030	890	24.46	24.55	24.25	0.09	0.38	24.46	24.46	#	#	
Southwest	1,060	340	9.36	8.94	10.28	-0.42	-4.46	9.36	9.36	#	#	
Rocky Mountains	690	90	3.89	4.58	2.36	0.69*	17.75	3.89	3.89	#	#	
Far West	1,570	470	12.12	12.16	12.02	0.04	0.36	12.12	12.12	#	#	
Outlying areas	170	60	1.41	1.40	1.43	-0.01	-0.67	1.41	1.41	#	#	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.04)				(Effect size = #)		
1–4,760	3,340	930	20.96	21.17	20.49	0.21	1.01	20.96	20.96	#	#	
4,761–13,042	3,240	1,030	21.08	19.93	23.61	-1.15*	-5.45	21.08	21.08	#	#	
13,043–27,210	3,340	970	26.98	26.36	28.35	-0.62	-2.30	26.98	26.98	#	#	
27,211 or more	3,360	880	30.99	32.55	27.55	1.56*	5.03	30.99	30.99	#	#	
Pell Grant status in 2007–08						(Effect size = 0.01)				(Effect size = #)		
Received	5,280	1,430	25.23	25.83	23.90	0.60	2.38	25.23	25.23	#	#	
Did not receive	7,820	2,330	71.82	71.17	73.26	-0.65	-0.91	71.82	71.82	#	#	
Unknown	160	50	2.95	3.00	2.84	0.05	1.74	2.95	2.95	#	#	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.03)				(Effect size = #)		
None	7,820	2,330	71.82	71.17	73.26	-0.65	-0.91	71.82	71.82	#	#	
\$1–\$2,155	1,880	470	9.58	9.39	9.99	-0.19	-1.95	9.58	9.58	#	#	
\$2,156–\$4,309	2,080	570	9.18	9.95	7.47	0.77*	8.43	9.18	9.18	#	#	
\$4,310 or more	1,330	390	6.47	6.48	6.44	0.01	0.21	6.47	6.47	#	#	
Unknown	160	50	2.95	3.00	2.84	0.05	1.74	2.95	2.95	#	#	

See notes at end of table.

**Table K-5. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Eligible sample vs. Respondents		
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2007–08						(Effect size = 0.03)				(Effect size = #)		
Received	7,380	2,050	48.82	50.44	45.22	1.63*	3.33	48.82	48.82	#	#	
Did not receive	5,890	1,750	51.18	49.56	54.78	-1.63*	-3.18	51.18	51.18	#	#	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.04)				(Effect size = #)		
None	5,890	1,750	51.18	49.56	54.78	-1.63*	-3.18	51.18	51.18	#	#	
\$1–\$4,410	1,890	470	11.66	11.98	10.94	0.33	2.80	11.66	11.66	#	#	
\$4,411–\$5,500	3,570	940	22.94	24.45	19.61	1.51*	6.58	22.94	22.94	#	#	
\$5,501–\$6,490	170	40	1.09	1.04	1.21	-0.05	-4.93	1.09	1.09	#	#	
\$6,491 or more	1,760	600	13.13	12.97	13.47	-0.16	-1.19	13.13	13.13	#	#	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.03)				(Effect size = #)		
None	12,460	3,560	93.35	92.99	94.14	-0.36	-0.38	93.35	93.35	#	#	
\$1–\$5,000	210	60	1.47	1.68	1.01	0.21	14.07	1.47	1.47	#	#	
\$5,001–\$9,396	190	70	1.62	1.47	1.93	-0.14	-8.76	1.62	1.62	#	#	
\$9,397–\$14,000	210	50	1.83	2.00	1.44	0.17	9.48	1.83	1.83	#	#	
\$14,001 or more	200	60	1.74	1.86	1.47	0.12	6.88	1.74	1.74	#	#	
Federal aid status in 2007–08						(Effect size = 0.04)				(Effect size = #)		
Received	9,140	2,460	57.01	59.15	52.27	2.14*	3.76	57.01	57.01	#	#	
Did not receive	4,130	1,340	42.99	40.85	47.73	-2.14*	-4.99	42.99	42.99	#	#	
Institution aid status in 2007–08						(Effect size = 0.07)				(Effect size = #)		
Received	7,000	1,660	39.68	43.31	31.64	3.63*	9.16	39.68	39.68	#	#	
Did not receive	6,270	2,140	60.32	56.69	68.36	-3.63*	-6.03	60.32	60.32	#	#	
State aid status in 2007–08						(Effect size = 0.06)				(Effect size = #)		
Received	5,450	1,330	27.42	29.92	21.88	2.50*	9.14	27.42	27.42	#	#	
Did not receive	7,820	2,470	72.58	70.08	78.12	-2.50*	-3.45	72.58	72.58	#	#	
Any aid status in 2007–08						(Effect size = 0.09)				(Effect size = #)		
Received	11,410	3,050	74.91	78.74	66.44	3.83*	5.11	74.91	74.91	#	#	
Did not receive	1,860	750	25.09	21.26	33.56	-3.83*	-15.26	25.09	25.09	#	#	

See notes at end of table.

**Table K-5. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Eligible sample vs. Respondents	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Social Security number available						(Effect size = 0.04)				(Effect size = #)	
Available	13,010	3,660	96.13	96.99	94.22	0.86*	0.90	96.13	96.13	#	#
Not available	260	140	3.87	3.01	5.78	-0.86*	-22.28	3.87	3.87	#	#
Veteran status in 2007–08						(Effect size = #)				(Effect size = #)	
Yes	600	240	4.12	4.08	4.23	-0.05	-1.13	4.12	4.12	#	#
No	12,670	3,560	95.88	95.92	95.77	0.05	0.05	95.88	95.88	#	#
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	9,540	2,390	68.08	71.18	61.22	3.10*	4.56	68.08	69.48	1.39	2.05
Black or African American, non-Hispanic	1,180	400	9.46	9.28	9.86	-0.18	-1.90	9.46	9.48	0.01	0.14
Hispanic	1,160	370	8.91	9.32	8.01	0.41	4.58	8.91	8.91	#	#
Asian, non-Hispanic	820	350	6.42	5.84	7.70	-0.58*	-9.01	6.42	6.43	0.01	0.12
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	330	80	1.92	2.17	1.38	0.25*	12.80	1.92	1.96	0.03	1.75
Unknown race and ethnicity	130	180	4.42	1.41	11.07	-3.01*	-68.11	4.42	2.98	-1.43*	-32.41
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	5,400	1,720	42.87	40.45	48.22	-2.42*	-5.65	42.87	42.87	#	#
Female	7,870	2,080	56.75	59.55	50.54	2.81*	4.95	56.75	57.13	0.39	0.68
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-5. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Eligible sample vs. Respondents		
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.07)				(Effect size = #)		
None	4,650	1,240	30.55	31.42	28.60	0.88	2.87	30.55	30.55	#	#	
1–69 percent	1,440	360	10.30	11.04	8.66	0.74*	7.21	10.30	10.30	#	#	
70–116 percent	1,510	330	9.48	10.40	7.46	0.92*	9.65	9.48	9.48	#	#	
117–146 percent	1,420	370	8.96	9.47	7.84	0.51	5.65	8.96	8.96	#	#	
147 percent or more	1,280	520	10.03	8.79	12.79	-1.25*	-12.42	10.03	10.03	#	#	
Not applicable, did not borrow federal student loan(s)	2,980	980	30.68	28.88	34.65	-1.80*	-5.86	30.68	30.68	#	#	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.06)				(Effect size = #)		
None	2,980	980	30.68	28.88	34.65	-1.80*	-5.86	30.68	30.68	#	#	
\$1–\$16,735	2,540	740	19.22	18.55	20.72	-0.68	-3.53	19.22	19.22	#	#	
\$16,736–\$27,586	2,570	710	17.54	17.94	16.65	0.40	2.30	17.54	17.54	#	#	
\$27,587–\$57,914	2,540	730	17.92	18.22	17.24	0.30	1.70	17.92	17.92	#	#	
\$57,915 or more	2,640	630	14.64	16.41	10.73	1.77*	12.07	14.64	14.64	#	#	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	1,620	490	12.90	12.91	12.89	0.01	0.04	12.90	12.90	#	#	
Psychology/history	1,640	410	13.09	14.52	9.91	1.44*	10.98	13.09	13.09	#	#	
Biology	2,190	490	8.84	9.46	7.46	0.62*	7.03	8.84	8.84	#	#	
Physical sciences	380	90	1.67	1.44	2.19	-0.24	-14.05	1.67	1.56	-0.11	-6.70	
Mathematics and statistics	280	60	0.91	0.90	0.95	-0.02	-1.95	0.91	1.03	0.11	12.28	
Computer and information sciences	560	180	2.41	1.99	3.35	-0.43	-17.67	2.41	2.41	#	#	
Engineering	940	260	5.25	5.56	4.57	0.31	5.86	5.25	5.25	#	#	
Education	910	240	6.00	6.35	5.22	0.35	5.85	6.00	6.00	#	#	
Business	1,390	530	19.79	18.18	23.36	-1.61*	-8.15	19.79	19.79	#	#	
Health professions	850	220	6.28	6.27	6.30	-0.01	-0.15	6.28	6.28	#	#	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	1,330	450	11.32	11.40	11.14	0.08	0.71	11.32	11.32	#	#	
Missing/unknown	1,120	360	11.04	10.60	12.02	-0.44	-4.02	11.04	11.04	#	#	

See notes at end of table.



**Table K-5. Table K-5. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Eligible sample vs. Respondents	
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	9,090	2,360	65.25	68.38	58.31	3.14*	4.81	65.25	65.25	#	#
24–29	2,470	870	20.28	18.51	24.19	-1.77*	-8.73	20.28	20.28	#	#
30 or older	1,710	570	14.13	13.04	16.56	-1.10*	-7.76	14.13	14.42	0.29	2.05
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.10)				(Effect size = #)	
Yes, defaulted on federal student loan(s)	990	570	10.63	8.30	15.80	-2.33*	-21.96	10.63	10.63	#	#
No, did not default on federal student loan(s)	9,300	2,250	58.69	62.82	49.55	4.13*	7.04	58.69	58.69	#	#
Not applicable, did not receive federal student loan(s)	2,980	980	30.68	28.88	34.65	-1.80*	-5.86	30.68	30.68	#	#

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-6. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	170	60	3.61	3.71	3.37	0.10	2.77	3.61	3.55	-0.06	-1.56	
Mideast	1,120	410	13.89	12.30	17.71	-1.59*	-11.43	13.89	14.25	0.36	2.57	
Great Lakes	1,220	290	16.80	17.72	14.57	0.93	5.52	16.80	16.59	-0.21	-1.27	
Plains	990	240	7.66	8.07	6.65	0.42	5.44	7.66	7.90	0.24	3.17	
Southeast	1,860	540	27.71	27.84	27.38	0.14	0.50	27.71	27.87	0.16	0.59	
Southwest	710	220	10.60	9.93	12.20	-0.67	-6.28	10.60	10.00	-0.60	-5.67	
Rocky Mountains	410	60	4.31	4.97	2.71	0.67*	15.46	4.31	4.22	-0.09	-2.01	
Far West	1,160	310	14.59	14.58	14.61	-0.01	-0.06	14.59	14.74	0.15	1.05	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.02)				(Effect size = 0.02)		
1–11,664	1,940	560	19.48	19.42	19.64	-0.07	-0.34	19.48	20.39	0.91	4.66	
11,665–20,095	1,890	550	24.16	23.27	26.30	-0.89	-3.68	24.16	23.68	-0.48	-1.99	
20,096–31,916	1,960	510	25.54	25.80	24.92	0.26	1.01	25.54	25.55	0.01	0.05	
31,917 or more	1,940	520	30.82	31.52	29.14	0.70	2.27	30.82	30.38	-0.44	-1.43	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	3,160	820	26.46	26.91	25.36	0.45	1.72	26.46	26.08	-0.38	-1.43	
Did not receive	4,450	1,290	71.16	70.56	72.60	-0.60	-084	71.16	71.52	0.36	0.50	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	4,450	1,290	71.16	70.56	72.60	-0.60	-084	71.16	71.52	0.36	0.50	
\$1–\$2,155	1,140	280	10.09	9.81	10.77	-0.28	-2.77	10.09	9.94	-0.16	-1.54	
\$2,156–\$4,309	1,230	330	9.62	10.43	7.69	0.81*	8.37	9.62	9.66	0.04	0.38	
\$4,310 or more	790	220	6.74	6.67	6.91	-0.07	-1.07	6.74	6.48	-0.26	-3.83	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Direct Loan status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)		
Received	3,950	1,050	43.45	44.59	40.72	1.14	2.62	43.45	42.92	-0.53	-1.21	
Did not receive	3,780	1,090	56.55	55.41	59.28	-1.14	-2.01	56.55	57.08	0.53	0.93	

See notes at end of table.

**Table K-6. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	3,780	1,090	56.55	55.41	59.28	-1.14	-2.01	56.55	57.08	0.53	0.93	
\$1–\$3,767	1,010	240	10.34	10.32	10.38	-0.02	-0.16	10.34	9.87	-0.47	-4.52	
\$3,768–\$5,500	1,950	500	21.00	22.31	17.85	1.31*	6.23	21.00	21.22	0.22	1.03	
\$5,501–\$5,935	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,936 or more	950	300	11.82	11.61	12.31	-0.21	-1.74	11.82	11.44	-0.37	-3.17	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	7,350	2,040	94.79	94.63	95.18	-0.16	-0.17	94.79	94.79	#	#	
\$1–\$4,488	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$4,489–\$7,453	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$7,454–\$12,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$12,001 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.03)				(Effect size = 0.02)		
Received	5,070	1,330	52.27	53.55	49.18	1.28	2.46	52.27	51.26	-1.01	-1.93	
Did not receive	2,650	810	47.73	46.45	50.82	-1.28	-2.69	47.73	48.74	1.01	2.11	
Institution aid status in 2007–08						(Effect size = 0.06)				(Effect size = 0.02)		
Received	3,220	730	31.18	33.84	24.78	2.66*	8.53	31.18	30.27	-0.92	-2.94	
Did not receive	4,500	1,410	68.82	66.16	75.22	-2.66*	-3.87	68.82	69.73	0.92	1.33	
State aid status in 2007–08						(Effect size = 0.06)				(Effect size = #)		
Received	3,200	730	27.51	30.13	21.18	2.63*	9.55	27.51	27.57	0.07	0.24	
Did not receive	4,520	1,410	72.49	69.87	78.82	-2.63*	-3.63	72.49	72.43	-0.07	-0.09	
Any aid status in 2007–08						(Effect size = 0.07)				(Effect size = 0.02)		
Received	6,330	1,630	70.58	73.82	62.78	3.24*	4.59	70.58	69.52	-1.06	-1.51	
Did not receive	1,390	510	29.42	26.18	37.22	-3.24*	-11.02	29.42	30.48	1.06	3.61	
Social Security number available						(Effect size = 0.02)				(Effect size = 0.03)		
Available	7,510	2,040	95.42	95.82	94.46	0.40	0.42	95.42	94.74	-0.68	-0.71	
Not available	220	100	4.58	4.18	5.54	-0.40	-8.74	4.58	5.26	0.68	14.80	

See notes at end of table.

**Table K-6. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = 0.01)	
Yes	320	120	3.30	3.11	3.77	-0.20	-5.93	3.30	3.07	-0.23	-7.01
No	7,410	2,020	96.70	96.89	96.23	0.20	0.20	96.70	96.93	0.23	0.24
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	5,610	1,380	69.69	71.95	64.26	2.26*	3.24	69.69	70.88	1.19	1.70
Black or African American, non-Hispanic	640	200	8.88	8.53	9.74	-0.36	-4.01	8.88	8.54	-0.34	-3.87
Hispanic	640	190	9.19	9.48	8.51	0.29	3.10	9.19	9.16	-0.03	-0.37
Asian, non-Hispanic	530	210	6.84	6.56	7.52	-0.28	-4.13	6.84	7.39	0.55	8.09
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	190	50	1.79	2.01	1.24	0.23*	12.78	1.79	1.75	-0.03	-1.84
Unknown race and ethnicity	60	90	2.89	0.79	7.95	-2.10*	-72.79	2.89	1.66	-1.23*	-42.54
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	3,210	1,000	44.14	42.08	49.08	-2.05*	-4.65	44.14	44.09	-0.05	-0.11
Female	4,510	1,130	55.60	57.92	50.01	2.32*	4.17	55.60	55.91	0.32	0.57
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.04)				(Effect size = 0.03)	
None	2,640	700	29.08	29.05	29.16	-0.03	-0.11	29.08	28.33	-0.75	-2.59
1–69 percent	810	190	8.59	9.09	7.38	0.50	5.86	8.59	8.23	-0.36	-4.18
70–114 percent	830	180	9.29	9.73	8.23	0.44	4.75	9.29	8.94	-0.35	-3.73
115–143 percent	810	190	8.97	9.70	7.20	0.73*	8.18	8.97	9.08	0.11	1.26
144 percent or more	720	260	9.61	8.82	11.51	-0.79	-8.24	9.61	9.92	0.31	3.22
Not applicable, did not receive federal student loan(s)	1,920	610	34.47	33.61	36.52	-0.85	-2.48	34.47	35.51	1.04	3.01

See notes at end of table.

**Table K-6. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.02)	
None	1,920	610	34.47	33.61	36.52	-0.85	-2.48	34.47	35.51	1.04	3.01
\$1–\$15,070	1,410	420	17.66	16.59	20.23	-1.07*	-6.05	17.66	17.46	-0.19	-1.10
\$15,071–\$25,683	1,450	380	15.98	16.20	15.43	0.23	1.42	15.98	15.68	-0.30	-1.87
\$25,684–\$56,748	1,450	390	17.78	17.93	17.42	0.15	0.85	17.78	17.32	-0.46	-2.57
\$56,749 or more	1,500	330	14.12	15.66	10.40	1.54*	10.94	14.12	14.03	-0.09	-0.63
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)	
Liberal arts	890	250	11.88	12.01	11.56	0.13	1.11	11.88	12.43	0.56	4.69
Psychology/history	1,080	260	13.97	15.33	10.70	1.36*	9.74	13.97	14.07	0.10	0.70
Biology	1,280	300	9.70	10.26	8.37	0.56	5.73	9.70	9.79	0.09	0.91
Physical sciences	220	60	1.91	1.61	2.64	-0.30	-15.74	1.91	1.79	-0.13	-6.72
Mathematics and statistics	150	40	0.80	0.90	0.56	0.10	12.43	0.80	1.05	0.25*	31.51
Computer and information sciences	230	60	1.84	1.46	2.73	-0.37	-20.28	1.84	1.73	-0.10	-5.64
Engineering	680	190	6.64	6.93	5.93	0.29	4.40	6.64	6.41	-0.22	-3.35
Education	600	160	6.91	7.07	6.53	0.16	2.27	6.91	6.82	-0.09	-1.30
Business	640	240	17.66	16.22	21.14	-1.45*	-8.19	17.66	17.42	-0.24	-1.36
Health professions	510	120	5.81	5.80	5.83	-0.01	-0.15	5.81	5.85	0.05	0.83
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Agricultural sciences	840	270	12.46	12.38	12.67	-0.09	-0.70	12.46	12.23	-0.23	-1.87
Missing/unknown	580	190	9.97	9.67	10.69	-0.30	-3.00	9.97	9.99	0.02	0.19
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	5,260	1,340	66.61	68.98	60.91	2.37*	3.56	66.61	66.28	-0.33	-0.49
24–29	1,660	550	22.93	21.35	26.73	-1.58*	-6.89	22.93	23.45	0.52	2.27
30 or older	810	250	10.39	9.67	12.12	-0.72	-6.92	10.39	10.27	-0.12	-1.15
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-6. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.07)				(Effect size = 0.03)
Yes, defaulted on federal student loan(s)	510	280	8.82	7.09	12.98	-1.73*	-19.63	8.82	9.39	0.58	6.55
No, did not default on federal student loan(s)	5,300	1,250	56.71	59.30	50.49	2.59*	4.56	56.71	55.10	-1.61*	-2.85
Not applicable, did not receive federal student loan(s)	1,920	610	34.47	33.61	36.52	-0.85	-2.48	34.47	35.51	1.04	3.01

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-7. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)	
New England	470	170	14.17	14.24	14.04	0.07	0.47	14.17	14.28	0.11	0.76
Mideast	1,000	330	25.69	24.25	28.55	-1.44	-5.59	25.69	25.24	-0.45	-1.76
Great Lakes	820	210	14.55	15.69	12.27	1.15	7.87	14.55	14.67	0.12	0.84
Plains	650	140	10.30	10.01	10.86	-0.28	-2.76	10.30	10.13	-0.17	-1.62
Southeast	1,060	300	19.27	19.17	19.46	-0.10	-0.50	19.27	19.43	0.16	0.83
Southwest	260	70	3.90	3.83	4.05	-0.08	-1.93	3.90	3.90	#	#
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Far West	340	120	7.12	7.24	6.87	0.12	1.74	7.12	7.18	0.06	0.81
Outlying areas	90	40	2.24	2.13	2.46	-0.11	-5.03	2.24	2.15	-0.09	-3.90
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.05)				(Effect size = 0.03)	
1–2,507	1,240	340	28.69	29.98	26.13	1.29	4.48	28.69	28.34	-0.35	-1.21
2,508–4,874	1,280	300	21.36	22.61	18.88	1.25	5.85	21.36	22.32	0.96	4.48
4,875–11,571	1,190	390	22.41	21.47	24.27	-0.94	-4.18	22.41	21.81	-0.60	-2.68
11,572 or more	1,230	350	27.54	25.94	30.73	-1.60	-5.81	27.54	27.53	-0.01	-0.04
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)	
Received	1,830	480	23.50	24.26	21.97	0.77	3.27	23.50	24.70	1.20	5.11
Did not receive	3,060	890	73.90	74.04	73.61	0.14	0.19	73.90	73.52	-0.37	-0.50
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	3,060	890	73.90	74.04	73.61	0.14	0.19	73.90	73.52	-0.37	-0.50
\$1–\$2,155	630	150	8.34	8.24	8.53	-0.10	-1.18	8.34	8.87	0.53	6.38
\$2,156–\$4,309	740	190	8.77	9.57	7.18	0.80	9.10	8.77	8.91	0.13	1.52
\$4,310 or more	460	140	6.38	6.45	6.25	0.07	1.05	6.38	6.92	0.53	8.38
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Direct Loan status in 2007–08						(Effect size = 0.06)				(Effect size = 0.02)	
Received	3,000	820	56.96	59.89	51.15	2.92*	5.13	56.96	58.15	1.19	2.09
Did not receive	1,940	570	43.04	40.11	48.85	-2.92*	-6.79	43.04	41.85	-1.19	-2.76

See notes at end of table.

**Table K-7. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	1,940	570	43.04	40.11	48.85	-2.92*	-6.79	43.04	41.85	-1.19	-2.76
\$1–\$5,500	2,280	580	41.31	45.03	33.91	3.72*	9.01	41.31	42.33	1.02	2.48
\$5,501–\$5,531	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$5,532 or more	720	240	15.65	14.84	17.25	-0.80	-5.14	15.65	15.81	0.16	1.03
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	4,520	1,270	90.24	89.40	91.91	-0.84	-0.93	90.24	90.38	0.14	0.16
\$1–\$6,250	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$6,251–\$11,000	100	30	2.51	2.64	2.26	0.13	5.08	2.51	2.48	-0.03	-1.22
\$11,001–\$16,091	100	30	2.88	3.09	2.48	0.20	7.07	2.88	2.64	-0.24	-8.44
\$16,092 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal aid status in 2007–08						(Effect size = 0.08)				(Effect size = 0.04)	
Received	3,580	930	64.32	68.19	56.63	3.87*	6.01	64.32	66.31	1.99	3.09
Did not receive	1,360	460	35.68	31.81	43.37	-3.87*	-10.84	35.68	33.69	-1.99	-5.57
Institution aid status in 2007–08						(Effect size = 0.14)				(Effect size = 0.04)	
Received	3,610	880	59.89	66.61	46.51	6.73*	11.24	59.89	61.88	1.99	3.32
Did not receive	1,330	520	40.11	33.39	53.49	-6.73*	-16.77	40.11	38.12	-1.99	-4.96
State aid status in 2007–08						(Effect size = 0.06)				(Effect size = 0.01)	
Received	2,080	530	29.22	32.02	23.67	2.79*	9.56	29.22	29.82	0.59	2.03
Did not receive	2,850	860	70.78	67.98	76.33	-2.79*	-3.95	70.78	70.18	-0.59	-0.84
Any aid status in 2007–08						(Effect size = 0.13)				(Effect size = 0.06)	
Received	4,520	1,200	82.15	87.08	72.35	4.93*	6.00	82.15	84.31	2.15	2.62
Did not receive	420	190	17.85	12.92	27.65	-4.93*	-27.63	17.85	15.69	-2.15	-12.07
Social Security number available						(Effect size = 0.10)				(Effect size = 0.06)	
Available	4,900	1,360	97.37	99.05	94.04	1.68*	1.72	97.37	98.31	0.94	0.96
Not available	40	40	2.63	0.95	5.96	-1.68*	-63.74	2.63	1.69	-0.94	-35.59

See notes at end of table.



**Table K-7. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.03)	
Yes	200	80	3.70	4.11	2.91	0.40	10.83	3.70	4.24	0.54	14.48
No	4,730	1,310	96.30	95.89	97.09	-0.40	-0.42	96.30	95.76	-0.54	-0.56
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	3,630	890	68.63	73.81	58.33	5.18*	7.55	68.63	71.34	2.71	3.94
Black or African American, non-Hispanic	420	140	8.88	8.36	9.92	-0.52	-5.87	8.88	8.98	0.10	1.10
Hispanic	400	120	7.17	7.66	6.19	0.49	6.85	7.17	7.35	0.19	2.60
Asian, non-Hispanic	270	120	5.67	4.77	7.45	-0.90	-15.82	5.67	5.03	-0.64	-11.27
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	130	30	2.29	2.59	1.70	0.30	13.06	2.29	2.48	0.19	8.22
Unknown race and ethnicity	50	70	6.38	1.72	15.64	-4.66*	-73.04	6.38	3.69	-2.69*	-42.17
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	1,930	590	40.35	37.54	45.94	-2.81*	-6.97	40.35	40.71	0.36	0.89
Female	3,010	800	58.98	62.46	52.07	3.48*	5.90	58.98	59.29	0.31	0.52
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.11)				(Effect size = 0.05)	
None	1,850	470	34.91	37.89	29.00	2.98*	8.52	34.91	36.44	1.53	4.38
1–65 percent	540	130	10.87	11.87	8.89	1.00	9.18	10.87	11.21	0.34	3.10
66–114 percent	560	120	9.06	10.95	5.30	1.89*	20.90	9.06	10.07	1.01	11.17
115–146 percent	520	140	9.38	9.56	9.02	0.18	1.92	9.38	9.19	-0.19	-1.99
147 percent or more	460	190	10.65	8.47	14.98	-2.18*	-20.45	10.65	10.05	-0.60	-5.67
Not applicable, did not receive federal student loan(s)	1,010	340	25.13	21.26	32.82	-3.87*	-15.39	25.13	23.04	-2.09	-8.31

See notes at end of table.

**Table K-7. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.10)				(Effect size = 0.05)	
None	1,010	340	25.13	21.26	32.82	-3.87*	-15.39	25.13	23.04	-2.09	-8.31
\$1–\$17,125	1,080	300	23.25	24.10	21.56	0.85	3.66	23.25	24.36	1.10	4.75
\$17,126–\$28,199	880	230	17.58	18.53	15.68	0.96	5.44	17.58	18.33	0.75	4.25
\$28,200–\$61,502	960	280	19.89	20.02	19.62	0.13	0.67	19.89	19.98	0.09	0.47
\$61,503 or more	1,010	240	14.15	16.08	10.32	1.93*	13.62	14.15	14.30	0.14	1.02
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)	
Liberal arts	600	180	15.71	15.72	15.70	#	0.02	15.71	14.99	-0.73	-4.62
Psychology/history	560	150	13.11	14.60	10.16	1.49*	11.34	13.11	12.92	-0.19	-1.48
Biology	890	190	8.23	8.82	7.06	0.59	7.15	8.23	7.98	-0.25	-3.07
Physical sciences	160	30	1.44	1.26	1.79	-0.18	-12.34	1.44	1.34	-0.10	-6.65
Mathematics and statistics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Computer and information sciences	200	60	2.20	1.84	2.93	-0.37	-16.57	2.20	2.47	0.26	11.88
Engineering	250	60	3.27	3.44	2.94	0.17	5.08	3.27	3.71	0.44	13.43
Education	310	90	5.07	5.69	3.85	0.61*	12.09	5.07	5.25	0.17	3.39
Business	620	220	20.87	19.44	23.71	-1.43	-6.84	20.87	20.95	0.08	0.38
Health professions	320	90	6.33	6.12	6.75	-0.21	-3.36	6.33	6.01	-0.32	-5.11
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Agricultural sciences	370	130	9.42	9.93	8.41	0.51	5.42	9.42	10.20	0.78	8.28
Missing/unknown	490	160	12.43	11.52	14.25	-0.92	-7.37	12.43	12.35	-0.08	-0.67
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	3,690	960	69.80	74.32	60.81	4.52*	6.48	69.80	70.66	0.86	1.24
24–29	610	220	13.85	11.62	18.26	-2.22*	-16.04	13.85	12.67	-1.17	-8.46
30 or older	640	210	15.45	13.83	18.66	-1.62	-10.46	15.45	16.51	1.06	6.85
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-7. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.17)				(Effect size = 0.08)	
Yes, defaulted on federal student loan(s)	340	210	10.89	6.89	18.84	-4.00*	-36.73	10.89	9.34	-1.55	-14.23
No, did not default on federal student loan(s)	3,590	840	63.99	71.85	48.34	7.87*	12.30	63.99	67.62	3.64*	5.69
Not applicable, did not receive federal student loan(s)	1,010	340	25.13	21.26	32.82	-3.87*	-15.39	25.13	23.04	-2.09	-8.31

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-8. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Mideast	110	60	8.68	6.18	12.57	-2.50	-28.78	8.68	6.98	-1.70	-19.56	
Great Lakes	100	40	13.15	18.09	5.45	4.94	37.57	13.15	15.25	2.10	15.93	
Plains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Southeast	110	50	16.90	14.04	21.37	-2.87	-16.95	16.90	13.42	-3.48	-20.59	
Southwest	90	50	32.03	33.82	29.24	1.79	5.58	32.03	40.48	8.45	26.37	
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Far West	70	40	14.02	12.10	17.00	-1.92	-13.66	14.02	11.43	-2.59	-18.47	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.20)				(Effect size = 0.22)		
1–1,972	170	60	16.90	15.02	19.82	-1.88	-11.11	16.90	14.27	-2.63	-15.56	
1,973–3,355	140	70	17.61	21.50	11.56	3.88	22.05	17.61	19.86	2.24	12.74	
3,356–8,142	140	80	13.66	7.63	23.05	-6.02*	-44.10	13.66	7.16	-6.50*	-47.58	
8,143 or more	150	70	51.83	55.85	45.57	4.02	7.75	51.83	58.72	6.88	13.28	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	300	120	20.65	20.72	20.53	0.07	0.36	20.65	17.14	-3.50	-16.96	
Did not receive	300	150	65.90	58.08	78.09	-7.82	-11.86	65.90	63.63	-2.27	-3.44	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	300	150	65.90	58.08	78.09	-7.82	-11.86	65.90	63.63	-2.27	-3.44	
\$1–\$2,155	110	50	11.40	11.70	10.95	0.29	2.56	11.40	9.69	-1.71	-15.02	
\$2,156–\$4,309	110	50	5.9	5.27	6.95	-0.66	-11.07	5.93	4.44	-1.49	-25.18	
\$4,310 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Direct Loan status in 2007–08						(Effect size = 0.12)				(Effect size = 0.03)		
Received	430	180	64.54	70.26	55.63	5.72	8.85	64.54	63.21	-1.33	-2.07	
Did not receive	180	90	35.46	29.74	44.37	-5.72	-16.12	35.46	36.79	1.33	3.77	

See notes at end of table.

**Table K-8. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	180	90	35.46	29.74	44.37	-5.72	-16.12	35.46	36.79	1.33	3.77	
\$1–\$3,938	110	50	14.38	14.96	13.47	0.58	4.06	14.38	13.96	-0.42	-2.91	
\$3,939–\$5,500	110	40	16.90	14.65	20.41	-2.25	-13.32	16.90	13.32	-3.58	-21.19	
\$5,501–\$10,500	210	90	24.52	26.29	21.76	1.77	7.23	24.52	22.68	-1.84	-7.52	
\$10,501 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	580	260	95.85	94.99	97.21	-0.87	-0.90	95.85	94.84	-1.01	-1.06	
\$1–\$5,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,001–\$8,253	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$8,254–\$11,737	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$11,738 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.18)				(Effect size = 0.01)		
Received	490	200	70.01	78.03	57.50	8.02*	11.46	70.01	69.59	-0.42	-0.60	
Did not receive	120	70	29.99	21.97	42.50	-8.02*	-26.75	29.99	30.41	0.42	1.40	
Institution aid status in 2007–08						(Effect size = #)				(Effect size = 0.05)		
Received	180	60	10.81	10.94	10.62	0.13	1.16	10.81	9.11	-1.70	-15.75	
Did not receive	430	220	89.19	89.06	89.38	-0.13	-0.14	89.19	90.89	1.70	1.91	
State aid status in 2007–08						(Effect size = 0.10)				(Effect size = 0.16)		
Received	170	70	12.92	9.68	17.97	-3.24	-25.05	12.92	7.62	-5.30*	-41.01	
Did not receive	440	200	87.08	90.32	82.03	3.24	3.72	87.08	92.38	5.30*	6.09	
Any aid status in 2007–08						(Effect size = 0.25)				(Effect size = 0.02)		
Received	560	220	82.65	92.04	68.02	9.38*	11.35	82.65	81.79	-0.87	-1.05	
Did not receive	50	50	17.35	7.96	31.98	-9.38*	-54.10	17.35	18.21	0.87	4.99	
Social Security number available						(Effect size = ‡)				(Effect size = ‡)		
Available	610	270	96.90	99.53	92.78	2.64	2.72	96.90	99.56	2.67	2.75	
Not available	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-8. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.02)		
Yes	80	40	18.80	19.72	17.36	0.92	4.92	18.80	18.11	-0.68	-3.63	
No	530	240	81.20	80.28	82.64	-0.92	-1.14	81.20	81.89	0.68	0.84	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	310	120	41.41	37.61	47.32	-3.79	-9.16	41.41	36.10	-5.31	-12.82	
Black or African American, non-Hispanic	130	50	21.88	29.00	10.76	7.13	32.59	21.88	26.30	4.42*	20.22	
Hispanic	110	50	17.68	19.95	14.14	2.27	12.84	17.68	16.79	-0.89	-5.03	
Asian, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Unknown race and ethnicity	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	260	120	43.50	37.08	53.52	-6.42	-14.76	43.50	41.58	-1.92	-4.40	
Female	350	150	56.50	62.92	46.48	6.42	11.37	56.50	58.42	1.92	3.39	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.20)				(Effect size = 0.12)		
None	160	60	19.08	18.32	20.26	-0.76	-3.98	19.08	18.45	-0.63	-3.29	
1–103 percent	100	50	26.46	33.41	15.63	6.95*	26.25	26.46	30.75	4.28	16.19	
104–141 percent	110	30	9.96	10.68	8.83	0.72	7.24	9.96	8.72	-1.23	-12.40	
142–166 percent	100	40	8.79	6.96	11.65	-1.83	-20.85	8.79	6.68	-2.12	-24.07	
167 percent or more	90	50	17.56	17.78	17.21	0.22	1.27	17.56	16.51	-1.05	-6.00	
Not applicable, did not receive federal student loan(s)	60	30	18.15	12.85	26.41	-5.30	-29.19	18.15	18.90	0.75	4.13	

See notes at end of table.

**Table K-8. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.21)				(Effect size = 0.11)		
None	60	30	18.15	12.85	26.41	-5.30	-29.19	18.15	18.90	0.75	4.13	
\$1–\$23,046	140	60	20.19	18.10	23.44	-2.08	-10.33	20.19	19.41	-0.78	-3.86	
\$23,047–\$35,955	130	70	23.09	25.48	19.37	2.39	10.34	23.09	23.38	0.29	1.27	
\$35,956–\$50,287	140	60	16.21	14.38	19.06	-1.83	-11.28	16.21	12.96	-3.25	-20.03	
\$50,288 or more	140	60	22.37	29.19	11.73	6.82*	30.51	22.37	25.35	2.98	13.34	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	130	60	6.75	5.12	9.29	-1.63	-24.14	6.75	4.24	-2.50	-37.10	
Psychology/history	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Biology	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	130	50	12.03	11.67	12.59	-0.36	-2.98	12.03	11.57	-0.47	-3.88	
Engineering	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Business	130	70	41.87	40.09	44.63	-1.77	-4.23	41.87	44.67	2.81	6.71	
Health professions	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	120	50	9.16	7.24	12.15	-1.91	-20.91	9.16	6.71	-2.45	-26.74	
Missing/unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of Dec. 31, 2007						(Effect size = 0.09)				(Effect size = 0.05)		
15–23	140	60	12.68	11.14	15.09	-1.54	-12.18	12.68	10.98	-1.70	-13.43	
24–29	200	100	30.17	27.31	34.63	-2.86	-9.49	30.17	31.45	1.28	4.24	
30 or older	260	110	57.15	61.56	50.28	4.41	7.71	57.15	57.57	0.42	0.74	

See notes at end of table.

**Table K-8. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.15)			(Effect size = 0.08)	
Yes, defaulted on federal student loan(s)	150	80	34.31	39.36	26.43	5.05	14.72	34.31	37.56	3.25	9.47
No, did not default on federal student loan(s)	410	160	47.54	47.79	47.16	0.25	0.52	47.54	43.54	-4.00	-8.41
Not applicable, did not receive federal student loan(s)	60	30	18.15	12.85	26.41	-5.30	-29.19	18.15	18.90	0.75	4.13

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).



**Table K-9. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Control of baccalaureate-granting institution <sup>4</sup>						(Effect size = 0.03)				(Effect size = 0.01)	
Public	8,000	1,790	62.55	63.64	59.54	1.09	1.74	62.55	62.78	0.23	0.36
Private nonprofit	5,010	1,280	32.91	32.21	34.84	-0.70	-2.11	32.91	32.75	-0.15	-0.47
Private for-profit	670	210	4.54	4.15	5.62	-0.39	-8.59	4.54	4.46	-0.07	-1.63
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.06)				(Effect size = 0.01)	
New England	710	160	6.99	7.09	6.70	0.10	1.48	6.99	6.91	-0.08	-1.11
Mideast	2,320	690	17.66	16.63	20.51	-1.03	-5.82	17.66	17.52	-0.13	-0.76
Great Lakes	2,160	490	16.01	17.13	12.89	1.12	7.02	16.01	15.90	-0.11	-0.70
Plains	1,840	280	8.39	8.95	6.84	0.56	6.67	8.39	8.44	0.05	0.54
Southeast	3,010	880	24.22	23.12	27.26	-1.10	-4.53	24.22	24.46	0.24	0.99
Southwest	1,140	240	9.49	9.53	9.40	0.03	0.35	9.49	9.36	-0.13	-1.39
Rocky Mountains	720	60	3.88	4.53	2.09	0.65*	16.66	3.88	3.89	0.01	0.13
Far West	1,570	450	11.92	11.51	13.07	-0.41	-3.45	11.92	12.12	0.19	1.60
Outlying areas	190	40	1.43	1.50	1.25	0.07	4.73	1.43	1.41	-0.03	-1.75
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.05)				(Effect size = 0.01)	
1–4,764	3,410	830	21.11	21.34	20.47	0.23	1.10	21.11	20.96	-0.15	-0.72
4,765–13,042	3,360	880	21.09	20.50	22.74	-0.60	-2.83	21.09	21.08	-0.02	-0.07
13,043–27,210	3,390	890	26.78	25.31	30.85	-1.47	-5.49	26.78	26.98	0.20	0.75
27,211 or more	3,510	690	31.02	32.85	25.93	1.83*	5.91	31.02	30.99	-0.03	-0.11
Pell Grant status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)	
Received	5,440	1,220	24.96	25.62	23.11	0.67	2.67	24.96	25.23	0.27	1.09
Did not receive	8,060	2,030	72.14	71.56	73.75	-0.58	-0.80	72.14	71.82	-0.32	-0.44
Unknown	170	40	2.90	2.82	3.14	-0.09	-2.94	2.90	2.95	0.05	1.67
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.02)				(Effect size = 0.01)	
None	8,060	2,030	72.14	71.56	73.75	-0.58	-0.80	72.14	71.82	-0.32	-0.44
\$1–\$2,155	1,930	400	9.57	9.69	9.25	0.11	1.20	9.57	9.58	0.01	0.06
\$2,156–\$4,309	2,140	490	8.94	9.60	7.09	0.67*	7.45	8.94	9.18	0.24	2.73
\$4,310 or more	1,370	330	6.45	6.33	6.77	-0.11	-1.77	6.45	6.47	0.02	0.34
Unknown	170	40	2.90	2.82	3.14	-0.09	-2.94	2.90	2.95	0.05	1.67

See notes at end of table.

**Table K-9. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan status in 2007–08						(Effect size = 0.03)				(Effect size = 0.01)	
Received	7,590	1,760	48.39	50.11	43.61	1.72*	3.56	48.39	48.82	0.43	0.89
Did not receive	6,090	1,530	51.61	49.89	56.39	-1.72*	-3.34	51.61	51.18	-0.43	-0.84
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.04)				(Effect size = 0.01)	
None	6,090	1,530	51.61	49.89	56.39	-1.72*	-3.34	51.61	51.18	-0.43	-0.84
\$1–\$4,400	1,930	410	11.60	11.93	10.67	0.33	2.87	11.60	11.66	0.06	0.52
\$4,401–\$5,500	3,640	840	22.94	24.38	18.95	1.44*	6.27	22.94	22.94	#	#
\$5,501–\$6,394	170	30	1.09	1.00	1.32	-0.08	-7.80	1.09	1.09	0.01	0.47
\$6,395 or more	1,840	480	12.76	12.79	12.66	0.03	0.27	12.76	13.13	0.37	2.89
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.03)				(Effect size = #)	
None	12,820	3,110	93.39	92.88	94.80	-0.51*	-0.54	93.39	93.35	-0.04	-0.04
\$1–\$5,000	210	50	1.43	1.45	1.36	0.02	1.62	1.43	1.47	0.05	3.17
\$5,001–\$9,396	210	50	1.64	1.63	1.67	-0.01	-0.53	1.64	1.62	-0.03	-1.58
\$9,397–\$14,000	220	40	1.81	2.04	1.17	0.23	12.68	1.81	1.83	0.02	0.92
\$14,001 or more	210	50	1.74	2.00	1.00	0.26*	15.24	1.74	1.74	#	0.05
Federal aid status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)	
Received	9,400	2,110	56.44	58.55	50.58	2.11*	3.74	56.44	57.01	0.57	1.01
Did not receive	4,280	1,180	43.56	41.45	49.42	-2.11*	-4.85	43.56	42.99	-0.57	-1.30
Institution aid status in 2007–08						(Effect size = 0.07)				(Effect size = 0.01)	
Received	7,120	1,500	39.97	43.47	30.28	3.49*	8.74	39.97	39.68	-0.30	-0.74
Did not receive	6,560	1,790	60.03	56.53	69.72	-3.49*	-5.82	60.03	60.32	0.30	0.49
State aid status in 2007–08						(Effect size = 0.04)				(Effect size = #)	
Received	5,570	1,180	27.54	29.43	22.31	1.89*	6.85	27.54	27.42	-0.12	-0.45
Did not receive	8,100	2,110	72.46	70.57	77.69	-1.89*	-2.60	72.46	72.58	0.12	0.17
Any aid status in 2007–08						(Effect size = 0.08)				(Effect size = 0.01)	
Received	11,720	2,640	74.61	78.12	64.88	3.51*	4.70	74.61	74.91	0.30	0.40
Did not receive	1,950	650	25.39	21.88	35.12	-3.51*	-13.82	25.39	25.09	-0.30	-1.18

See notes at end of table.

**Table K-9. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Social Security number available						(Effect size = 0.04)				(Effect size = #)	
Available	13,400	3,170	96.10	96.93	93.81	0.83*	0.86	96.10	96.13	0.02	0.02
Not available	270	120	3.90	3.07	6.19	-0.83*	-21.23	3.90	3.87	-0.02	-0.52
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = #)	
Yes	630	200	4.20	4.03	4.65	-0.16	-3.92	4.20	4.12	-0.07	-1.75
No	13,040	3,090	95.80	95.97	95.35	0.16	0.17	95.80	95.88	0.07	0.08
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	9,780	2,060	67.99	70.73	60.37	2.74*	4.04	67.99	69.48	1.49*	2.19
Black or African American, non-Hispanic	1,230	350	9.39	9.28	9.70	-0.11	-1.20	9.39	9.48	0.09	0.91
Hispanic	1,200	310	8.95	9.38	7.74	0.43	4.85	8.95	8.91	-0.04	-0.42
Asian, non-Hispanic	860	300	6.46	6.03	7.63	-0.42	-6.56	6.46	6.43	-0.03	-0.43
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	320	90	1.95	2.05	1.65	0.11	5.47	1.95	1.96	0.01	0.51
Unknown race and ethnicity	170	140	4.49	1.76	12.07	-2.73*	-60.78	4.49	2.98	-1.51*	-33.54
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	5,600	1,480	42.77	40.49	49.10	-2.28*	-5.34	42.77	42.87	0.10	0.23
Female	8,080	1,810	56.84	59.51	49.42	2.67*	4.70	56.84	57.13	0.29	0.51
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-9. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.03)		
None	4,780	1,070	30.99	31.45	29.73	0.46	1.47	30.99	30.44	-0.55	-1.77	
1–69 percent	1,520	320	10.58	11.37	8.39	0.79*	7.47	10.58	10.40	-0.18	-1.69	
70–116 percent	1,520	320	9.65	10.33	7.76	0.68*	7.05	9.65	9.48	-0.17	-1.75	
117–146 percent	1,470	320	9.12	9.54	7.94	0.43	4.66	9.12	8.96	-0.16	-1.75	
147 percent or more	1,380	410	10.21	9.53	12.11	-0.68	-6.69	10.21	10.03	-0.18	-1.75	
Not applicable, did not borrow federal student loan(s)	3,010	850	29.44	27.78	34.07	-1.67*	-5.67	29.44	30.68	1.24*	4.20	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.03)		
None	3,010	850	29.44	27.78	34.07	-1.67*	-5.67	29.44	30.68	1.24*	4.20	
\$1–\$16,735	2,650	630	19.57	18.66	22.08	-0.90	-4.62	19.57	19.22	-0.34	-1.75	
\$16,736–\$27,586	2,660	620	17.85	18.22	16.82	0.37	2.09	17.85	17.54	-0.31	-1.75	
\$27,587–\$57,914	2,660	620	18.24	19.26	15.39	1.03*	5.62	18.24	17.92	-0.32	-1.75	
\$57,915 or more	2,710	570	14.90	16.08	11.64	1.17*	7.88	14.90	14.64	-0.26	-1.75	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	1,690	410	12.93	12.96	12.87	0.02	0.19	12.93	12.90	-0.03	-0.23	
Psychology/history	1,670	370	13.19	14.31	10.10	1.11*	8.44	13.19	13.09	-0.11	-0.81	
Biology	2,190	470	8.89	9.32	7.70	0.43	4.84	8.89	8.84	-0.06	-0.62	
Physical sciences	390	80	1.70	1.54	2.14	-0.16	-9.35	1.70	1.67	-0.03	-1.72	
Mathematics and statistics	290	50	0.93	0.96	0.85	0.03	3.11	0.93	0.91	-0.02	-1.75	
Computer and information sciences	580	150	2.45	2.13	3.32	-0.31	-12.86	2.45	2.41	-0.03	-1.40	
Engineering	970	220	5.17	5.27	4.92	0.09	1.79	5.17	5.25	0.07	1.41	
Education	960	190	6.08	6.54	4.80	0.46*	7.61	6.08	6.00	-0.08	-1.31	
Business	1,450	460	19.84	19.03	22.11	-0.82	-4.12	19.84	19.79	-0.05	-0.27	
Health professions	880	190	6.12	6.18	5.95	0.06	0.98	6.12	6.28	0.16	2.68	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	1,400	370	11.14	10.82	12.02	-0.32	-2.83	11.14	11.32	0.18	1.62	
Missing/unknown	1,140	320	11.04	10.43	12.74	-0.61	-5.54	11.04	11.04	#	-0.03	

See notes at end of table.

**Table K-9. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	9,320	2,060	65.35	68.25	57.29	2.91*	4.45	65.35	65.35	#	#
24–29	2,600	710	20.23	18.60	24.75	-1.63*	-8.05	20.23	20.28	0.05	0.25
30 or older	1,750	510	14.08	13.08	16.84	-1.00	-7.07	14.08	14.31	0.24	1.68
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.07)				(Effect size = 0.03)	
Yes, defaulted on federal student loan(s)	1,110	460	10.82	9.21	15.31	-1.62*	-14.95	10.82	10.63	-0.19	-1.75
No, did not default on federal student loan(s)	9,560	1,980	59.73	63.02	50.61	3.29*	5.50	59.73	58.69	-1.05	-1.75
Not applicable, did not receive federal student loan(s)	3,010	850	29.44	27.78	34.07	-1.67*	-5.67	29.44	30.68	1.24*	4.20

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-10. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	170	60	3.65	3.02	5.50	-0.62	-17.10	3.65	2.96	-0.69	-18.82	
Mideast	1,190	330	13.95	13.07	16.55	-0.88	-6.30	13.95	13.71	-0.23	-1.67	
Great Lakes	1,250	250	17.07	18.30	13.44	1.23	7.18	17.07	17.31	0.23	1.35	
Plains	1,070	160	7.59	8.37	5.25	0.79*	10.38	7.59	7.74	0.15	1.95	
Southeast	1,860	520	27.53	26.59	30.32	-0.94	-3.42	27.53	28.17	0.64	2.32	
Southwest	760	170	10.78	10.67	11.10	-0.11	-1.00	10.78	10.18	-0.60	-5.61	
Rocky Mountains	430	40	4.28	4.85	2.59	0.57	13.28	4.28	4.06	-0.23	-5.26	
Far West	1,180	280	14.29	14.26	14.36	-0.03	-0.18	14.29	15.14	0.85	5.98	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.04)				(Effect size = 0.02)		
1–11,664	2,040	440	19.73	19.96	19.05	0.23	1.16	19.73	20.31	0.58	2.96	
11,665–20,095	1,910	520	24.26	22.46	29.59	-1.80	-7.42	24.26	23.42	-0.83	-3.43	
20,096–31,916	2,010	440	25.10	25.26	24.62	0.16	0.65	25.10	25.64	0.54	2.15	
31,917 or more	2,040	400	30.91	32.32	26.73	1.41	4.56	30.91	30.62	-0.29	-0.94	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	3,250	700	25.99	26.22	25.31	0.23	0.88	25.99	25.84	-0.15	-0.58	
Did not receive	4,630	1,080	71.59	71.16	72.86	-0.43	-0.60	71.59	71.61	0.03	0.04	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	4,630	1,080	71.59	71.16	72.86	-0.43	-0.60	71.59	71.61	0.03	0.04	
\$1–\$2,155	1,170	240	10.09	9.96	10.50	-0.14	-1.37	10.09	9.82	-0.27	-2.69	
\$2,156–\$4,309	1,270	280	9.21	9.81	7.42	0.60	6.56	9.21	9.37	0.16	1.75	
\$4,310 or more	800	190	6.69	6.45	7.39	-0.24	-3.54	6.69	6.65	-0.04	-0.63	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Direct Loan status in 2007–08						(Effect size = 0.03)				(Effect size = #)		
Received	4,080	860	42.94	44.24	39.10	1.30	3.02	42.94	43.14	0.20	0.47	
Did not receive	3,920	930	57.06	55.76	60.90	-1.30	-2.27	57.06	56.86	-0.20	-0.35	

See notes at end of table.

**Table K-10. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	3,920	930	57.06	55.76	60.90	-1.30	-2.27	57.06	56.86	-0.20	-0.35	
\$1–\$3,756	1,030	210	10.17	10.18	10.14	0.01	0.11	10.17	9.99	-0.18	-1.73	
\$3,757–\$5,500	2,010	420	20.87	21.97	17.61	1.10*	5.27	20.87	20.91	0.05	0.22	
\$5,501–\$5,843	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,844 or more	1,000	230	11.68	11.85	11.18	0.17	1.45	11.68	11.98	0.30	2.59	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	7,600	1,730	94.90	94.45	96.23	-0.45*	-0.47	94.90	94.55	-0.35	-0.37	
\$1–\$4,500	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$4,501–\$7,438	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$7,439–\$12,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$12,001 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.03)				(Effect size = #)		
Received	5,240	1,110	51.50	52.76	47.77	1.26	2.45	51.50	51.38	-0.12	-0.23	
Did not receive	2,760	690	48.50	47.24	52.23	-1.26	-2.60	48.50	48.62	0.12	0.25	
Institution aid status in 2007–08						(Effect size = 0.06)				(Effect size = 0.01)		
Received	3,300	630	31.38	34.06	23.45	2.67*	8.52	31.38	31.04	-0.34	-1.07	
Did not receive	4,700	1,170	68.62	65.94	76.55	-2.67*	-3.90	68.62	68.96	0.34	0.49	
State aid status in 2007–08						(Effect size = 0.05)				(Effect size = 0.01)		
Received	3,290	620	27.60	30.05	20.35	2.45*	8.86	27.60	28.13	0.53	1.93	
Did not receive	4,710	1,180	72.40	69.95	79.65	-2.45*	-3.38	72.40	71.87	-0.53	-0.73	
Any aid status in 2007–08						(Effect size = 0.07)				(Effect size = #)		
Received	6,540	1,360	70.17	73.27	60.98	3.10*	4.42	70.17	69.96	-0.21	-0.29	
Did not receive	1,460	440	29.83	26.73	39.02	-3.10*	-10.39	29.83	30.04	0.21	0.69	
Social Security number available						(Effect size = 0.02)				(Effect size = 0.03)		
Available	7,770	1,710	95.40	95.81	94.18	0.41	0.43	95.40	94.86	-0.54	-0.57	
Not available	230	80	4.60	4.19	5.82	-0.41	-8.90	4.60	5.14	0.54	11.72	

See notes at end of table.

**Table K-10. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)		
Yes	330	100	3.37	3.03	4.39	-0.34	-10.18	3.37	3.13	-0.24	-7.09	
No	7,660	1,690	96.63	96.97	95.61	0.34	0.36	96.63	96.87	0.24	0.25	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	5,810	1,120	69.46	72.02	61.89	2.55*	3.68	69.46	71.39	1.93*	2.77	
Black or African American, non-Hispanic	660	170	8.97	8.49	10.39	-0.48	-5.36	8.97	8.49	-0.48	-5.36	
Hispanic	660	160	9.20	9.45	8.46	0.25	2.72	9.20	9.05	-0.16	-1.70	
Asian, non-Hispanic	540	200	6.88	6.40	8.31	-0.48	-6.99	6.88	6.94	0.06	0.81	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	190	50	1.82	1.95	1.45	0.13	6.99	1.82	1.80	-0.02	-1.32	
Unknown race and ethnicity	80	80	2.95	1.03	8.62	-1.91*	-64.95	2.95	1.71	-1.24*	-42.02	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	3,310	870	43.79	41.79	49.74	-2.01*	-4.58	43.79	43.99	0.20	0.45	
Female	4,690	920	55.94	58.21	49.18	2.28*	4.07	55.94	56.01	0.07	0.13	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.03)				(Effect size = 0.05)		
None	2,740	590	29.62	29.44	30.15	-0.18	-0.61	29.62	28.62	-0.99	-3.36	
1–68 percent	850	160	8.86	9.43	7.19	0.56	6.35	8.86	8.49	-0.37	-4.18	
69–114 percent	860	150	9.49	9.83	8.46	0.35	3.65	9.49	9.09	-0.40	-4.23	
115–143 percent	840	160	9.16	9.69	7.59	0.53	5.79	9.16	9.09	-0.07	-0.81	
144 percent or more	780	210	9.81	9.40	11.04	-0.41	-4.21	9.81	9.49	-0.33	-3.32	
Not applicable, did not receive federal student loan(s)	1,930	530	33.06	32.21	35.57	-0.85	-2.56	33.06	35.22	2.17*	6.55	

See notes at end of table.



**Table K-10. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.04)				(Effect size = 0.05)		
None	1,930	530	33.06	32.21	35.57	-0.85	-2.56	33.06	35.22	2.17*	6.55	
\$1–\$15,070	1,480	350	18.04	17.29	20.25	-0.74	-4.13	18.04	17.81	-0.23	-1.25	
\$15,071–\$25,683	1,510	330	16.32	16.40	16.09	0.08	0.48	16.32	15.81	-0.51	-3.11	
\$25,684–\$56,748	1,520	310	18.16	18.32	17.70	0.16	0.86	18.16	16.71	-1.46*	-8.02	
\$56,749 or more	1,560	280	14.42	15.78	10.40	1.35*	9.39	14.42	14.45	0.03	0.18	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	930	200	11.85	11.95	11.56	0.10	0.83	11.85	12.09	0.24	2.02	
Psychology/history	1,110	210	14.10	15.08	11.22	0.97*	6.89	14.10	13.95	-0.15	-1.08	
Biology	1,330	250	9.78	10.55	7.51	0.77*	7.82	9.78	10.16	0.38	3.90	
Physical sciences	220	50	1.96	1.76	2.55	-0.20	-10.24	1.96	2.03	0.07	3.59	
Mathematics and statistics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	230	60	1.87	1.71	2.33	-0.16	-8.33	1.87	1.96	0.09	4.64	
Engineering	690	170	6.51	6.45	6.68	-0.06	-0.87	6.51	6.33	-0.19	-2.86	
Education	640	110	7.02	7.50	5.62	0.47	6.72	7.02	7.03	0.01	0.13	
Business	660	210	17.80	16.85	20.64	-0.96	-5.37	17.80	17.39	-0.41	-2.29	
Health professions	510	110	5.77	5.51	6.56	-0.27	-4.60	5.77	5.53	-0.24	-4.19	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	880	220	12.13	11.56	13.79	-0.56	-4.63	12.13	12.04	-0.08	-0.70	
Missing/unknown	590	170	9.93	9.69	10.62	-0.24	-2.37	9.93	10.16	0.23	2.34	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	5,440	1,120	66.53	68.94	59.39	2.41*	3.62	66.53	66.53	#	#	
24–29	1,740	450	22.95	21.52	27.18	-1.43*	-6.22	22.95	23.36	0.41	1.79	
30 or older	830	220	10.45	9.54	13.14	-0.91*	-8.69	10.45	10.11	-0.34	-3.24	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-10. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.05)				(Effect size = 0.05)
Yes, defaulted on federal student loan(s)	580	210	9.01	7.77	12.68	-1.24*	-13.74	9.01	8.91	-0.10	-1.07
No, did not default on federal student loan(s)	5,490	1,060	57.94	60.02	51.76	2.08*	3.60	57.94	55.87	-2.07*	-3.57
Not applicable, did not receive federal student loan(s)	1,930	530	33.06	32.21	35.57	-0.85	-2.56	33.06	35.22	2.17*	6.55

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-11. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	540	100	14.30	16.04	9.84	1.74*	12.16	14.30	15.42	1.12	7.84	
Mideast	1,000	330	25.94	24.85	28.74	-1.09	-4.20	25.94	26.21	0.27	1.03	
Great Lakes	800	220	14.38	14.89	13.07	0.51	3.54	14.38	13.51	-0.87	-6.05	
Plains	680	100	10.29	10.72	9.21	0.42	4.10	10.29	10.42	0.13	1.24	
Southeast	1,030	320	18.95	17.59	22.44	-1.36	-7.18	18.95	18.78	-0.17	-0.87	
Southwest	290	40	3.93	4.07	3.56	0.14	3.68	3.93	3.85	-0.08	-1.97	
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Far West	310	140	7.14	5.95	10.20	-1.19	-16.68	7.14	6.22	-0.92	-12.92	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.05)				(Effect size = 0.07)		
1–2,507	1,260	320	28.97	29.34	28.02	0.37	1.27	28.97	27.48	-1.48	-5.12	
2,508–4,874	1,280	290	21.25	23.02	16.71	1.77	8.33	21.25	22.98	1.73	8.14	
4,875–11,571	1,170	400	21.95	20.20	26.41	-1.74	-7.93	21.95	19.93	-2.02	-9.21	
11,572 or more	1,300	270	27.84	27.44	28.86	-0.40	-1.43	27.84	29.61	1.77	6.37	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	1,870	420	23.59	24.85	20.37	1.26	5.33	23.59	24.75	1.15	4.88	
Did not receive	3,100	840	74.06	74.07	74.01	0.02	0.02	74.06	73.70	-0.35	-0.48	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	3,100	840	74.06	74.07	74.01	0.02	0.02	74.06	73.70	-0.35	-0.48	
\$1–\$2,155	640	130	8.34	8.63	7.60	0.29	3.45	8.34	8.72	0.39	4.64	
\$2,156–\$4,309	750	170	8.84	9.76	6.46	0.93*	10.47	8.84	9.42	0.59	6.63	
\$4,310 or more	480	120	6.42	6.47	6.31	0.04	0.68	6.42	6.60	0.18	2.78	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Direct Loan status in 2007–08						(Effect size = 0.06)				(Effect size = 0.02)		
Received	3,040	750	56.51	59.38	49.15	2.87*	5.08	56.51	57.72	1.21	2.14	
Did not receive	1,970	530	43.49	40.62	50.85	-2.87*	-6.60	43.49	42.28	-1.21	-2.78	

See notes at end of table.

**Table K-11. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan amount received in 2007–08						(Effect size = 0.08)				(Effect size = 0.02)	
None	1,970	530	43.49	40.62	50.85	-2.87*	-6.60	43.49	42.28	-1.21	-2.78
\$1–\$5,500	2,300	550	41.65	45.46	31.87	3.81*	9.15	41.65	42.50	0.85	2.04
\$5,501 or more	740	200	14.87	13.93	17.28	-0.94	-6.32	14.87	15.23	0.36	2.42
Parent PLUS Loan amount received in 2007–08 <sup>b</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	4,570	1,190	90.16	88.98	93.21	-1.19*	-1.32	90.16	90.27	0.11	0.12
\$1–\$6,250	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$6,251–\$11,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$11,001–\$16,091	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
\$16,092 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal aid status in 2007–08						(Effect size = 0.08)				(Effect size = 0.04)	
Received	3,630	850	63.96	67.78	54.16	3.82*	5.97	63.96	65.95	1.99	3.11
Did not receive	1,380	430	36.04	32.22	45.84	-3.82*	-10.60	36.04	34.05	-1.99	-5.52
Institution aid status in 2007–08						(Effect size = 0.12)				(Effect size = #)	
Received	3,630	830	60.32	66.13	45.42	5.81*	9.63	60.32	60.29	-0.04	-0.06
Did not receive	1,380	460	39.68	33.87	54.58	-5.81*	-14.64	39.68	39.71	0.04	0.09
State aid status in 2007–08						(Effect size = 0.02)				(Effect size = 0.03)	
Received	2,100	510	29.44	30.34	27.14	0.90	3.05	29.44	28.30	-1.14	-3.87
Did not receive	2,910	770	70.56	69.66	72.86	-0.90	-1.27	70.56	71.70	1.14	1.62
Any aid status in 2007–08						(Effect size = 0.11)				(Effect size = 0.04)	
Received	4,570	1,110	81.95	86.26	70.91	4.30*	5.25	81.95	83.35	1.39	1.70
Did not receive	440	170	18.05	13.74	29.09	-4.30*	-23.84	18.05	16.65	-1.39	-7.73
Social Security number available						(Effect size = 0.09)				(Effect size = 0.05)	
Available	4,970	1,250	97.34	98.81	93.57	1.47*	1.51	97.34	98.08	0.74	0.76
Not available	40	30	2.66	1.19	6.43	-1.47*	-55.28	2.66	1.92	-0.74	-27.97

See notes at end of table.

**Table K-11. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = 0.02)		
Yes	210	80	3.75	3.88	3.43	0.13	3.38	3.75	4.16	0.40	10.75	
No	4,800	1,210	96.25	96.12	96.57	-0.13	-0.13	96.25	95.84	-0.40	-0.42	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	3,650	850	68.85	71.85	61.16	3.00*	4.36	68.85	69.44	0.59	0.85	
Black or African American, non-Hispanic	420	140	8.47	8.49	8.42	0.02	0.25	8.47	9.32	0.85	10.07	
Hispanic	420	110	7.25	7.85	5.71	0.60	8.30	7.25	7.30	0.05	0.75	
Asian, non-Hispanic	290	90	5.70	5.74	5.60	0.04	0.70	5.70	5.91	0.21	3.60	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	120	40	2.29	2.33	2.20	0.03	1.49	2.29	2.36	0.07	2.94	
Unknown race and ethnicity	70	50	6.46	2.73	16.03	-3.73*	-57.70	6.46	4.60	-1.86	-28.81	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	2,010	510	40.73	37.84	48.14	-2.89*	-7.09	40.73	40.47	-0.25	-0.63	
Female	3,000	780	58.60	62.16	49.46	3.56*	6.08	58.60	59.53	0.93	1.58	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.10)				(Effect size = 0.02)		
None	1,880	430	35.25	37.28	30.04	2.03	5.76	35.25	35.80	0.56	1.58	
1–64 percent	550	120	10.98	12.16	7.96	1.18*	10.72	10.98	11.01	0.03	0.30	
65–113 percent	530	130	9.09	10.25	6.11	1.16*	12.77	9.09	9.39	0.30	3.33	
114–146 percent	550	140	9.75	10.05	8.97	0.30	3.08	9.75	9.45	-0.30	-3.05	
147 percent or more	490	160	10.79	9.22	14.80	-1.56	-14.50	10.79	10.32	-0.47	-4.34	
Not applicable, did not receive federal student loan(s)	1,010	300	24.15	21.04	32.11	-3.10*	-12.86	24.15	24.02	-0.13	-0.52	

See notes at end of table.

**Table K-11. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non- respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non- respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.08)				(Effect size = 0.03)		
None	1,010	300	24.15	21.04	32.11	-3.10*	-12.86	24.15	24.02	-0.13	-0.52	
\$1–\$17,125	1,130	250	23.56	23.76	23.03	0.20	0.87	23.56	23.92	0.36	1.53	
\$17,126–\$28,199	880	230	17.81	18.60	15.78	0.79	4.43	17.81	17.97	0.17	0.93	
\$28,200–\$61,502	980	260	20.15	21.59	16.46	1.44*	7.14	20.15	20.75	0.60	2.97	
\$61,503 or more	1,000	240	14.34	15.01	12.61	0.67	4.69	14.34	13.34	-1.00	-6.96	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	610	170	15.85	15.89	15.74	0.04	0.26	15.85	15.53	-0.32	-2.02	
Psychology/history	550	160	13.23	14.55	9.82	1.33*	10.03	13.23	13.14	-0.08	-0.64	
Biology	860	220	8.28	7.91	9.21	-0.36	-4.41	8.28	7.31	-0.97	-11.72	
Physical sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Mathematics and statistics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	220	50	2.22	1.78	3.35	-0.44	-19.72	2.22	2.25	0.03	1.27	
Engineering	260	40	3.31	3.58	2.63	0.27	8.05	3.31	3.88	0.57	17.10	
Education	320	80	5.12	5.50	4.16	0.38	7.35	5.12	4.84	-0.29	-5.58	
Business	640	200	20.68	19.94	22.59	-0.74	-3.59	20.68	20.41	-0.27	-1.32	
Health professions	330	70	5.88	6.49	4.31	0.61	10.38	5.88	6.74	0.87	14.73	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	390	110	9.54	9.71	9.11	0.17	1.76	9.54	10.37	0.83	8.67	
Missing/unknown	510	130	12.50	11.52	15.00	-0.98	-7.80	12.50	12.56	0.06	0.46	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	3,730	890	70.37	74.66	59.37	4.29*	6.09	70.37	70.96	0.59	0.84	
24–29	640	180	13.69	11.78	18.62	-1.92	-14.01	13.69	13.27	-0.42	-3.08	
30 or older	640	200	15.02	13.36	19.27	-1.66	-11.04	15.02	15.59	0.57	3.79	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-11. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.13)				(Effect size = 0.04)
Yes, defaulted on federal student loan(s)	370	180	11.03	8.03	18.71	-3.00*	-27.16	11.03	9.85	-1.18	-10.69
No, did not default on federal student loan(s)	3,630	810	64.82	70.92	49.17	6.10*	9.41	64.82	66.13	1.31	2.01
Not applicable, did not receive federal student loan(s)	1,010	300	24.15	21.04	32.11	-3.10*	-12.86	24.15	24.02	-0.13	-0.52

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-12. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Mideast	130	40	8.66	7.35	11.35	-1.31	-15.15	8.66	7.31	-1.36	-15.65	
Great Lakes	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Plains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Southeast	110	50	16.90	13.02	24.85	-3.88	-22.95	16.90	14.02	-2.87	-17.01	
Southwest	100	40	32.07	34.25	27.60	2.18	6.80	32.07	38.30	6.23	19.42	
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Far West	80	40	14.03	12.54	17.09	-1.49	-10.65	14.03	12.80	-1.23	-8.79	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.11)				(Effect size = 0.13)		
1–1,972	190	50	16.84	14.63	21.36	-2.21	-13.12	16.84	15.19	-1.64	-9.76	
1,973–3,355	150	50	17.59	16.91	18.98	-0.68	-3.87	17.59	16.76	-0.83	-4.69	
3,356–8,142	170	60	13.67	11.39	18.34	-2.28	-16.68	13.67	10.31	-3.36	-24.58	
8,143 or more	160	60	51.90	57.07	41.31	5.17	9.96	51.90	57.73	5.83	11.23	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	330	90	20.57	22.43	16.76	1.86	9.04	20.57	20.18	-0.39	-1.87	
Did not receive	330	110	65.96	58.33	81.60	-7.63*	-11.57	65.96	60.99	-4.97	-7.54	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	330	110	65.96	58.33	81.60	-7.63*	-11.57	65.96	60.99	-4.97	-7.54	
\$1–\$2,155	120	30	11.32	13.78	6.28	2.46	21.73	11.32	12.39	1.07	9.47	
\$2,156–\$4,309	120	40	5.94	5.16	7.53	-0.78	-13.09	5.94	4.77	-1.16	19.62	
\$4,310 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Direct Loan status in 2007–08						(Effect size = 0.08)				(Effect size = 0.02)		
Received	470	140	64.52	68.16	57.07	3.64	5.64	64.52	63.35	-1.17	-1.82	
Did not receive	200	70	35.48	31.84	42.93	-3.64	-10.26	35.48	36.65	1.17	3.31	

See notes at end of table.



**Table K-12. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	200	70	35.48	31.84	42.93	-3.64	-10.26	35.48	36.65	1.17	3.31	
\$1–\$3,938	120	40	14.39	13.68	15.85	-0.71	-4.94	14.39	13.00	-1.39	-9.69	
\$3,939–\$5,500	120	30	16.92	15.52	19.77	-1.39	-8.23	16.92	15.59	-1.33	-7.84	
\$5,501–\$10,500	230	70	24.45	25.92	21.45	1.47	6.00	24.45	22.54	-1.91	-7.80	
\$10,501 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	640	200	95.87	98.99	89.49	3.12	3.25	95.87	99.03	3.16	3.30	
\$1–\$5,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,001–\$8,292	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$8,293–\$11,737	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$11,738 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.13)				(Effect size = 0.01)		
Received	530	160	69.97	75.75	58.15	5.77	8.25	69.97	70.54	0.57	0.81	
Did not receive	140	60	30.03	24.25	41.85	-5.77	-19.23	30.03	29.46	-0.57	-1.89	
Institution aid status in 2007–08						(Effect size = 0.03)				(Effect size = 0.03)		
Received	190	40	10.80	11.83	8.69	1.03	9.53	10.80	9.82	-0.98	-9.08	
Did not receive	480	170	89.20	88.17	91.31	-1.03	-1.15	89.20	90.18	0.98	1.10	
State aid status in 2007–08						(Effect size = #)				(Effect size = 0.06)		
Received	190	50	12.94	12.88	13.05	-0.06	-0.44	12.94	10.85	-2.08	-16.11	
Did not receive	480	160	87.06	87.12	86.95	0.06	0.07	87.06	89.15	2.08	2.39	
Any aid status in 2007–08						(Effect size = 0.18)				(Effect size = #)		
Received	610	170	82.63	89.39	68.79	6.76*	8.18	82.63	82.61	-0.02	-0.03	
Did not receive	50	40	17.37	10.61	31.21	-6.76*	-38.90	17.37	17.39	0.02	0.14	
Social Security number available						(Effect size = ‡)				(Effect size = ‡)		
Available	670	210	96.92	99.61	91.40	2.70	2.78	96.92	99.59	2.67	2.76	
Not available	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-12. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Yes	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
No	580	190	81.18	79.35	84.93	-1.83	-2.26	81.18	82.16	0.98	1.20	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	330	90	41.38	42.31	39.47	0.93	2.26	41.38	42.82	1.44	3.48	
Black or African American, non-Hispanic	150	40	21.88	27.50	10.36	5.63*	25.71	21.88	24.50	2.63	12.00	
Hispanic	120	40	17.68	20.11	12.71	2.43	13.73	17.68	18.71	1.03	5.84	
Asian, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Unknown race and ethnicity	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	280	100	43.48	41.14	48.27	-2.34	-5.38	43.48	44.68	1.20	2.76	
Female	390	110	56.52	58.86	51.73	2.34	4.14	56.52	55.32	-1.20	-2.12	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	160	50	19.05	16.97	23.31	-2.08	-10.92	19.05	16.67	-2.38	-12.50	
1–103 percent	110	40	26.55	31.98	15.43	5.43	20.44	26.55	30.61	4.06	15.30	
104–141 percent	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
142–166 percent	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
167 percent or more	100	40	17.58	19.90	12.83	2.32	13.19	17.58	20.06	2.48	14.08	
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-12. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$1–\$23,046	150	50	20.21	14.20	32.54	-6.02	-29.76	20.21	14.63	-5.58	-27.61	
\$23,047–\$35,955	150	50	23.12	27.14	14.88	4.02	17.40	23.12	25.49	2.38	10.28	
\$35,956–\$50,287	160	40	16.23	18.91	10.73	2.68	16.54	16.23	19.07	2.84	17.50	
\$50,288 or more	160	40	22.40	27.75	11.43	5.35*	23.91	22.40	25.16	2.76	12.32	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	140	50	6.73	5.67	8.90	-1.06	-15.72	6.73	5.08	-1.65	-24.48	
Psychology/history	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Biology	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	130	40	12.02	11.25	13.62	-0.78	-6.47	12.02	10.01	-2.01	-16.75	
Engineering	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Business	150	50	41.92	45.38	34.83	3.46	8.25	41.92	48.97	7.06*	16.83	
Health professions	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	130	40	9.09	8.09	11.15	-1.01	-11.06	9.09	8.11	-0.98	-10.76	
Missing/unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of Dec. 31, 2007						(Effect size = 0.18)				(Effect size = 0.17)		
15–23	150	50	12.65	8.04	22.08	-4.60	-36.40	12.65	7.58	-5.07	-40.10	
24–29	230	70	30.13	26.78	36.99	-3.35	-11.11	30.13	28.36	-1.77	-5.87	
30 or older	290	90	57.22	65.17	40.93	7.95*	13.90	57.22	64.06	6.84*	11.95	

See notes at end of table.

**Table K-12. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020						(Effect size = ‡)				(Effect size = ‡)	
Yes, defaulted on federal student loan(s)	170	60	34.35	40.32	22.13	5.96	17.36	34.35	40.61	6.26*	18.21
No, did not default on federal student loan(s)	440	120	47.60	47.68	47.44	0.08	0.17	47.60	43.74	-3.86	-8.11
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-13. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Control of baccalaureate-granting institution <sup>4</sup>						(Effect size = 0.04)				(Effect size = 0.01)	
Public	7,260	2,530	62.55	64.29	59.39	1.73	2.77	62.55	62.78	0.23	0.36
Private nonprofit	4,530	1,760	32.91	31.63	35.24	-1.28	-3.88	32.91	32.75	-0.15	-0.47
Private for-profit	590	290	4.54	4.08	5.37	-0.46	-10.05	4.54	4.46	-0.07	-1.63
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.08)				(Effect size = 0.01)	
New England	620	250	6.99	6.91	7.12	-0.07	-1.07	6.99	6.91	-0.08	-1.11
Mideast	2,050	960	17.66	15.94	20.80	-1.72*	-9.74	17.66	17.52	-0.13	-0.76
Great Lakes	1,990	660	16.01	17.54	13.21	1.53*	9.57	16.01	15.90	-0.11	-0.70
Plains	1,690	430	8.39	8.85	7.56	0.45	5.41	8.39	8.44	0.05	0.54
Southeast	2,720	1,170	24.22	23.51	25.51	-0.71	-2.92	24.22	24.46	0.24	0.99
Southwest	1,030	360	9.49	9.35	9.76	-0.14	-1.51	9.49	9.36	-0.13	-1.39
Rocky Mountains	680	100	3.88	4.76	2.28	0.88*	22.57	3.88	3.89	0.01	0.13
Far West	1,430	590	11.92	11.62	12.47	-0.30	-2.52	11.92	12.12	0.19	1.60
Outlying areas	170	60	1.43	1.52	1.28	0.08	5.87	1.43	1.41	-0.03	-1.75
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.06)				(Effect size = 0.01)	
1–4,764	3,080	1,160	21.11	21.25	20.86	0.14	0.64	21.11	20.96	-0.15	-0.72
4,765–13,042	3,000	1,240	21.09	19.63	23.75	-1.46*	-6.91	21.09	21.08	-0.02	-0.07
13,043–27,210	3,080	1,200	26.78	25.77	28.61	-1.00	-3.75	26.78	26.98	0.20	0.75
27,211 or more	3,210	1,000	31.02	33.35	26.78	2.33*	7.50	31.02	30.99	-0.03	-0.11
Pell Grant status in 2007–08						(Effect size = 0.01)				(Effect size = 0.01)	
Received	4,900	1,760	24.96	25.49	23.98	0.54	2.14	24.96	25.23	0.27	1.09
Did not receive	7,320	2,770	72.14	71.61	73.12	-0.54	-0.75	72.14	71.82	-0.32	-0.44
Unknown	150	60	2.90	2.90	2.90	#	0.09	2.90	2.95	0.05	1.67
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.03)				(Effect size = 0.01)	
None	7,320	2,770	72.14	71.61	73.12	-0.54	-0.75	72.14	71.82	-0.32	-0.44
\$1–\$2,155	1,760	580	9.57	9.50	9.69	-0.07	-0.70	9.57	9.58	0.01	0.06
\$2,156–\$4,309	1,930	700	8.94	9.66	7.60	0.73*	8.16	8.94	9.18	0.24	2.73
\$4,310 or more	1,220	480	6.45	6.32	6.68	-0.13	-1.97	6.45	6.47	0.02	0.34
Unknown	150	60	2.90	2.90	2.90	#	0.09	2.90	2.95	0.05	1.67

See notes at end of table.

**Table K-13. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non- respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non- respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2007–08						(Effect size = 0.03)				(Effect size = 0.01)		
Received	6,830	2,520	48.39	49.66	46.07	1.27	2.63	48.39	48.82	0.43	0.89	
Did not receive	5,550	2,070	51.61	50.34	53.93	-1.27	-2.46	51.61	51.18	-0.43	-0.84	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.04)				(Effect size = 0.01)		
None	5,550	2,070	51.61	50.34	53.93	-1.27	-2.46	51.61	51.18	-0.43	-0.84	
\$1–\$4,400	1,750	590	11.60	11.67	11.46	0.08	0.65	11.60	11.66	0.06	0.52	
\$4,401–\$5,500	3,300	1,180	22.94	24.42	20.26	1.47*	6.41	22.94	22.94	#	#	
\$5,501–\$6,394	150	50	1.09	0.99	1.26	-0.10	-9.04	1.09	1.09	0.01	0.47	
\$6,395 or more	1,620	700	12.76	12.58	13.08	-0.18	-1.39	12.76	13.13	0.37	2.89	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.02)				(Effect size = #)		
None	11,610	4,320	93.39	93.06	93.98	-0.33	-0.35	93.39	93.35	-0.04	-0.04	
\$1–\$5,000	190	70	1.43	1.49	1.31	0.06	4.42	1.43	1.47	0.05	3.17	
\$5,001–\$9,396	180	70	1.64	1.52	1.86	-0.12	-7.31	1.64	1.62	-0.03	-1.58	
\$9,397–\$14,000	200	60	1.81	2.03	1.41	0.22	12.27	1.81	1.83	0.02	0.92	
\$14,001 or more	190	70	1.74	1.90	1.44	0.16	9.26	1.74	1.74	#	0.05	
Federal aid status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)		
Received	8,480	3,030	56.44	58.22	53.20	1.78*	3.15	56.44	57.01	0.57	1.01	
Did not receive	3,900	1,560	43.56	41.78	46.80	-1.78*	-4.08	43.56	42.99	-0.57	-1.30	
Institution aid status in 2007–08						(Effect size = 0.08)				(Effect size = 0.01)		
Received	6,500	2,120	39.97	44.11	32.42	4.14*	10.35	39.97	39.68	-0.30	-0.74	
Did not receive	5,880	2,470	60.03	55.89	67.58	-4.14*	-6.89	60.03	60.32	0.30	0.49	
State aid status in 2007–08						(Effect size = 0.06)				(Effect size = #)		
Received	5,060	1,690	27.54	30.00	23.05	2.46*	8.94	27.54	27.42	-0.12	-0.45	
Did not receive	7,310	2,900	72.46	70.00	76.95	-2.46*	-3.40	72.46	72.58	0.12	0.17	
Any aid status in 2007–08						(Effect size = 0.09)				(Effect size = 0.01)		
Received	10,620	3,750	74.61	78.43	67.64	3.82*	5.12	74.61	74.91	0.30	0.40	
Did not receive	1,760	840	25.39	21.57	32.36	-3.82*	-15.04	25.39	25.09	-0.30	-1.18	

See notes at end of table.

**Table K-13. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
			Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
	Unweighted respondents	Unweighted non-respondents	Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Social Security number available						(Effect size = 0.04)				(Effect size = #)	
Available	12,130	4,440	96.10	96.84	94.76	0.73*	0.76	96.10	96.13	0.02	0.02
Not available	250	150	3.90	3.16	5.24	-0.73*	-18.84	3.90	3.87	-0.02	-0.52
Veteran status in 2007–08						(Effect size = 0.01)				(Effect size = #)	
Yes	560	280	4.20	4.09	4.40	-0.11	-2.63	4.20	4.12	-0.07	-1.75
No	11,820	4,310	95.80	95.91	95.60	0.11	0.12	95.80	95.88	0.07	0.08
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	8,910	2,940	67.99	70.71	63.02	2.72*	4.01	67.99	69.48	1.49	2.19
Black or African American, non-Hispanic	1,090	490	9.39	9.43	9.32	0.04	0.40	9.39	9.48	0.09	0.91
Hispanic	1,090	420	8.95	9.62	7.71	0.68	7.57	8.95	8.91	-0.04	-0.42
Asian, non-Hispanic	760	400	6.46	5.93	7.42	-0.53	-8.21	6.46	6.43	-0.03	-0.43
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	300	110	1.95	2.16	1.56	0.21	10.78	1.95	1.96	0.01	0.51
Unknown race and ethnicity	130	180	4.49	1.35	10.23	-3.14*	-69.98	4.49	2.98	-1.51*	-33.54
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	5,030	2,050	42.77	40.21	47.43	-2.56*	-5.98	42.77	42.87	0.10	0.23
Female	7,350	2,540	56.84	59.79	51.46	2.95*	5.19	56.84	57.13	0.29	0.51
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-13. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.07)				(Effect size = 0.03)	
None	4,340	1,520	30.99	31.62	29.84	0.63	2.03	30.99	30.44	-0.55	-1.77
1–69 percent	1,380	460	10.58	11.38	9.12	0.80*	7.57	10.58	10.40	-0.18	-1.69
70–116 percent	1,400	430	9.65	10.68	7.77	1.03*	10.67	9.65	9.48	-0.17	-1.75
117–146 percent	1,330	460	9.12	9.64	8.17	0.52	5.70	9.12	8.96	-0.16	-1.75
147 percent or more	1,190	600	10.21	8.64	13.09	-1.58*	-15.43	10.21	10.03	-0.18	-1.75
Not applicable, did not borrow federal student loan(s)	2,740	1,110	29.44	28.04	32.01	-1.40*	-4.77	29.44	30.68	1.24	4.20
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.03)	
None	2,740	1,110	29.44	28.04	32.01	-1.40*	-4.77	29.44	30.68	1.24	4.20
\$1–\$16,735	2,400	880	19.57	18.87	20.84	-0.70	-3.57	19.57	19.22	-0.34	-1.75
\$16,736–\$27,586	2,400	880	17.85	18.00	17.59	0.15	0.81	17.85	17.54	-0.31	-1.75
\$27,587–\$57,914	2,380	900	18.24	18.46	17.84	0.22	1.21	18.24	17.92	-0.32	-1.75
\$57,915 or more	2,460	820	14.90	16.64	11.73	1.74*	11.66	14.90	14.64	-0.26	-1.75
Baccalaureate major						(Effect size = 0.07)				(Effect size = 0.01)	
Liberal arts	1,540	560	12.93	13.05	12.72	0.12	0.91	12.93	12.90	-0.03	-0.23
Psychology/history	1,540	500	13.19	14.79	10.29	1.59*	12.07	13.19	13.09	-0.11	-0.81
Biology	2,010	660	8.89	9.50	7.79	0.61	6.81	8.89	8.84	-0.06	-0.62
Physical sciences	350	110	1.70	1.45	2.17	-0.26	-14.99	1.70	1.67	-0.03	-1.72
Mathematics and statistics	260	70	0.93	0.96	0.88	0.03	2.93	0.93	0.91	-0.02	-1.75
Computer and information sciences	530	200	2.45	2.06	3.14	-0.38	-15.58	2.45	2.41	-0.03	-1.40
Engineering	870	320	5.17	5.45	4.67	0.28	5.37	5.17	5.25	0.07	1.41
Education	860	290	6.08	6.48	5.36	0.40	6.52	6.08	6.00	-0.08	-1.31
Business	1,300	610	19.84	18.32	22.63	-1.53*	-7.70	19.84	19.79	-0.05	-0.27
Health professions	800	270	6.12	6.24	5.90	0.12	1.94	6.12	6.28	0.16	2.68
Social sciences	60	30	0.50	0.43	0.63	-0.07	-13.84	0.50	0.49	-0.01	-1.75
Agricultural sciences	1,240	530	11.14	10.94	11.50	-0.20	-1.79	11.14	11.32	0.18	1.62
Missing/unknown	1,030	430	11.04	10.34	12.33	-0.70	-6.36	11.04	11.04	#	-0.03

See notes at end of table.



**Table K-13. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Means, base weighted					Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
	Unweighted respondents	Unweighted non-respondents	Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	8,480	2,910	65.35	68.56	59.47	3.22*	4.92	65.35	65.34	-0.01	-0.01
24–29	2,310	1,000	20.23	18.39	23.58	-1.84*	-9.08	20.23	20.28	0.05	0.25
30 or older	1,590	670	14.08	12.97	16.10	-1.11*	-7.88	14.08	14.31	0.24	1.68
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.10)				(Effect size = 0.03)	
Yes, defaulted on federal student loan(s)	910	650	10.82	8.09	15.81	-2.73*	-25.25	10.82	10.63	-0.19	-1.75
No, did not default on federal student loan(s)	8,720	2,820	59.73	63.87	52.18	4.14*	6.92	59.73	58.69	-1.05	-1.75
Not applicable, did not receive federal student loan(s)	2,740	1,110	29.44	28.04	32.01	-1.40*	-4.77	29.44	30.68	1.24	4.20

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-14. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	160	70	3.65	3.21	4.50	-0.43	-11.84	3.65	3.01	-0.64	-17.53	
Mideast	1,060	460	13.95	12.63	16.56	-1.32*	-9.48	13.95	14.60	0.65	4.67	
Great Lakes	1,150	340	17.07	18.43	14.40	1.35	7.93	17.07	16.97	-0.10	-0.60	
Plains	970	250	7.59	8.28	6.21	0.69	9.16	7.59	7.78	0.19	2.48	
Southeast	1,680	700	27.53	26.66	29.24	-0.87	-3.15	27.53	27.62	0.09	0.33	
Southwest	680	240	10.78	10.53	11.28	-0.25	-2.33	10.78	10.34	-0.44	-4.08	
Rocky Mountains	410	60	4.28	5.09	2.67	0.81*	19.00	4.28	4.09	-0.19	-4.53	
Far West	1,080	380	14.29	14.23	14.41	-0.06	-0.43	14.29	14.79	0.50	3.48	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.04)				(Effect size = 0.04)		
1–11,664	1,830	650	19.73	19.49	20.20	-0.24	-1.21	19.73	20.86	1.13	5.72	
11,665–20,095	1,730	700	24.26	22.76	27.20	-1.49	-6.15	24.26	23.40	-0.86	-3.54	
20,096–31,916	1,850	600	25.10	25.47	24.37	0.37	1.47	25.10	25.70	0.60	2.39	
31,917 or more	1,850	580	30.91	32.27	28.22	1.36	4.40	30.91	30.04	-0.87	-2.81	
Pell Grant status in 2007–08						(Effect size = 0.02)				(Effect size = 0.03)		
Received	2,930	1,020	25.99	26.38	25.21	0.39	1.52	25.99	26.27	0.28	1.07	
Did not receive	4,220	1,490	71.59	70.99	72.76	-0.59	-0.83	71.59	70.85	-0.74	-1.03	
Unknown	100	30	2.43	2.62	2.03	0.20	8.18	2.43	2.88	0.46	18.86	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.03)				(Effect size = 0.03)		
None	4,220	1,490	71.59	70.99	72.76	-0.59	-0.83	71.59	70.85	-0.74	-1.03	
\$1–\$2,155	1,070	340	10.09	9.99	10.31	-0.11	-1.07	10.09	10.01	-0.08	-0.83	
\$2,156–\$4,309	1,150	400	9.21	9.91	7.82	0.70*	7.62	9.21	9.57	0.36	3.92	
\$4,310 or more	710	280	6.69	6.49	7.08	-0.20	-2.97	6.69	6.69	#	0.03	
Unknown	100	30	2.43	2.62	2.03	0.20	8.18	2.43	2.88	0.46	18.86	
Direct Loan status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)		
Received	3,680	1,260	42.94	43.99	40.87	1.05	2.44	42.94	43.64	0.70	1.64	
Did not receive	3,580	1,270	57.06	56.01	59.13	-1.05	-1.83	57.06	56.36	-0.70	-1.23	

See notes at end of table.

**Table K-14. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	3,580	1,270	57.06	56.01	59.13	-1.05	-1.83	57.06	56.36	-0.70	-1.23	
\$1–\$3,756	930	310	10.17	10.15	10.20	-0.02	-0.17	10.17	10.24	0.07	0.65	
\$3,757–\$5,500	1,840	600	20.87	22.03	18.56	1.17*	5.59	20.87	20.96	0.09	0.45	
\$5,501–\$5,843	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,844 or more	880	350	11.68	11.53	11.97	-0.15	-1.25	11.68	12.16	0.48	4.15	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	6,900	2,430	94.90	94.54	95.62	-0.36	-0.38	94.90	94.56	-0.34	-0.36	
\$1–\$4,500	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$4,501–\$7,438	80	30	1.42	1.25	1.75	-0.17	-11.77	1.42	1.34	-0.08	-5.77	
\$7,439–\$12,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$12,001 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.02)				(Effect size = #)		
Received	4,730	1,610	51.50	52.57	49.39	1.07	2.08	51.50	51.70	0.20	0.38	
Did not receive	2,520	920	48.50	47.43	50.61	-1.07	-2.21	48.50	48.30	-0.20	-0.40	
Institution aid status in 2007–08						(Effect size = 0.08)				(Effect size = 0.01)		
Received	3,020	910	31.38	34.92	24.40	3.53*	11.26	31.38	30.71	-0.67	-2.14	
Did not receive	4,240	1,630	68.62	65.08	75.60	-3.53*	-5.15	68.62	69.29	0.67	0.98	
State aid status in 2007–08						(Effect size = 0.07)				(Effect size = 0.01)		
Received	3,000	910	27.60	30.58	21.72	2.98*	10.78	27.60	27.96	0.36	1.31	
Did not receive	4,260	1,630	72.40	69.42	78.28	-2.98*	-4.11	72.40	72.04	-0.36	-0.50	
Any aid status in 2007–08						(Effect size = 0.08)				(Effect size = #)		
Received	5,940	1,960	70.17	73.66	63.28	3.49*	4.97	70.17	70.06	-0.11	-0.16	
Did not receive	1,320	570	29.83	26.34	36.72	-3.49*	-11.70	29.83	29.94	0.11	0.37	
Social Security number available						(Effect size = 0.01)				(Effect size = 0.03)		
Available	7,050	2,430	95.40	95.60	94.99	0.21	0.22	95.40	94.69	-0.71	-0.74	
Not available	210	100	4.60	4.40	5.01	-0.21	-4.52	4.60	5.31	0.71	15.42	

See notes at end of table.

**Table K-14. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.02)		
Yes	290	140	3.37	3.00	4.10	-0.37	-10.94	3.37	3.00	-0.37	-11.02	
No	6,960	2,390	96.63	97.00	95.90	0.37	0.38	96.63	97.00	0.37	0.38	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	5,300	1,640	69.46	71.57	65.31	2.10*	3.03	69.46	70.79	1.32	1.91	
Black or African American, non-Hispanic	590	250	8.97	8.54	9.83	-0.43	-4.84	8.97	8.85	-0.12	-1.31	
Hispanic	610	220	9.20	9.82	7.98	0.62	6.71	9.20	9.17	-0.04	-0.40	
Asian, non-Hispanic	490	250	6.88	6.55	7.53	-0.33	-4.78	6.88	7.11	0.23	3.36	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	180	60	1.82	1.99	1.49	0.17	9.32	1.82	1.72	-0.11	-5.90	
Unknown race and ethnicity	60	100	2.95	0.85	7.08	-2.09*	-71.01	2.95	1.78	-1.17	-39.56	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	2,980	1,200	43.79	41.27	48.77	-2.52*	-5.75	43.79	43.44	-0.36	-0.81	
Female	4,280	1,330	55.94	58.73	50.42	2.79*	4.99	55.94	56.56	0.63	1.12	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.04)		
None	2,480	840	29.62	29.19	30.45	-0.42	-1.43	29.62	28.17	-1.44	-4.87	
1–68 percent	770	240	8.86	9.52	7.57	0.65	7.39	8.86	8.64	-0.23	-2.56	
69–114 percent	790	220	9.49	10.16	8.16	0.67	7.07	9.49	9.00	-0.48	-5.11	
115–143 percent	760	240	9.16	9.89	7.72	0.73	7.96	9.16	9.24	0.08	0.87	
144 percent or more	680	310	9.81	8.91	11.60	-0.91	-9.23	9.81	10.26	0.45	4.58	
Not applicable, did not receive federal student loan(s)	1,770	690	33.06	32.33	34.49	-0.73	-2.20	33.06	34.68	1.62*	4.91	

See notes at end of table.

**Table K-14. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.04)	
None	1,770	690	33.06	32.33	34.49	-0.73	-2.20	33.06	34.68	1.62*	4.91
\$1–\$15,070	1,340	500	18.04	17.17	19.76	-0.87	-4.82	18.04	17.85	-0.19	-1.06
\$15,071–\$25,683	1,370	470	16.32	16.17	16.62	-0.15	-0.93	16.32	15.67	-0.65	-3.98
\$25,684–\$56,748	1,370	470	18.16	18.11	18.27	-0.05	-0.29	18.16	17.46	-0.71	-3.88
\$56,749 or more	1,420	420	14.42	16.22	10.86	1.80*	12.49	14.42	14.34	-0.08	-0.54
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)	
Liberal arts	860	270	11.85	12.20	11.16	0.35	2.94	11.85	12.29	0.44	3.71
Psychology/history	1,030	290	14.10	15.77	10.82	1.66*	11.80	14.10	14.06	-0.05	-0.32
Biology	1,210	370	9.78	10.56	8.24	0.78*	7.98	9.78	10.09	0.31	3.18
Physical sciences	200	70	1.96	1.67	2.52	-0.29	-14.70	1.96	1.96	#	0.16
Mathematics and statistics	140	40	0.82	0.97	0.50	0.16	19.44	0.82	0.93	0.12	14.21
Computer and information sciences	210	80	1.87	1.49	2.62	-0.38	-20.39	1.87	1.83	-0.04	-2.16
Engineering	610	250	6.51	6.66	6.22	0.15	2.26	6.51	6.15	-0.36	-5.52
Education	580	180	7.02	7.26	6.55	0.24	3.44	7.02	6.97	-0.05	-0.75
Business	600	280	17.80	16.26	20.86	-1.55*	-8.69	17.80	17.33	-0.47	-2.64
Health professions	470	150	5.77	5.60	6.12	-0.18	-3.08	5.77	5.75	-0.03	-0.46
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Agricultural sciences	790	310	12.13	11.54	13.28	-0.58	-4.82	12.13	12.04	-0.09	-0.75
Missing/unknown	540	220	9.93	9.66	10.45	-0.26	-2.65	9.93	10.20	0.27	2.76
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	4,950	1,610	66.53	69.01	61.62	2.48*	3.73	66.53	66.04	-0.49	-0.74
24–29	1,560	630	22.95	21.46	25.89	-1.49*	-6.50	22.95	23.78	0.83	3.64
30 or older	750	290	10.45	9.53	12.27	-0.92	-8.80	10.45	10.18	-0.27	-2.60
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-14. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments								After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.07)				(Effect size = 0.04)		
Yes, defaulted on federal student loan(s)	480	310	9.01	7.09	12.80	-1.92*	-21.30	9.01	9.59	0.58	6.42	
No, did not default on federal student loan(s)	5,010	1,530	57.94	60.58	52.71	2.64*	4.57	57.94	55.73	-2.20*	-3.80	
Not applicable, did not receive federal student loan(s)	1,770	690	33.06	32.33	34.49	-0.73	-2.20	33.06	34.68	1.62*	4.91	

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-15. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	470	170	14.30	15.31	12.63	1.02	7.12	14.30	15.33	1.03	7.21	
Mideast	880	440	25.94	23.88	29.32	-2.06	-7.95	25.94	24.49	-1.46	-5.62	
Great Lakes	730	290	14.38	15.55	12.45	1.18	8.19	14.38	13.96	-0.42	-2.89	
Plains	630	150	10.29	10.58	9.83	0.28	2.74	10.29	10.21	-0.08	-0.82	
Southeast	940	420	18.95	18.27	20.05	-0.68	-3.56	18.95	19.70	0.75	3.97	
Southwest	260	70	3.93	4.12	3.62	0.19	4.75	3.93	3.97	0.04	0.92	
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Far West	290	160	7.14	6.27	8.56	-0.87	-12.15	7.14	6.89	-0.25	-3.55	
Outlying areas	90	40	2.27	2.31	2.20	0.04	1.74	2.27	2.23	-0.04	-1.64	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.06)				(Effect size = 0.05)		
1–2,507	1,150	430	28.97	30.00	27.28	1.03	3.56	28.97	27.84	-1.13	-3.89	
2,508–4,874	1,150	420	21.25	22.63	18.99	1.38	6.49	21.25	22.62	1.36	6.42	
4,875–11,571	1,050	520	21.95	20.02	25.10	-1.92	-8.77	21.95	20.43	-1.51	-6.89	
11,572 or more	1,180	390	27.84	27.35	28.63	-0.49	-1.75	27.84	29.11	1.27	4.58	
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)		
Received	1,690	610	23.59	24.23	22.55	0.63	2.69	23.59	24.01	0.42	1.76	
Did not receive	2,810	1,130	74.06	74.79	72.85	0.74	1.00	74.06	74.72	0.67	0.90	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	2,810	1,130	74.06	74.79	72.85	0.74	1.00	74.06	74.72	0.67	0.90	
\$1–\$2,155	590	190	8.34	8.18	8.59	-0.15	-1.83	8.34	8.57	0.23	2.77	
\$2,156–\$4,309	680	250	8.84	9.73	7.37	0.90	10.13	8.84	8.98	0.15	1.66	
\$4,310 or more	420	170	6.42	6.31	6.60	-0.11	-1.68	6.42	6.46	0.04	0.58	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Direct Loan status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)		
Received	2,730	1,060	56.51	58.71	52.91	2.20	3.89	56.51	57.24	0.72	1.28	
Did not receive	1,800	700	43.49	41.29	47.09	-2.20	-5.05	43.49	42.76	-0.72	-1.66	

See notes at end of table.

**Table K-15. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08						(Effect size = 0.07)				(Effect size = 0.02)		
None	1,800	700	43.49	41.29	47.09	-2.20	-5.05	43.49	42.76	-0.72	-1.66	
\$1–\$5,500	2,090	770	41.65	45.25	35.73	3.61*	8.67	41.65	42.38	0.73	1.75	
\$5,501 or more	650	300	14.87	13.45	17.18	-1.41	-9.50	14.87	14.86	-0.01	-0.05	
Parent PLUS Loan amount received in 2007–08 <sup>a</sup>						(Effect size = 0.04)				(Effect size = 0.04)		
None	4,140	1,620	90.16	89.31	91.56	-0.85	-0.95	90.16	90.26	0.10	0.11	
\$1–\$6,250	100	30	1.48	1.94	0.71	0.46*	31.47	1.48	1.89	0.41*	28.02	
\$6,251–\$11,000	90	40	2.54	2.59	2.47	0.05	1.83	2.54	2.28	-0.26	-10.20	
\$11,001–\$16,091	90	40	2.90	3.00	2.75	0.09	3.20	2.90	2.59	-0.32	-10.92	
\$16,092 or more	100	30	2.91	3.16	2.50	0.25	8.54	2.91	2.98	0.07	2.26	
Federal aid status in 2007–08						(Effect size = 0.07)				(Effect size = 0.04)		
Received	3,280	1,200	63.96	67.28	58.54	3.31*	5.18	63.96	65.79	1.83	2.86	
Did not receive	1,250	560	36.04	32.72	41.46	-3.31*	-9.19	36.04	34.21	-1.83	-5.08	
Institution aid status in 2007–08						(Effect size = 0.14)				(Effect size = 0.01)		
Received	3,300	1,160	60.32	67.01	49.36	6.69*	11.09	60.32	60.99	0.67	1.11	
Did not receive	1,230	610	39.68	32.99	50.64	-6.69*	-16.86	39.68	39.01	-0.67	-1.69	
State aid status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)		
Received	1,900	710	29.44	31.43	26.19	1.99	6.75	29.44	29.00	-0.44	-1.51	
Did not receive	2,630	1,060	70.56	68.57	73.81	-1.99	-2.82	70.56	71.00	0.44	0.63	
Any aid status in 2007–08						(Effect size = 0.12)				(Effect size = 0.04)		
Received	4,140	1,550	81.95	86.42	74.63	4.47*	5.45	81.95	83.53	1.58	1.93	
Did not receive	390	220	18.05	13.58	25.37	-4.47*	-24.77	18.05	16.47	-1.58	-8.75	
Social Security number available						(Effect size = 0.10)				(Effect size = 0.07)		
Available	4,490	1,730	97.34	99.00	94.62	1.66*	1.70	97.34	98.46	1.12	1.15	
Not available	40	40	2.66	1.00	5.38	-1.66*	-62.32	2.66	1.54	-1.12	-42.04	

See notes at end of table.



**Table K-15. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.04)		
Yes	190	100	3.75	4.16	3.09	0.41	10.84	3.75	4.45	0.70*	18.71	
No	4,340	1,660	96.25	95.84	96.91	-0.41	-0.42	96.25	95.55	-0.70*	-0.73	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	3,320	1,170	68.85	73.04	61.99	4.19*	6.08	68.85	70.79	1.94	2.82	
Black or African American, non-Hispanic	380	180	8.47	8.56	8.32	0.09	1.06	8.47	8.86	0.39	4.60	
Hispanic	370	150	7.25	7.78	6.38	0.53	7.35	7.25	7.16	-0.09	-1.31	
Asian, non-Hispanic	250	130	5.70	5.07	6.74	-0.63	-11.04	5.70	5.56	-0.15	-2.57	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	120	40	2.29	2.59	1.81	0.30	12.95	2.29	2.53	0.24	10.47	
Unknown race and ethnicity	50	70	6.46	1.83	14.06	-4.63*	-71.74	6.46	3.92	-2.54*	-39.34	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	1,800	720	40.73	38.25	44.78	-2.48*	-6.08	40.73	41.85	1.12	2.76	
Female	2,730	1,050	58.60	61.75	53.44	3.15*	5.37	58.60	58.15	-0.45	-0.77	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.14)				(Effect size = 0.07)		
None	1,700	610	35.25	38.20	30.42	2.95*	8.37	35.25	36.11	0.86	2.43	
1–64 percent	500	170	10.98	12.09	9.16	1.11	10.10	10.98	11.50	0.52	4.73	
65–113 percent	490	170	9.09	10.97	6.01	1.88*	20.68	9.09	9.86	0.77	8.50	
114–146 percent	490	190	9.75	9.80	9.66	0.05	0.51	9.75	8.93	-0.81	-8.34	
147 percent or more	420	230	10.79	7.74	15.79	-3.05*	-28.31	10.79	9.13	-1.66	-15.41	
Not applicable, did not receive federal student loan(s)	920	390	24.15	21.21	28.95	-2.93*	-12.14	24.15	24.48	0.33	1.36	

See notes at end of table.

**Table K-15. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.07)				(Effect size = 0.02)		
None	920	390	24.15	21.21	28.95	-2.93*	-12.14	24.15	24.48	0.33	1.36	
\$1–\$17,125	1,020	360	23.56	24.61	21.83	1.05	4.47	23.56	23.88	0.33	1.39	
\$17,126–\$28,199	800	310	17.81	18.51	16.65	0.71	3.96	17.81	18.10	0.29	1.66	
\$28,200–\$61,502	880	370	20.15	20.14	20.16	-0.01	-0.05	20.15	19.80	-0.35	-1.73	
\$61,503 or more	910	330	14.34	15.52	12.40	1.18	8.26	14.34	13.74	-0.60	-4.20	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	550	230	15.85	15.81	15.90	-0.03	-0.21	15.85	15.24	-0.61	-3.84	
Psychology/history	510	200	13.23	14.61	10.96	1.38	10.46	13.23	12.93	-0.29	-2.22	
Biology	790	290	8.28	8.35	8.15	0.08	0.93	8.28	7.34	-0.94	-11.32	
Physical sciences	150	40	1.46	1.19	1.90	-0.27	-18.61	1.46	1.35	-0.10	-7.03	
Mathematics and statistics	120	30	1.27	1.04	1.65	-0.23	-18.06	1.27	1.00	-0.27	-21.35	
Computer and information sciences	190	70	2.22	1.93	2.70	-0.29	-13.08	2.22	2.57	0.35	15.59	
Engineering	240	70	3.31	3.68	2.71	0.37	11.11	3.31	4.19	0.87	26.40	
Education	290	110	5.12	5.71	4.17	0.58	11.41	5.12	4.96	-0.17	-3.28	
Business	570	260	20.68	19.48	22.65	-1.20	-5.82	20.68	20.55	-0.13	-0.62	
Health professions	300	100	5.88	6.28	5.22	0.40	6.85	5.88	6.57	0.69	11.80	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	340	170	9.54	10.16	8.54	0.61	6.41	9.54	10.42	0.87	9.16	
Missing/unknown	450	190	12.50	11.12	14.76	-1.38	-11.05	12.50	12.14	-0.36	-2.91	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	3,390	1,230	70.37	75.57	61.86	5.20*	7.38	70.37	71.92	1.55	2.21	
24–29	560	270	13.69	10.88	18.30	-2.81*	-20.52	13.69	11.70	-1.99	-14.57	
30 or older	580	260	15.02	13.31	17.82	-1.71	-11.38	15.02	16.17	1.15	7.67	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-15. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.20)				(Effect size = 0.07)
Yes, defaulted on federal student loan(s)	290	250	11.03	5.84	19.53	-5.19*	-47.02	11.03	8.88	-2.14	-19.45
No, did not default on federal student loan(s)	3,320	1,120	64.82	72.94	51.52	8.12*	12.52	64.82	66.64	1.82	2.80
Not applicable, did not receive federal student loan(s)	920	390	24.15	21.21	28.95	-2.93*	-12.14	24.15	24.48	0.33	1.36

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$

<sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.

<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.

<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.

<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>6</sup> Categories were defined by quartiles computed at the institution level.

<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-16. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)	
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mideast	110	60	8.66	6.49	11.69	-2.18	-25.14	8.66	7.53	-1.14	-13.14
Great Lakes	100	40	13.17	18.99	5.09	5.82	44.23	13.17	14.98	1.82	13.79
Plains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Southeast	100	60	16.90	14.57	20.13	-2.33	-13.79	16.90	15.01	-1.89	-11.16
Southwest	80	50	32.07	31.29	33.15	-0.78	-2.43	32.07	35.15	3.08	9.60
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Far West	70	50	14.03	12.11	16.71	-1.93	-13.73	14.03	12.91	-1.12	-7.99
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.18)				(Effect size = 0.17)	
1–1,972	170	60	16.84	15.76	18.33	-1.07	-6.38	16.84	17.53	0.70	4.13
1,973–3,355	130	80	17.59	17.93	17.11	0.35	1.96	17.59	16.27	-1.32	-7.50
3,356–8,142	140	80	13.67	8.01	21.53	-5.66*	-41.39	13.67	8.47	-5.21*	-38.07
8,143 or more	150	70	51.90	58.29	43.03	6.39	12.31	51.90	57.73	5.83	11.23
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)	
Received	290	130	20.57	21.19	19.72	0.62	2.99	20.57	19.53	-1.04	-5.06
Did not receive	300	150	65.96	56.56	79.00	-9.40*	-14.25	65.96	64.22	-1.74	-2.64
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	300	150	65.96	56.56	79.00	-9.40*	-14.25	65.96	64.22	-1.74	-2.64
\$1–\$2,155	100	50	11.32	12.15	10.15	0.84	7.40	11.32	10.90	-0.41	-3.66
\$2,156–\$4,309	100	50	5.94	5.33	6.78	-0.61	-10.21	5.94	5.18	-0.75	-12.71
\$4,310 or more	80	30	3.32	3.70	2.79	0.38	11.58	3.32	3.44	0.13	3.88
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Direct Loan status in 2007–08						(Effect size = 0.09)				(Effect size = 0.10)	
Received	420	200	64.52	68.82	58.56	4.30	6.66	64.52	59.85	-4.68	-7.25
Did not receive	180	90	35.48	31.18	41.44	-4.30	-12.12	35.48	40.15	4.68	13.18

See notes at end of table.

**Table K-16. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	180	90	35.48	31.18	41.44	-4.30	-12.12	35.48	40.15	4.68	13.18	
\$1–\$3,938	110	50	14.39	11.47	18.46	-2.93	-20.33	14.39	10.65	-3.75	-26.04	
\$3,939–\$5,500	100	50	16.92	15.03	19.54	-1.89	-11.17	16.92	14.77	-2.15	-12.72	
\$5,501–\$10,500	200	90	24.45	27.26	20.56	2.80	11.47	24.45	24.21	-0.24	-1.00	
\$10,501 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	570	270	95.87	98.84	91.75	2.97	3.09	95.87	98.94	3.07	3.20	
\$1–\$5,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,001–\$8,292	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$8,293–\$11,737	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$11,738 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.15)				(Effect size = 0.06)		
Received	470	220	69.97	76.94	60.30	6.97	9.96	69.97	67.25	-2.72	-3.89	
Did not receive	120	70	30.03	23.06	39.70	-6.97	-23.20	30.03	32.75	2.72	9.07	
Institution aid status in 2007–08						(Effect size = 0.02)				(Effect size = 0.05)		
Received	170	60	10.80	11.39	9.99	0.59	5.44	10.80	9.34	-1.47	-13.57	
Did not receive	420	230	89.20	88.61	90.01	-0.59	-0.66	89.20	90.66	1.47	1.64	
State aid status in 2007–08						(Effect size = 0.09)				(Effect size = 0.14)		
Received	160	70	12.94	9.92	17.12	-3.02	-23.31	12.94	8.15	-4.79	-36.99	
Did not receive	430	220	87.06	90.08	82.88	3.02	3.46	87.06	91.85	4.79	5.50	
Any aid status in 2007–08						(Effect size = 0.24)				(Effect size = 0.07)		
Received	540	240	82.63	91.64	70.13	9.01*	10.90	82.63	79.88	-2.75	-3.33	
Did not receive	50	50	17.37	8.36	29.87	-9.01*	-51.88	17.37	20.12	2.75	15.82	
Social Security number available						(Effect size = ‡)				(Effect size = ‡)		
Available	590	280	96.92	99.55	93.26	2.64	2.72	96.92	99.24	2.32	2.40	
Not available	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-16. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.05)				(Effect size = 0.03)		
Yes	80	40	18.82	20.62	16.32	1.80	9.57	18.82	17.52	-1.30	-6.93	
No	520	250	81.18	79.38	83.68	-1.80	-2.22	81.18	82.48	1.30	1.61	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	300	120	41.38	39.20	44.41	-2.18	-5.27	41.38	41.37	-0.01	-0.03	
Black or African American, non-Hispanic	130	60	21.88	30.24	10.28	8.36*	38.19	21.88	22.79	0.91	4.16	
Hispanic	110	60	17.68	20.75	13.41	3.07	17.39	17.68	18.12	0.44	2.48	
Asian, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Unknown race and ethnicity	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	250	130	43.48	38.71	50.09	-4.76	-10.96	43.48	42.35	-1.13	-2.60	
Female	340	160	56.52	61.29	49.91	4.76	8.43	56.52	57.65	1.13	2.00	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.15)				(Effect size = 0.08)		
None	150	70	19.05	18.86	19.31	-0.19	-0.98	19.05	20.76	1.71	9.00	
1–103 percent	100	50	26.55	31.06	20.29	4.51	16.99	26.55	24.37	-2.18	-8.22	
104–141 percent	100	40	9.92	11.01	8.41	1.09	10.98	9.92	10.01	0.08	0.83	
142–166 percent	100	40	8.85	7.36	10.92	-1.49	-16.84	8.85	7.60	-1.26	-14.19	
167 percent or more	90	60	17.58	18.34	16.54	0.75	4.29	17.58	17.33	-0.25	-1.42	
Not applicable, did not receive federal student loan(s)	50	30	18.04	13.37	24.54	-4.68	-25.92	18.04	19.94	1.89	10.48	

See notes at end of table.

**Table K-16. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments								After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.25)				(Effect size = 0.11)		
None	50	30	18.04	13.37	24.54	-4.68	-25.92	18.04	19.94	1.89	10.48	
\$1–\$23,046	130	70	20.21	14.68	27.89	-5.53	-27.37	20.21	16.49	-3.72	-18.42	
\$23,047–\$35,955	130	70	23.12	26.74	18.09	3.62	15.68	23.12	23.65	0.54	2.32	
\$35,956–\$50,287	140	60	16.23	14.93	18.03	-1.30	-8.00	16.23	15.41	-0.82	-5.04	
\$50,288 or more	140	60	22.40	30.28	11.45	7.89*	35.21	22.40	24.51	2.11	9.43	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	130	70	6.73	5.09	9.01	-1.64	-24.34	6.73	4.39	-2.34	-34.79	
Psychology/history	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Biology	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer and information sciences	120	50	12.02	12.18	11.80	0.16	1.32	12.02	9.46	-2.56	-21.32	
Engineering	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Business	130	70	41.92	41.75	42.14	-0.16	-0.39	41.92	48.77	6.86*	16.35	
Health professions	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	120	50	9.09	7.52	11.27	-1.57	-17.24	9.09	7.86	-1.24	-13.60	
Missing/unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of Dec. 31, 2007						(Effect size = 0.18)				(Effect size = 0.17)		
15–23	130	70	12.65	7.26	20.13	-5.39	-42.61	12.65	7.22	-5.43	-42.90	
24–29	200	100	30.13	28.32	32.64	-1.81	-6.00	30.13	33.94	3.81	12.64	
30 or older	260	120	57.22	64.42	47.23	7.20	12.58	57.22	58.84	1.62	2.83	

See notes at end of table.

**Table K-16. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.16)				(Effect size = 0.11)	
Yes, defaulted on federal student loan(s)	140	90	34.35	41.28	24.74	6.93	20.17	34.35	38.20	3.85	11.21
No, did not default on federal student loan(s)	390	170	47.60	45.35	50.73	-2.25	-4.73	47.60	41.86	-5.74	-12.06
Not applicable, did not receive federal student loan(s)	50	30	18.04	13.37	24.54	-4.68	-25.92	18.04	19.94	1.89	10.48

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$

<sup>1</sup> Bias in the sample mean is estimated as the difference between the mean of respondent cases and the mean of all sample cases, using the base weight.

<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the weighted eligible-sample mean.

<sup>3</sup> B&B:08/18 base weight, adjusted for nonresponse.

<sup>3</sup> Bias in the sample mean is estimated as the difference between the weighted respondent mean (using the base weight adjusted for nonresponse) and weighted eligible-sample mean (using the base weight).

<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>6</sup> Categories were defined by quartiles computed at the institution level.

<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>8</sup> Categories were defined by quartiles.

NOTE: Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards. 'Base weight' refers to the B&B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).



**Table K-17. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Control of baccalaureate-granting institution <sup>4</sup>						(Effect size = 0.06)				(Effect size = 0.01)	
Public	6,760	3,030	62.55	64.68	59.61	2.13*	3.40	62.55	62.78	0.23	0.36
Private nonprofit	4,240	2,050	32.91	31.71	34.57	-1.20	-3.65	32.91	32.75	-0.15	-0.47
Private for-profit	540	340	4.54	3.61	5.82	-0.92*	-20.37	4.54	4.46	-0.07	-1.63
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.08)				(Effect size = 0.01)	
New England	570	300	6.99	6.90	7.10	-0.09	-1.22	6.99	6.91	-0.08	-1.11
Mideast	1,890	1,120	17.66	15.80	20.21	-1.85*	-10.49	17.66	17.52	-0.13	-0.76
Great Lakes	1,860	790	16.01	17.67	13.71	1.66*	10.40	16.01	15.90	-0.11	-0.70
Plains	1,580	540	8.39	8.68	7.99	0.29	3.48	8.39	8.44	0.05	0.54
Southeast	2,530	1,360	24.22	23.64	25.02	-0.58	-2.39	24.22	24.46	0.24	0.99
Southwest	960	430	9.49	9.33	9.72	-0.16	-1.74	9.49	9.36	-0.13	-1.39
Rocky Mountains	650	140	3.88	4.84	2.57	0.95*	24.52	3.88	3.89	0.01	0.13
Far West	1,350	670	11.92	11.54	12.46	-0.39	-3.24	11.92	12.12	0.19	1.60
Outlying areas	160	70	1.43	1.59	1.21	0.16	11.06	1.43	1.41	-0.03	-1.75
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.05)				(Effect size = 0.01)	
1–4,764	2,880	1,360	21.11	21.08	21.16	-0.03	-0.16	21.11	20.96	-0.15	-0.72
4,765–13,042	2,770	1,470	21.09	19.78	22.90	-1.31	-6.22	21.09	21.08	-0.02	-0.07
13,043–27,210	2,900	1,380	26.78	26.24	27.51	-0.53	-2.00	26.78	26.98	0.20	0.75
27,211 or more	2,990	1,210	31.02	32.90	28.42	1.88	6.06	31.02	30.99	-0.03	-0.11
Pell Grant status in 2007–08						(Effect size = 0.01)				(Effect size = 0.01)	
Received	4,600	2,060	24.96	25.31	24.47	0.35	1.41	24.96	25.23	0.27	1.09
Did not receive	6,810	3,280	72.14	71.95	72.41	-0.19	-0.26	72.14	71.82	-0.32	-0.44
Unknown	140	70	2.90	2.74	3.12	-0.16	-5.55	2.90	2.95	0.05	1.67
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.02)				(Effect size = 0.01)	
None	6,810	3,280	72.14	71.95	72.41	-0.19	-0.26	72.14	71.82	-0.32	-0.44
\$1–\$2,155	1,650	690	9.57	9.56	9.58	-0.01	-0.09	9.57	9.58	0.01	0.06
\$2,156–\$4,309	1,810	820	8.94	9.54	8.10	0.60	6.77	8.94	9.18	0.24	2.73
\$4,310 or more	1,140	560	6.45	6.20	6.79	-0.24	-3.79	6.45	6.47	0.02	0.34
Unknown	140	70	2.90	2.74	3.12	-0.16	-5.55	2.90	2.95	0.05	1.67

See notes at end of table.

**Table K-17. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Esti-mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti-mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan status in 2007–08						(Effect size = 0.03)				(Effect size = 0.01)	
Received	6,350	2,990	48.39	49.69	46.58	1.31	2.71	48.39	48.82	0.43	0.89
Did not receive	5,200	2,420	51.61	50.31	53.42	-1.31	-2.54	51.61	51.18	-0.43	-0.84
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.01)	
None	5,200	2,420	51.61	50.31	53.42	-1.31	-2.54	51.61	51.18	-0.43	-0.84
\$1–\$4,400	1,630	710	11.60	11.84	11.26	0.24	2.09	11.60	11.66	0.06	0.52
\$4,401–\$5,500	3,110	1,370	22.94	24.89	20.26	1.94*	8.47	22.94	22.94	#	#
\$5,501–\$6,394	140	70	1.09	0.97	1.25	-0.12	-10.71	1.09	1.09	0.01	0.47
\$6,395 or more	1,470	850	12.76	12.00	13.81	-0.76	-5.97	12.76	13.13	0.37	2.89
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = 0.02)				(Effect size = #)	
None	10,840	5,090	93.39	93.11	93.77	-0.27	-0.29	93.39	93.35	-0.04	-0.04
\$1–\$5,000	180	80	1.43	1.51	1.31	0.09	6.04	1.43	1.47	0.05	3.17
\$5,001–\$9,396	170	90	1.64	1.58	1.73	-0.06	-3.92	1.64	1.62	-0.03	-1.58
\$9,397–\$14,000	190	70	1.81	1.93	1.64	0.12	6.70	1.81	1.83	0.02	0.92
\$14,001 or more	170	90	1.74	1.87	1.55	0.13	7.60	1.74	1.74	#	0.05
Federal aid status in 2007–08						(Effect size = 0.04)				(Effect size = 0.01)	
Received	7,940	3,570	56.44	58.36	53.79	1.92*	3.39	56.44	57.01	0.57	1.01
Did not receive	3,610	1,840	43.56	41.64	46.21	-1.92*	-4.40	43.56	42.99	-0.57	-1.30
Institution aid status in 2007–08						(Effect size = 0.10)				(Effect size = 0.01)	
Received	6,140	2,480	39.97	44.87	33.20	4.90*	12.25	39.97	39.68	-0.30	-0.74
Did not receive	5,410	2,930	60.03	55.13	66.80	-4.90*	-8.16	60.03	60.32	0.30	0.49
State aid status in 2007–08						(Effect size = 0.07)				(Effect size = #)	
Received	4,780	1,970	27.54	30.68	23.20	3.14*	11.40	27.54	27.42	-0.12	-0.45
Did not receive	6,770	3,440	72.46	69.32	76.80	-3.14*	-4.34	72.46	72.58	0.12	0.17
Any aid status in 2007–08						(Effect size = 0.10)				(Effect size = 0.01)	
Received	9,950	4,420	74.61	78.93	68.65	4.32*	5.78	74.61	74.91	0.30	0.40
Did not receive	1,600	1,000	25.39	21.07	31.35	-4.32*	-17.00	25.39	25.09	-0.30	-1.18

See notes at end of table.

**Table K-17. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number available						(Effect size = 0.05)				(Effect size = #)		
Available	11,330	5,240	96.10	97.15	94.65	1.05*	1.09	96.10	96.13	0.02	0.02	
Not available	220	170	3.90	2.85	5.35	-1.05*	-26.95	3.90	3.87	-0.02	-0.52	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = #)		
Yes	510	330	4.20	3.88	4.63	-0.31	-7.49	4.20	4.12	-0.07	-1.75	
No	11,040	5,090	95.80	96.12	95.37	0.31	0.33	95.80	95.88	0.07	0.08	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	8,360	3,490	67.99	71.78	62.74	3.80*	5.58	67.99	69.48	1.49	2.19	
Black or African American, non-Hispanic	1,000	580	9.39	9.24	9.61	-0.16	-1.66	9.39	9.48	0.09	0.91	
Hispanic	1,030	490	8.95	9.37	8.36	0.42	4.71	8.95	8.91	-0.04	-0.42	
Asian, non-Hispanic	700	460	6.46	5.82	7.34	-0.64	-9.90	6.46	6.43	-0.03	-0.43	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	280	130	1.95	2.05	1.80	0.11	5.41	1.95	1.96	0.01	0.51	
Unknown race and ethnicity	110	200	4.49	1.01	9.30	-3.48*	-77.47	4.49	2.98	-1.51*	-33.54	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	4,690	2,380	42.77	39.79	46.89	-2.98*	-6.98	42.77	42.87	0.10	0.23	
Female	6,860	3,030	56.84	60.21	52.17	3.38*	5.94	56.84	57.13	0.29	0.51	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-17. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.08)				(Effect size = 0.03)	
None	4,080	1,770	30.99	32.00	29.60	1.01	3.25	30.99	30.44	-0.55	-1.77
1–69 percent	1,280	560	10.58	11.08	9.90	0.50	4.69	10.58	10.40	-0.18	-1.69
70–116 percent	1,310	520	9.65	10.76	8.12	1.11*	11.50	9.65	9.48	-0.17	-1.75
117–146 percent	1,230	560	9.12	9.71	8.30	0.59	6.52	9.12	8.96	-0.16	-1.75
147 percent or more	1,100	700	10.21	8.36	12.78	-1.86*	-18.17	10.21	10.03	-0.18	-1.75
Not applicable, did not borrow federal student loan(s)	2,550	1,310	29.44	28.09	31.31	-1.35	-4.59	29.44	30.68	1.24	4.20
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.06)				(Effect size = 0.03)	
None	2,550	1,310	29.44	28.09	31.31	-1.35	-4.59	29.44	30.68	1.24	4.20
\$1–\$16,735	2,230	1,050	19.57	18.68	20.79	-0.89	-4.52	19.57	19.22	-0.34	-1.75
\$16,736–\$27,586	2,240	1,040	17.85	17.77	17.97	-0.08	-0.47	17.85	17.54	-0.31	-1.75
\$27,587–\$57,914	2,220	1,060	18.24	18.52	17.84	0.29	1.57	18.24	17.92	-0.32	-1.75
\$57,915 or more	2,320	960	14.90	16.94	12.09	2.04*	13.66	14.90	14.64	-0.26	-1.75
Baccalaureate major						(Effect size = 0.10)				(Effect size = 0.01)	
Liberal arts	1,420	680	12.93	12.94	12.92	0.01	0.08	12.93	12.90	-0.03	-0.23
Psychology/history	1,430	600	13.19	15.28	10.32	2.08*	15.77	13.19	13.09	-0.11	-0.81
Biology	1,910	760	8.89	9.87	7.54	0.98*	10.98	8.89	8.84	-0.06	-0.62
Physical sciences	340	130	1.70	1.47	2.02	-0.23	-13.48	1.70	1.67	-0.03	-1.72
Mathematics and statistics	250	90	0.93	1.02	0.81	0.09	9.66	0.93	0.91	-0.02	-1.75
Computer and information sciences	500	230	2.45	1.97	3.10	-0.47	-19.32	2.45	2.41	-0.03	-1.40
Engineering	830	360	5.17	5.46	4.79	0.28	5.42	5.17	5.25	0.07	1.41
Education	810	330	6.08	6.61	5.34	0.53*	8.74	6.08	6.00	-0.08	-1.31
Business	1,190	720	19.84	17.76	22.73	-2.09*	-10.52	19.84	19.79	-0.05	-0.27
Health professions	740	330	6.12	6.33	5.82	0.21	3.46	6.12	6.28	0.16	2.68
Social sciences	50	40	0.50	0.45	0.58	-0.06	-11.48	0.50	0.49	-0.01	-1.75
Agricultural sciences	1,140	630	11.14	10.76	11.67	-0.38	-3.45	11.14	11.32	0.18	1.62
Missing/unknown	950	510	11.04	10.09	12.35	-0.95	-8.59	11.04	11.04	#	-0.03

See notes at end of table.

**Table K-17. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)	
15–23	7,960	3,420	65.35	69.79	59.20	4.45*	6.80	65.35	65.35	#	#
24–29	2,110	1,200	20.23	17.35	24.21	-2.88*	-14.25	20.23	20.28	0.05	0.25
30 or older	1,480	790	14.08	12.78	15.88	-1.30*	-9.25	14.08	14.31	0.24	1.68
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.13)				(Effect size = 0.03)	
Yes, defaulted on federal student loan(s)	810	750	10.82	7.25	15.76	-3.57*	-33.00	10.82	10.63	-0.19	-1.75
No, did not default on federal student loan(s)	8,190	3,350	59.73	64.66	52.93	4.92*	8.24	59.73	58.69	-1.05	-1.75
Not applicable, did not receive federal student loan(s)	2,550	1,310	29.44	28.09	31.31	-1.35	-4.59	29.44	30.68	1.24	4.20

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ <sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>8</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&amp;B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-18. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	140	90	3.65	3.28	4.19	-0.36	-9.95	3.65	3.09	-0.56	-15.39	
Mideast	970	550	13.95	12.33	16.37	-1.61*	-11.57	13.95	14.19	0.24	1.72	
Great Lakes	1,080	420	17.07	18.72	14.61	1.64	9.63	17.07	17.09	0.01	0.07	
Plains	920	310	7.59	8.31	6.50	0.72	9.52	7.59	7.92	0.33	4.39	
Southeast	1,560	820	27.53	26.91	28.45	-0.62	-2.24	27.53	27.69	0.16	0.60	
Southwest	640	290	10.78	10.26	11.57	-0.52	-4.86	10.78	10.07	-0.71	-6.56	
Rocky Mountains	380	90	4.28	5.22	2.87	0.94*	22.03	4.28	4.17	-0.11	-2.52	
Far West	1,010	450	14.29	14.02	14.70	-0.27	-1.90	14.29	14.95	0.66	4.65	
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.03)				(Effect size = 0.02)		
1–11,664	1,690	790	19.73	19.32	20.35	-0.41	-2.08	19.73	20.28	0.55	2.78	
11,665–20,095	1,630	800	24.26	23.19	25.85	-1.06	-4.38	24.26	23.61	-0.65	-2.66	
20,096–31,916	1,720	730	25.10	25.49	24.52	0.39	1.55	25.10	25.78	0.68	2.70	
31,917 or more	1,730	710	30.91	32.00	29.29	1.08	3.51	30.91	30.33	-0.58	-1.88	
Pell Grant status in 2007–08						(Effect size = 0.02)				(Effect size = 0.03)		
Received	2,740	1,210	25.99	25.91	26.11	-0.08	-0.30	25.99	25.67	-0.32	-1.21	
Did not receive	3,930	1,780	71.59	71.35	71.94	-0.24	-0.33	71.59	71.48	-0.11	-0.15	
Unknown	100	40	2.43	2.74	19.5	0.32	13.04	2.43	2.85	0.42	17.48	
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.03)				(Effect size = 0.03)		
None	3,930	1,780	71.59	71.35	71.94	-0.24	-0.33	71.59	71.48	-0.11	-0.15	
\$1–\$2,155	1,000	410	10.09	9.89	10.40	-0.20	-2.02	10.09	10.00	-0.10	-0.96	
\$2,156–\$4,309	1,080	470	9.21	9.72	8.44	0.51	5.54	9.21	9.26	0.05	0.57	
\$4,310 or more	670	320	6.69	6.30	7.27	-0.38	-5.75	6.69	6.42	-0.27	-4.05	
Unknown	100	40	2.43	2.74	19.5	0.32	13.04	2.43	2.85	0.42	17.48	
Direct Loan status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)		
Received	3,430	1,520	42.94	44.10	41.19	1.16	2.71	42.94	43.40	0.46	1.07	
Did not receive	3,340	1,510	57.06	55.90	58.81	-1.16	-2.04	57.06	56.60	-0.46	-0.80	

See notes at end of table.

**Table K-18. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
			Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
	Unweighted respondents	Unweighted non-respondents	Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	3,340	1,510	57.06	55.90	58.81	-1.16	-2.04	57.06	56.60	-0.46	-0.80	
\$1–\$3,756	870	370	10.17	10.08	10.31	-0.09	-0.89	10.17	10.27	0.10	1.02	
\$3,757–\$5,500	1,730	710	20.87	22.59	18.28	1.72*	8.27	20.87	21.04	0.17	0.80	
\$5,501–\$5,843	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,844 or more	810	430	11.68	11.18	12.43	-0.50	-4.28	11.68	11.83	0.15	1.28	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	6,430	2,900	94.90	94.50	95.50	-0.40	-0.42	94.90	94.50	-0.40	-0.42	
\$1–\$4,500	90	30	1.21	1.28	1.09	0.08	6.47	1.21	1.36	0.15	12.50	
\$4,501–\$7,438	70	40	1.42	1.31	1.58	-0.10	-7.37	1.42	1.42	#	-0.01	
\$7,439–\$12,000	90	30	1.37	1.43	1.28	0.06	4.21	1.37	1.44	0.07	4.94	
\$12,001 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.03)				(Effect size = #)		
Received	4,430	1,910	51.50	52.95	49.32	1.45	2.82	51.50	51.58	0.08	0.16	
Did not receive	2,330	1,110	48.50	47.05	50.68	-1.45	-2.99	48.50	48.42	-0.08	-0.17	
Institution aid status in 2007–08						(Effect size = 0.09)				(Effect size = #)		
Received	2,870	1,060	31.38	35.77	24.80	4.39*	13.98	31.38	31.33	-0.06	-0.18	
Did not receive	3,890	1,970	68.62	64.23	75.20	-4.39*	-6.39	68.62	68.67	0.06	0.08	
State aid status in 2007–08						(Effect size = 0.08)				(Effect size = 0.01)		
Received	2,830	1,080	27.60	31.13	22.31	3.53*	12.78	27.60	27.91	0.31	1.12	
Did not receive	3,940	1,950	72.40	68.87	77.69	-3.53*	-4.87	72.40	72.09	-0.31	-0.43	
Any aid status in 2007–08						(Effect size = 0.09)				(Effect size = #)		
Received	5,560	2,340	70.17	74.41	63.81	4.24*	6.05	70.17	70.16	-0.01	-0.01	
Did not receive	1,210	690	29.83	25.59	36.19	-4.24*	-14.22	29.83	29.84	0.01	0.03	
Social Security number available						(Effect size = 0.04)				(Effect size = 0.02)		
Available	6,580	2,900	95.40	96.18	94.22	0.78	0.82	95.40	94.93	-0.47	-0.49	
Not available	180	130	4.60	3.82	5.78	-0.78	-16.98	4.60	5.07	0.47	10.20	

See notes at end of table.

**Table K-18. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.01)		
Yes	270	160	3.37	3.00	3.93	-0.37	-10.97	3.37	3.16	-0.22	-6.41	
No	6,490	2,860	96.63	97.00	96.07	0.37	0.38	96.63	96.84	0.22	0.22	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	4,950	1,990	69.46	71.98	65.69	2.52*	3.62	69.46	70.33	0.87	1.25	
Black or African American, non-Hispanic	540	300	8.97	8.62	9.50	-0.35	-3.91	8.97	8.82	-0.15	-1.69	
Hispanic	570	250	9.20	9.70	8.45	0.50	5.43	9.20	9.56	0.36	3.86	
Asian, non-Hispanic	450	280	6.88	6.49	7.47	-0.39	-5.69	6.88	7.28	0.40	5.77	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	160	70	1.82	1.89	1.73	0.07	3.57	1.82	1.78	-0.04	-2.27	
Unknown race and ethnicity	50	100	2.95	0.66	6.38	-2.29*	-77.69	2.95	1.63	-1.32*	-44.69	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	2,780	1,410	43.79	41.25	47.60	-2.54*	-5.80	43.79	44.03	0.24	0.54	
Female	3,990	1,620	55.94	58.75	51.72	2.81*	5.03	55.94	55.97	0.04	0.06	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.05)				(Effect size = 0.05)		
None	2,340	990	29.62	29.42	29.91	-0.20	-0.66	29.62	28.17	-1.44	-4.88	
1–68 percent	720	290	8.86	9.51	7.89	0.65	7.32	8.86	8.73	-0.13	-1.52	
69–114 percent	730	280	9.49	10.30	8.27	0.81	8.57	9.49	9.13	-0.36	-3.77	
115–143 percent	710	290	9.16	9.87	8.10	0.71	7.75	9.16	8.93	-0.23	-2.50	
144 percent or more	630	350	9.81	8.88	11.22	-0.94	-9.54	9.81	10.17	0.36	3.64	
Not applicable, did not receive federal student loan(s)	1,630	830	33.06	32.02	34.62	-1.04	-3.15	33.06	34.87	1.81	5.47	

See notes at end of table.



**Table K-18. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.07)				(Effect size = 0.04)		
None	1,630	830	33.06	32.02	34.62	-1.04	-3.15	33.06	34.87	1.81	5.47	
\$1–\$15,070	1,240	600	18.04	16.57	20.24	-1.47*	-8.14	18.04	17.05	-0.99	-5.47	
\$15,071–\$25,683	1,290	550	16.32	16.84	15.53	0.52	3.21	16.32	16.48	0.16	0.98	
\$25,684–\$56,748	1,270	560	18.16	18.21	18.09	0.05	0.28	18.16	17.54	-0.62	-3.43	
\$56,749 or more	1,330	500	14.42	16.36	11.52	1.93*	13.42	14.42	14.06	-0.36	-2.50	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	790	330	11.85	11.98	11.65	0.13	1.13	11.85	12.21	0.36	3.00	
Psychology/history	960	360	14.10	16.40	10.66	2.29*	16.26	14.10	14.36	0.25	1.80	
Biology	1,140	430	9.78	10.81	8.24	1.03*	10.48	9.78	9.84	0.06	0.62	
Physical sciences	190	80	1.96	1.64	2.43	-0.31	-16.00	1.96	1.93	-0.03	-1.51	
Mathematics and statistics	130	50	0.82	1.05	0.46	0.23*	28.74	0.82	0.95	0.14	16.89	
Computer and information sciences	200	90	1.87	1.62	2.24	-0.25	-13.39	1.87	1.93	0.06	3.18	
Engineering	580	280	6.51	6.57	6.42	0.06	0.91	6.51	6.27	-0.24	-3.69	
Education	540	210	7.02	7.27	6.65	0.25	3.56	7.02	6.80	-0.22	-3.13	
Business	550	330	17.80	15.95	20.58	-1.85*	-10.41	17.80	17.71	-0.10	-0.54	
Health professions	430	190	5.77	5.53	6.13	-0.24	-4.15	5.77	5.38	-0.39	-6.78	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	720	370	12.13	11.42	13.19	-0.71	-5.82	12.13	11.79	-0.33	-2.75	
Missing/unknown	490	270	9.93	9.38	10.75	-0.55	-5.55	9.93	10.41	0.48	4.88	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	4,650	1,910	66.53	69.99	61.34	3.46*	5.20	66.53	66.17	-0.36	-0.54	
24–29	1,420	770	22.95	20.62	26.44	-2.33*	-10.15	22.95	23.74	0.79	3.44	
30 or older	700	350	10.45	9.40	12.03	-1.05	-10.09	10.45	10.09	-0.36	-3.43	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-18. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.09)				(Effect size = 0.04)	
Yes, defaulted on federal student loan(s)	420	360	9.01	6.69	12.48	-2.32*	-25.71	9.01	9.41	0.40	4.43
No, did not default on federal student loan(s)	4,710	1,840	57.94	61.29	52.90	3.36*	5.79	57.94	55.73	-2.21*	-3.81
Not applicable, did not receive federal student loan(s)	1,630	830	33.06	32.02	34.62	-1.04	-3.15	33.06	34.87	1.81	5.47

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$

<sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.

<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.

<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.

<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>6</sup> Categories were defined by quartiles computed at the institution level.

<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-19. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.10)				(Effect size = 0.06)	
New England	430	210	14.30	15.06	13.32	0.77	5.37	14.30	15.18	0.88	6.16
Mideast	820	500	25.94	23.80	28.66	-2.15	-8.27	25.94	24.85	-1.09	-4.20
Great Lakes	690	330	14.38	15.81	12.55	1.44	10.00	14.38	14.08	-0.30	-2.08
Plains	580	200	10.29	9.89	10.80	-0.40	-3.91	10.29	9.93	-0.36	-3.53
Southeast	870	480	18.95	18.65	19.32	-0.30	-1.57	18.95	20.21	1.26	6.65
Southwest	250	80	3.93	4.39	3.35	0.46	11.62	3.93	4.03	0.10	2.51
Rocky Mountains	240	40	2.80	3.85	1.48	1.04	37.23	2.80	3.24	0.44	15.56
Far West	270	180	7.14	6.11	8.45	-1.03	-14.42	7.14	6.31	-0.83	-11.57
Outlying areas	90	40	2.27	2.44	2.05	0.17	7.56	2.27	2.17	-0.10	-4.21
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.06)				(Effect size = 0.07)	
1–2,507	1,070	510	28.97	29.76	27.96	0.79	2.73	28.97	27.07	-1.90	-6.55
2,508–4,874	1,090	490	21.25	22.92	19.14	1.67	7.85	21.25	23.42	2.17	10.22
4,875–11,571	970	610	21.95	20.18	24.18	-1.77	-8.05	21.95	20.60	-1.34	-6.13
11,572 or more	1,120	460	27.84	27.14	28.71	-0.69	-2.49	27.84	28.90	1.07	3.84
Pell Grant status in 2007–08						(Effect size = 0.10)				(Effect size = 0.08)	
Received	1,590	700	23.59	24.01	23.07	0.41	1.75	23.59	24.69	1.09	4.63
Did not receive	2,610	1,320	74.06	75.10	72.73	1.05	1.41	74.06	74.15	0.10	0.13
Unknown	40	30	2.35	0.89	4.20	-1.46*	-62.05	2.35	1.16	-1.19	-50.60
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = 0.10)				(Effect size = 0.08)	
None	2,610	1,320	74.06	75.10	72.73	1.05	1.41	74.06	74.15	0.10	0.13
\$1–\$2,155	560	220	8.34	8.28	8.41	-0.05	-0.65	8.34	8.43	0.09	1.06
\$2,156–\$4,309	640	280	8.84	9.51	7.98	0.68	7.67	8.84	9.37	0.54	6.08
\$4,310 or more	400	200	6.42	6.21	6.69	-0.21	-3.29	6.42	6.89	0.47	7.26
Unknown	40	30	2.35	0.89	4.20	-1.46*	-62.05	2.35	1.16	-1.19	-50.60
Direct Loan status in 2007–08						(Effect size = 0.05)				(Effect size = 0.02)	
Received	2,550	1,240	56.51	59.18	53.14	2.66	4.71	56.51	57.68	1.16	2.06
Did not receive	1,690	810	43.49	40.82	46.86	-2.66	-6.13	43.49	42.32	-1.16	-2.68

See notes at end of table.

**Table K-19. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. eligible sample	Means		Respondents vs. eligible sample	
	Unweighted respondents	Unweighted non-respondents	Eligible sample	Respondent	Non-respondent		Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti-mated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan amount received in 2007–08						(Effect size = 0.10)			(Effect size = 0.03)	
None	1,690	810	43.49	40.82	46.86	-2.66	43.49	42.32	-1.16	-2.68
\$1–\$5,500	1,960	890	41.65	46.57	35.40	4.93*	41.65	42.96	1.31	3.15
\$5,501 or more	590	350	14.87	12.61	17.73	-2.26*	14.87	14.72	-0.15	-1.00
Parent PLUS Loan amount received in 2007–08 <sup>a</sup>						(Effect size = 0.06)			(Effect size = 0.05)	
None	3,890	1,870	90.16	89.65	90.81	-0.51	90.16	90.41	0.25	0.28
\$1–\$6,250	100	40	1.48	2.03	0.78	0.55*	1.48	1.88	0.40	27.15
\$6,251–\$11,000	90	50	2.54	2.76	2.27	0.22	2.54	2.52	-0.03	-1.04
\$11,001–\$16,091	80	50	2.90	2.36	3.59	-0.54	2.90	2.17	-0.74	-25.43
\$16,092 or more	90	40	2.91	3.20	2.55	0.29	2.91	3.03	0.12	3.98
Federal aid status in 2007–08						(Effect size = 0.07)			(Effect size = 0.04)	
Received	3,080	1,400	63.96	67.28	59.76	3.32*	63.96	65.82	1.85	2.89
Did not receive	1,170	650	36.04	32.72	40.24	-3.32*	36.04	34.18	-1.85	-5.14
Institution aid status in 2007–08						(Effect size = 0.14)			(Effect size = 0.01)	
Received	3,110	1,350	60.32	67.26	51.53	6.94*	60.32	59.79	-0.53	-0.89
Did not receive	1,140	700	39.68	32.74	48.47	-6.94*	39.68	40.21	0.53	1.35
State aid status in 2007–08						(Effect size = 0.05)			(Effect size = 0.01)	
Received	1,800	810	29.44	31.91	26.31	2.47*	29.44	28.94	-0.51	-1.72
Did not receive	2,450	1,240	70.56	68.09	73.69	-2.47*	70.56	71.06	0.51	0.72
Any aid status in 2007–08						(Effect size = 0.12)			(Effect size = 0.03)	
Received	3,890	1,800	81.95	86.65	75.99	4.70*	81.95	83.18	1.22	1.49
Did not receive	360	250	18.05	13.35	24.01	-4.70*	18.05	16.82	-1.22	-6.77
Social Security number available						(Effect size = 0.10)			(Effect size = 0.04)	
Available	4,200	2,010	97.34	98.89	95.38	1.55*	97.34	98.03	0.69	0.71
Not available	40	40	2.66	1.11	4.62	-1.55*	2.66	1.97	-0.69	-25.90

See notes at end of table.

**Table K-19. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Veteran status in 2007–08						(Effect size = 0.02)				(Effect size = 0.04)		
Yes	170	120	3.75	4.16	3.24	0.40	10.79	3.75	4.42	0.67	17.83	
No	4,070	1,940	96.25	95.84	96.76	-0.40	-0.42	96.25	95.58	-0.67	-0.70	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
White, non-Hispanic	3,130	1,360	68.85	74.25	62.00	5.40*	7.84	68.85	70.85	2.00	2.91	
Black or African American, non-Hispanic	340	220	8.47	8.18	8.84	-0.29	-3.48	8.47	8.48	0.01	0.08	
Hispanic	350	170	7.25	7.85	6.49	0.60	8.22	7.25	6.97	-0.28	-3.84	
Asian, non-Hispanic	230	150	5.70	4.74	6.92	-0.96	-16.81	5.70	5.14	-0.56	-9.86	
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
More than one race, non-Hispanic	110	50	2.29	2.43	2.12	0.14	5.98	2.29	2.35	0.06	2.48	
Unknown race and ethnicity	40	80	6.46	1.63	12.58	-4.83*	-74.70	6.46	5.06	-1.40	-21.66	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	1,680	840	40.73	37.43	44.91	-3.30*	-8.10	40.73	41.42	0.70	1.71	
Female	2,560	1,220	58.60	62.57	53.56	3.97*	6.78	58.60	58.58	-0.02	-0.04	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.13)				(Effect size = 0.05)		
None	1,600	710	35.25	38.32	31.36	3.07*	8.71	35.25	35.26	0.01	0.04	
1–64 percent	470	210	10.98	11.59	10.21	0.61	5.56	10.98	10.82	-0.16	-1.48	
65–113 percent	460	200	9.09	10.79	6.93	1.70*	18.69	9.09	9.95	0.86	9.49	
114–146 percent	460	230	9.75	9.73	9.76	-0.01	-0.13	9.75	9.37	-0.38	-3.87	
147 percent or more	390	270	10.79	7.63	14.79	-3.15*	-29.24	10.79	9.62	-1.17	-10.82	
Not applicable, did not receive federal student loan(s)	870	440	24.15	21.93	26.95	-2.21	-9.17	24.15	24.98	0.83	3.44	

See notes at end of table.

**Table K-19. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments								After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non- respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non- respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.06)				(Effect size = 0.04)		
None	870	440	24.15	21.93	26.95	-2.21	-9.17	24.15	24.98	0.83	3.44	
\$1–\$17,125	950	430	23.56	24.32	22.59	0.76	3.23	23.56	24.16	0.60	2.56	
\$17,126–\$28,199	750	370	17.81	17.67	17.99	-0.14	-0.78	17.81	17.87	0.06	0.34	
\$28,200–\$61,502	830	420	20.15	20.80	19.32	0.65	3.23	20.15	20.15	#	0.02	
\$61,503 or more	850	390	14.34	15.28	13.15	0.94	6.55	14.34	12.84	-1.50	-10.45	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Liberal arts	510	270	15.85	15.71	16.03	-0.14	-0.90	15.85	15.28	-0.57	-3.57	
Psychology/history	470	240	13.23	14.63	11.45	1.40	10.59	13.23	12.36	-0.87	-6.58	
Biology	750	330	8.28	8.85	7.55	0.57	6.92	8.28	7.91	-0.37	-4.42	
Physical sciences	150	50	1.46	1.30	1.66	-0.16	-11.10	1.46	1.42	-0.04	-2.73	
Mathematics and statistics	110	40	1.27	1.07	1.53	-0.20	-15.86	1.27	0.96	-0.31	-24.65	
Computer and information sciences	190	80	2.22	2.13	2.34	-0.09	-4.02	2.22	2.79	0.57	25.63	
Engineering	230	80	3.31	3.78	2.73	0.46	13.97	3.31	3.96	0.65	19.59	
Education	270	120	5.12	6.01	4.00	0.89*	17.37	5.12	5.28	0.15	2.99	
Business	520	310	20.68	19.27	22.48	-1.42	-6.85	20.68	20.47	-0.21	-1.03	
Health professions	280	120	5.88	6.41	5.20	0.53	9.09	5.88	6.39	0.51	8.71	
Social sciences	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Agricultural sciences	310	190	9.54	9.59	9.48	0.05	0.52	9.54	10.98	1.44	15.03	
Missing/unknown	420	220	12.50	10.62	14.88	-1.88	-15.04	12.50	11.49	-1.01	-8.05	
Age as of Dec. 31, 2007						(Effect size = ‡)				(Effect size = ‡)		
15–23	3,190	1,440	70.37	76.36	62.77	5.99*	8.51	70.37	71.61	1.24	1.77	
24–29	510	310	13.69	10.07	18.29	-3.63*	-26.49	13.69	12.45	-1.25	-9.09	
30 or older	540	300	15.02	13.30	17.19	-1.71	-11.42	15.02	15.75	0.73	4.85	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-19. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020							(Effect size = 0.20)				(Effect size = 0.04)
Yes, defaulted on federal student loan(s)	260	290	11.03	5.39	18.18	-5.64*	-51.15	11.03	9.79	-1.24	-11.25
No, did not default on federal student loan(s)	3,120	1,320	64.82	72.68	54.86	7.85*	12.12	64.82	65.23	0.41	0.63
Not applicable, did not receive federal student loan(s)	870	440	24.15	21.93	26.95	-2.21	-9.17	24.15	24.98	0.83	3.44

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$

<sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.

<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.

<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.

<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>6</sup> Categories were defined by quartiles computed at the institution level.

<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-20. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Before weight adjustments						After nonresponse weight adjustment				
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)	
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mideast	110	70	8.66	7.79	9.42	-0.88	-10.14	8.66	10.62	1.95	22.55
Great Lakes	90	50	13.17	15.30	11.34	2.13	16.17	13.17	12.52	-0.65	-4.94
Plains	80	30	5.69	4.79	6.46	-0.90	-15.81	5.69	4.75	-0.94	-16.59
Southeast	90	70	16.90	8.96	23.72	-7.94*	-46.99	16.90	10.25	-6.65	-39.36
Southwest	80	60	32.07	36.05	28.65	3.98	12.41	32.07	38.45	6.38	19.90
Rocky Mountains	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Far West	60	50	14.03	14.81	13.37	0.78	5.53	14.03	14.76	0.73	5.21
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.21)				(Effect size = 0.22)	
1–1,972	160	80	16.84	19.10	14.90	2.26	13.41	16.84	20.12	3.29	19.51
1,973–3,355	120	90	17.59	12.13	22.28	-5.46	-31.06	17.59	11.45	-6.14	-34.90
3,356–8,142	140	90	13.67	9.27	17.46	-4.40	-32.20	13.67	9.77	-3.91	-28.57
8,143 or more	140	80	51.90	59.51	45.36	7.61	14.66	51.90	58.66	6.76	13.02
Pell Grant status in 2007–08						(Effect size = ‡)				(Effect size = ‡)	
Received	270	150	20.57	25.91	15.98	5.34	25.96	20.57	22.92	2.35	11.40
Did not receive	270	180	65.96	55.15	75.25	-10.81	-16.40	65.96	59.59	-6.37	-9.66
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>7</sup>						(Effect size = ‡)				(Effect size = ‡)	
None	270	180	65.96	55.15	75.25	-10.81	-16.40	65.96	59.59	-6.37	-9.66
\$1–\$2,155	100	60	11.32	14.94	8.20	3.62	32.03	11.32	12.13	0.81	7.17
\$2,156–\$4,309	100	60	5.94	6.63	5.34	0.70	11.74	5.94	6.66	0.72	12.16
\$4,310 or more	80	40	3.32	4.33	2.44	1.02	30.69	3.32	4.13	0.81	24.47
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Direct Loan status in 2007–08						(Effect size = 0.04)				(Effect size = 0.09)	
Received	380	230	64.52	66.57	62.77	2.04	3.16	64.52	60.06	-4.47	-6.92
Did not receive	170	100	35.48	33.43	37.23	-2.04	-5.76	35.48	39.94	4.47	12.59

See notes at end of table.



**Table K-20. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	170	100	35.48	33.43	37.23	-2.04	-5.76	35.48	39.94	4.47	12.59	
\$1–\$3,938	100	60	14.39	13.52	15.15	-0.88	-6.09	14.39	10.89	-3.50	-24.32	
\$3,939–\$5,500	90	60	16.92	9.45	23.33	-7.47	-44.13	16.92	8.67	-8.25	-48.76	
\$5,501–\$10,500	180	110	24.45	24.64	24.29	0.19	0.76	24.45	23.04	-1.41	-5.78	
\$10,501 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Parent PLUS Loan amount received in 2007–08 <sup>8</sup>						(Effect size = ‡)				(Effect size = ‡)		
None	520	320	95.87	98.54	93.58	2.67	2.78	95.87	98.65	2.77	2.89	
\$1–\$5,000	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,001–\$8,292	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$8,293–\$11,737	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$11,738 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Federal aid status in 2007–08						(Effect size = 0.15)				(Effect size = 0.03)		
Received	430	250	69.97	76.75	64.15	6.78	9.69	69.97	68.71	-1.26	-1.80	
Did not receive	120	80	30.03	23.25	35.85	-6.78	-22.57	30.03	31.29	1.26	4.20	
Institution aid status in 2007–08						(Effect size = 0.02)				(Effect size = 0.04)		
Received	160	70	10.80	11.31	10.37	0.50	4.67	10.80	9.54	-1.26	-11.69	
Did not receive	380	260	89.20	88.69	89.63	-0.50	-0.57	89.20	90.46	1.26	1.42	
State aid status in 2007–08						(Effect size = 0.03)				(Effect size = 0.11)		
Received	150	80	12.94	11.92	13.81	-1.02	-7.86	12.94	9.33	-3.60	-27.85	
Did not receive	390	250	87.06	88.08	86.19	1.02	1.17	87.06	90.67	3.60	4.14	
Any aid status in 2007–08						(Effect size = 0.25)				(Effect size = 0.04)		
Received	500	280	82.63	91.98	74.60	9.35*	11.31	82.63	81.09	-1.54	-1.86	
Did not receive	40	50	17.37	8.02	25.40	-9.35*	-53.82	17.37	18.91	1.54	8.87	
Social Security number available						(Effect size = ‡)				(Effect size = ‡)		
Available	540	330	96.92	99.44	94.75	2.52	2.60	96.92	99.01	2.09	2.16	
Not available	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table K-20. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Veteran status in 2007–08						(Effect size = 0.04)				(Effect size = 0.08)	
Yes	70	50	18.82	17.27	20.16	-1.55	-8.26	18.82	15.57	-3.25	-17.26
No	480	290	81.18	82.73	79.84	1.55	1.91	81.18	84.43	3.25	4.00
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	270	150	41.38	46.58	36.91	5.20	12.57	41.38	47.34	5.96	14.41
Black or African American, non-Hispanic	120	70	21.88	29.56	15.28	7.68	35.11	21.88	26.08	4.20	19.19
Hispanic	100	60	17.68	16.69	18.53	-0.99	-5.63	17.68	13.95	-3.73	-21.07
Asian, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Unknown race and ethnicity	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	240	140	43.48	34.24	51.41	-9.24	-21.24	43.48	37.17	-6.31	-14.52
Female	310	190	56.52	65.76	48.59	9.24	16.34	56.52	62.83	6.31	11.17
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>8</sup>						(Effect size = 0.23)				(Effect size = 0.22)	
None	140	80	19.05	22.68	15.93	3.63	19.07	19.05	26.98	7.93*	41.66
1–103 percent	90	60	26.55	29.42	24.09	2.87	10.81	26.55	25.83	-0.72	-2.73
104–141 percent	100	40	9.92	13.58	6.79	3.65	36.79	9.92	10.41	0.48	4.87
142–166 percent	90	50	8.85	8.09	9.51	-0.76	-8.63	8.85	7.38	-1.47	-16.62
167 percent or more	80	60	17.58	14.37	20.34	-3.21	-18.25	17.58	15.77	-1.82	-10.33
Not applicable, did not receive federal student loan(s)	50	40	18.04	11.86	23.35	-6.18	-34.25	18.04	13.64	-4.41	-24.43

See notes at end of table.

**Table K-20. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments							After nonresponse weight adjustment			
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>8</sup>						(Effect size = 0.39)				(Effect size = 0.28)	
None	50	40	18.04	11.86	23.35	-6.18	-34.25	18.04	13.64	-4.41	-24.43
\$1–\$23,046	130	70	20.21	18.17	21.97	-2.04	-10.11	20.21	22.38	2.17	10.71
\$23,047–\$35,955	120	80	23.12	14.92	30.16	-8.20	-35.46	23.12	16.76	-6.36	-27.52
\$35,956–\$50,287	130	70	16.23	17.52	15.12	1.29	7.98	16.23	14.68	-1.54	-9.52
\$50,288 or more	130	70	22.40	37.52	9.40	15.13*	67.54	22.40	32.54	10.15*	45.31
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)	
Liberal arts	110	80	6.73	5.92	7.43	-0.81	-12.02	6.73	5.25	-1.48	-22.01
Psychology/history	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Computer and information sciences	120	60	12.02	6.92	16.41	-5.10	-42.44	12.02	6.42	-5.60	-46.61
Engineering	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Business	120	80	41.92	36.86	46.26	-5.06	-12.06	41.92	44.14	2.22	5.31
Health professions	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Agricultural sciences	110	60	9.09	9.01	9.16	-0.08	-0.88	9.09	7.15	-1.94	-21.39
Missing/unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007						(Effect size = 0.23)				(Effect size = 0.16)	
15–23	130	80	12.65	8.73	16.01	-3.92	-30.96	12.65	7.77	-4.88	-38.54
24–29	180	120	30.13	22.67	36.54	-7.46	-24.77	30.13	29.06	-1.07	-3.54
30 or older	240	140	57.22	68.60	47.45	11.38	19.89	57.22	63.16	5.94	10.38

See notes at end of table.

**Table K-20. Unit-level nonresponse bias analysis for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Before weight adjustments						After nonresponse weight adjustment			
	Means, base weighted			Respondents vs. eligible sample			Means		Respondents vs. eligible sample	
	Unweighted respondents	Unweighted non-respondents	Eligible sample	Respondent	Non-respondent		Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Federal loan default status as of Oct. 31, 2020						(Effect size = 0.18)				(Effect size = 0.12)
Yes, defaulted on federal student loan(s)	130	100	34.35	33.62	34.98	-0.73 -2.14	34.35	34.09	-0.26	-0.77
No, did not default on federal student loan(s)	370	190	47.60	54.52	41.66	6.91 14.52	47.60	52.28	4.67	9.82
Not applicable, did not receive federal student loan(s)	50	40	18.04	11.86	23.35	-6.18 -34.25	18.04	13.64	-4.41	-24.43

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$

<sup>1</sup> This value is calculated as the difference between the base-weighted mean of respondent cases and the base-weighted eligible-sample mean.

<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.

<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.

<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>6</sup> Categories were defined by quartiles computed at the institution level.

<sup>7</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>8</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-21. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>2</sup>					
Public	62.78	62.78	62.86	-0.08	-0.08
Private nonprofit	32.75	32.75	32.55	0.20	0.20
Private for-profit	4.46	4.46	4.59	-0.13	-0.13
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	6.91	6.91	6.13	0.78	0.78
Mideast	17.52	17.52	17.35	0.17	0.17
Great Lakes	15.90	15.90	16.49	-0.59	-0.59
Plains	8.44	8.44	8.67	-0.23	-0.23
Southeast	24.46	24.46	24.72	-0.26	-0.26
Southwest	9.36	9.36	8.81	0.55	0.55
Rocky Mountains	3.89	3.89	4.36	-0.47*	-0.47
Far West	12.12	12.12	12.10	0.02	0.02
Outlying areas	1.41	1.41	1.36	0.05	0.05
Total enrollment of baccalaureate-granting institution <sup>2,4</sup>					
1–4,760	20.96	20.96	21.30	-0.34	-0.34
4,761–13,042	21.08	21.08	22.11	-1.03	-1.03
13,043–27,210	26.98	26.98	26.41	0.57	0.57
27,211 or more	30.99	30.99	30.18	0.81	0.81
Pell Grant status in 2007–08					
Received	25.23	25.23	22.43	2.80*	2.80*
Did not receive	71.82	71.82	75.98	-4.16*	-4.16*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.82	71.82	75.98	-4.16*	-4.16*
\$1–\$2,155	9.58	9.58	9.45	0.13	0.13
\$2,156–\$4,309	9.18	9.18	8.04	1.14*	1.14*
\$4,310 or more	6.47	6.47	4.94	1.53*	1.53*
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	48.82	48.82	44.69	4.13*	4.13*
Did not receive	51.18	51.18	55.31	-4.13*	-4.13*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	51.18	51.18	55.31	-4.13*	-4.13*
\$1–\$4,410	11.66	11.66	11.81	-0.15	-0.15
\$4,411–\$5,500	22.94	22.94	21.63	1.31*	1.31*
\$5,501–\$6,490	‡	‡	‡	‡	‡
\$6,491 or more	13.13	13.13	10.23	2.90*	2.90*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	93.35	93.35	94.09	-0.74*	-0.74*
\$1–\$5,000	1.47	1.47	1.25	0.22	0.22
\$5,001–\$9,396	1.62	1.62	1.50	0.12	0.12
\$9,397–\$14,000	‡	‡	‡	‡	‡
\$14,001 or more	1.74	1.74	1.61	0.13	0.13

See notes at end of table.

**Table K-21. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2007–08					
Received	57.01	57.01	53.38	3.63*	3.63*
Did not receive	42.99	42.99	46.62	-3.63*	-3.63*
Institution aid status in 2007–08					
Received	39.68	39.68	40.55	-0.87	-0.87
Did not receive	60.32	60.32	59.45	0.87	0.87
State aid status in 2007–08					
Received	27.42	27.42	28.19	-0.77	-0.77
Did not receive	72.58	72.58	71.81	0.77	0.77
Any aid status in 2007–08					
Received	74.91	74.91	75.23	-0.32	-0.32
Did not receive	25.09	25.09	24.77	0.32	0.32
Social Security number available					
Available	96.13	96.13	96.56	-0.43	-0.43
Not available	3.87	3.87	3.44	0.43	0.43
Veteran status in 2007–08					
Yes	4.12	4.12	4.34	-0.22	-0.22
No	95.88	95.88	95.66	0.22	0.22
Race/ethnicity					
White, non-Hispanic	69.48	68.08	71.81	-2.33*	-3.73*
Black or African American, non-Hispanic	9.48	9.46	8.27	1.21*	1.19*
Hispanic	8.91	8.91	8.82	0.09	0.09
Asian, non-Hispanic	6.43	6.42	6.10	0.33	0.32
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.96	1.92	2.23	-0.27*	-0.31*
Unknown race and ethnicity	2.98	4.42	1.91	1.07*	2.51*
Sex					
Male	42.87	42.87	42.49	0.38	0.38
Female	57.13	56.75	57.51	-0.38	-0.76
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	30.55	30.55	31.90	-1.35*	-1.35*
1–69 percent	10.30	10.30	9.38	0.92	0.92
70–116 percent	9.48	9.48	9.48	#	#
117–146 percent	8.96	8.96	8.84	0.12	0.12
147 percent or more	10.03	10.03	8.93	1.10*	1.10*
Not applicable, did not receive federal student loan(s)	30.68	30.68	31.47	-0.79	-0.79

See notes at end of table.

**Table K-21. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	30.68	30.68	31.47	-0.79	-0.79
\$1–\$16,735	19.22	19.22	20.14	-0.92*	-0.92
\$16,736–\$27,586	17.54	17.54	17.55	-0.01	-0.01
\$27,587–\$57,914	17.92	17.92	16.87	1.05*	1.05*
\$57,915 or more	14.64	14.64	13.96	0.68	0.68
Baccalaureate major					
Liberal arts	12.90	12.90	15.84	-2.94*	-2.94*
Psychology/history	13.09	13.09	15.85	-2.76*	-2.76*
Biology	8.84	8.84	5.00	3.84*	3.84*
Physical sciences	1.67	1.67	1.40	0.27	0.27
Mathematics and statistics	0.91	0.91	1.04	-0.13	-0.13
Computer and information sciences	2.41	2.41	2.39	0.02	0.02
Engineering	5.25	5.25	5.15	0.10	0.10
Education	6.00	6.00	6.65	-0.65*	-0.65*
Business	19.79	19.79	21.43	-1.64*	-1.64*
Health professions	6.28	6.28	6.85	-0.57	-0.57
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	11.32	11.32	12.19	-0.87	-0.87
Missing/unknown	11.04	11.04	5.48	5.56*	5.56*
Age as of Dec. 31, 2007					
15–23	65.25	65.25	66.92	-1.67*	-1.67*
24–29	20.28	20.28	18.75	1.53*	1.53*
30 or older	14.42	14.13	14.31	0.11	-0.18
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	10.63	10.63	8.50	2.13*	2.13*
No, did not default on federal student loan(s)	58.69	58.69	60.02	-1.33	-1.33
Not applicable, did not receive federal student loan(s)	30.68	30.68	31.47	-0.79	-0.79

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-22. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	3.45	3.61	2.81	0.64	0.80
Mideast	13.82	13.89	14.34	-0.52	-0.45
Great Lakes	16.91	16.80	17.64	-0.73	-0.84
Plains	7.87	7.66	8.23	-0.36	-0.57
Southeast	27.97	27.71	27.73	0.24	-0.02
Southwest	10.14	10.60	9.99	0.15	0.61
Rocky Mountains	4.18	4.31	4.44	-0.26	-0.13
Far West	14.88	14.59	14.09	0.79	0.50
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–11,664	19.90	19.48	20.68	-0.78	-1.20*
11,665–20,095	23.95	24.16	24.08	-0.13	0.08
20,096–31,916	25.61	25.54	25.23	0.38	0.31
31,917 or more	30.54	30.82	30.01	0.53	0.81
Pell Grant status in 2007–08					
Received	25.97	26.46	22.51	3.46*	3.95*
Did not receive	71.46	71.16	75.64	-4.18*	-4.18*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.46	71.16	75.64	-4.18*	-4.18*
\$1–\$2,155	9.73	10.09	9.42	0.31	0.67
\$2,156–\$4,309	9.67	9.62	8.16	1.51*	1.46*
\$4,310 or more	6.57	6.74	4.92	1.65*	1.82*
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	42.83	43.45	39.77	3.06*	3.68*
Did not receive	57.17	56.55	60.23	-3.06*	-3.68*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	57.17	56.55	60.23	-3.06*	-3.68*
\$1–\$3,767	9.96	10.34	10.07	-0.11	0.27
\$3,768–\$5,500	21.10	21.00	20.20	0.90	0.80
\$5,501–\$5,935	‡	‡	‡	‡	‡
\$5,936 or more	11.44	11.82	9.18	2.26*	2.64*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	94.92	94.79	95.28	-0.36	-0.49
\$1–\$4,488	‡	‡	‡	‡	‡
\$4,489–\$7,453	‡	‡	‡	‡	‡
\$7,454–\$12,000	‡	‡	‡	‡	‡
\$12,001 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	51.22	52.27	48.50	2.72*	3.77*
Did not receive	48.78	47.73	51.50	-2.72*	-3.77*

See notes at end of table.



**Table K-22. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	30.73	31.18	31.31	-0.58	-0.13
Did not receive	69.27	68.82	68.69	0.58	0.13
State aid status in 2007–08					
Received	27.86	27.51	28.22	-0.36	-0.71
Did not receive	72.14	72.49	71.78	0.36	0.71
Any aid status in 2007–08					
Received	69.52	70.58	69.99	-0.47	0.59
Did not receive	30.48	29.42	30.01	0.47	-0.59
Social Security number available					
Available	94.84	95.42	95.44	-0.60	-0.02
Not available	5.16	4.58	4.56	0.60	0.02
Veteran status in 2007–08					
Yes	3.14	3.30	3.38	-0.24*	-0.08
No	96.86	96.70	96.62	0.24*	0.08
Race/ethnicity					
White, non-Hispanic	71.47	69.69	72.45	-0.98	-2.76*
Black or African American, non-Hispanic	8.35	8.88	8.05	0.30	0.83*
Hispanic	9.08	9.19	8.72	0.36	0.47
Asian, non-Hispanic	7.12	6.84	6.77	0.35	0.07
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.80	1.79	2.12	-0.32*	-0.33*
Unknown race and ethnicity	1.54	2.89	1.23	0.31	1.66*
Sex					
Male	44.55	44.14	44.09	0.46	0.05
Female	55.45	55.60	55.91	-0.46	-0.31
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	28.85	29.08	30.10	-1.25*	-1.02
1–69 percent	8.41	8.59	8.51	-0.10	0.08
70–114 percent	9.06	9.29	8.89	0.17	0.40
115–143 percent	8.90	8.97	8.99	-0.09	-0.02
144 percent or more	9.28	9.61	8.52	0.76*	1.09*
Not applicable, did not receive federal student loan(s)	35.50	34.47	34.98	0.52	-0.51

See notes at end of table.

**Table K-22. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	35.50	34.47	34.98	0.52	-0.51
\$1–\$15,070	17.46	17.66	18.63	-1.17*	-0.97
\$15,071–\$25,683	16.22	15.98	16.58	-0.36	-0.60
\$25,684–\$56,748	16.77	17.78	15.95	0.82	1.83*
\$56,749 or more	14.06	14.12	13.85	0.21	0.27
Baccalaureate major					
Liberal arts	12.12	11.88	14.93	-2.81*	-3.05*
Psychology/history	13.88	13.97	16.95	-3.07*	-2.98*
Biology	10.03	9.70	5.26	4.77*	4.44*
Physical sciences	2.02	1.91	1.56	0.46*	0.35
Mathematics and statistics	‡	‡	‡	‡	‡
Computer and information sciences	2.01	1.84	1.89	0.12	-0.05
Engineering	6.53	6.64	6.52	0.01	0.12
Education	7.07	6.91	7.61	-0.54*	-0.70*
Business	17.29	17.66	18.96	-1.67*	-1.30*
Health professions	5.66	5.81	7.10	-1.44*	-1.29*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	12.42	12.46	12.86	-0.44	-0.40
Missing/unknown	9.79	9.97	4.78	5.01*	5.19*
Age as of Dec. 31, 2007					
15–23	66.54	66.61	67.68	-1.14	-1.07
24–29	23.35	22.93	21.79	1.56*	1.14
30 or older	10.10	10.39	10.53	-0.43	-0.14
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	8.84	8.82	7.57	1.27*	1.25*
No, did not default on federal student loan(s)	55.66	56.71	57.45	-1.79*	-0.74
Not applicable, did not receive federal student loan(s)	35.50	34.47	34.98	0.52	-0.51

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-23. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	14.48	14.17	13.42	1.06	0.75
Mideast	26.01	25.69	23.56	2.45*	2.13
Great Lakes	14.15	14.55	15.29	-1.14	-0.74
Plains	10.17	10.30	9.54	0.63	0.76
Southeast	19.40	19.27	20.65	-1.25	-1.38
Southwest	3.68	3.90	4.52	-0.84*	-0.62
Rocky Mountains	‡	‡	‡	‡	‡
Far West	6.82	7.12	6.83	-0.01	0.29
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–2,507	27.97	28.69	26.08	1.89*	2.61*
2,508–4,874	22.64	21.36	23.40	-0.76	-2.04*
4,875–11,571	21.60	22.41	23.05	-1.45	-0.64
11,572 or more	27.79	27.54	27.47	0.32	0.07
Pell Grant status in 2007–08					
Received	24.54	23.50	21.67	2.87*	1.83
Did not receive	73.53	73.90	77.26	-3.73*	-3.36*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	73.53	73.90	77.26	-3.73*	-3.36*
\$1–\$2,155	8.92	8.34	8.48	0.44	-0.14
\$2,156–\$4,309	8.87	8.77	7.92	0.95*	0.85
\$4,310 or more	6.76	6.38	5.27	1.49*	1.11
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	58.34	56.96	51.14	7.20*	5.82*
Did not receive	41.66	43.04	48.86	-7.20*	-5.82*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	41.66	43.04	48.86	-7.20*	-5.82*
\$1–\$5,500	41.92	41.31	39.00	2.92*	2.31*
\$5,501–\$5,531	‡	‡	‡	‡	‡
\$5,532 or more	16.40	15.65	12.13	4.27*	3.52*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	90.06	90.24	91.40	-1.34*	-1.16
\$1–\$6,250	‡	‡	‡	‡	‡
\$6,251–\$11,000	‡	‡	‡	‡	‡
\$11,001–\$16,091	‡	‡	‡	‡	‡
\$16,092 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	66.30	64.32	60.35	5.95*	3.97*
Did not receive	33.70	35.68	39.65	-5.95*	-3.97*

See notes at end of table.

**Table K-23. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	60.89	59.89	61.68	-0.79	-1.79
Did not receive	39.11	40.11	38.32	0.79	1.79
State aid status in 2007–08					
Received	28.86	29.22	30.08	-1.22	-0.86
Did not receive	71.14	70.78	69.92	1.22	0.86
Any aid status in 2007–08					
Received	84.26	82.15	83.82	0.44	-1.67
Did not receive	15.74	17.85	16.18	-0.44	1.67
Social Security number available					
Available	98.13	97.37	98.36	-0.23	-0.99
Not available	1.87	2.63	1.64	0.23	0.99
Veteran status in 2007–08					
Yes	4.04	3.70	4.72	-0.68	-1.02*
No	95.96	96.30	95.28	0.68	1.02*
Race/ethnicity					
White, non-Hispanic	69.41	68.63	73.43	-4.02*	-4.80*
Black or African American, non-Hispanic	9.75	8.88	7.48	2.27*	1.40
Hispanic	7.36	7.17	7.90	-0.54	-0.73
Asian, non-Hispanic	5.59	5.67	5.05	0.54	0.62
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	‡	‡	‡	‡	‡
Unknown race and ethnicity	4.48	6.38	2.56	1.92*	3.82*
Sex					
Male	39.34	40.35	39.68	-0.34	0.67
Female	60.66	58.98	60.32	0.34	-1.34
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	35.67	34.91	36.59	-0.92	-1.68
1–65 percent	10.98	10.87	9.83	1.15	1.04
66–114 percent	9.45	9.06	9.33	0.12	-0.27
115–146 percent	9.72	9.38	8.23	1.49*	1.15
147 percent or more	10.53	10.65	8.58	1.95*	2.07*
Not applicable, did not receive federal student loan(s)	23.65	25.13	27.45	-3.80*	-2.32

See notes at end of table.

**Table K-23. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	23.65	25.13	27.45	-3.80*	-2.32
\$1–\$17,125	23.72	23.25	24.32	-0.60	-1.07
\$17,126–\$28,199	17.73	17.58	16.95	0.78	0.63
\$28,200–\$61,502	20.57	19.89	18.17	2.40*	1.72*
\$61,503 or more	14.33	14.15	13.10	1.23	1.05
Baccalaureate major					
Liberal arts	15.49	15.71	18.25	-2.76*	-2.54*
Psychology/history	13.30	13.11	15.83	-2.53*	-2.72*
Biology	7.57	8.23	4.82	2.75*	3.41*
Physical sciences	‡	‡	‡	‡	‡
Mathematics and statistics	‡	‡	‡	‡	‡
Computer and information sciences	2.02	2.20	2.20	-0.18	#
Engineering	3.49	3.27	3.17	0.32	0.10
Education	4.77	5.07	5.72	-0.95*	-0.65*
Business	20.74	20.87	23.55	-2.81*	-2.68*
Health professions	6.81	6.33	6.80	0.01	-0.47
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	9.73	9.42	10.12	-0.39	-0.70
Missing/unknown	12.82	12.43	5.90	6.92*	6.53*
Age as of Dec. 31, 2007					
15–23	70.14	69.80	72.38	-2.24*	-2.58*
24–29	13.39	13.85	11.64	1.75	2.21*
30 or older	16.29	15.45	15.91	0.38	-0.46
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	10.24	10.89	7.98	2.26*	2.91*
No, did not default on federal student loan(s)	66.11	63.99	64.56	1.55	-0.57
Not applicable, did not receive federal student loan(s)	23.65	25.13	27.45	-3.80*	-2.32

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-24. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	†	†	†	†	†
Mideast	7.32	8.68	14.62	-7.30*	-5.94*
Great Lakes	†	†	†	†	†
Plains	†	†	†	†	†
Southeast	12.25	16.90	12.51	-0.26	4.39
Southwest	†	†	†	†	†
Rocky Mountains	†	†	†	†	†
Far West	†	†	†	†	†
Outlying areas	†	†	†	†	†
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–1,972	14.25	16.90	21.31	-7.06	-4.41
1,973–3,355	19.36	17.61	18.83	0.53	-1.22
3,356–8,142	9.69	13.66	19.82	-10.13*	-6.16
8,143 or more	56.70	51.83	40.05	16.65	11.78*
Pell Grant status in 2007–08					
Received	19.76	20.65	26.76	-7.00	-6.11
Did not receive	64.43	65.90	71.58	-7.15	-5.68
Unknown	†	†	†	†	†
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	64.43	65.90	71.58	-7.15	-5.68
\$1–\$2,155	12.28	11.40	16.68	-4.40	-5.28
\$2,156–\$4,309	4.53	5.93	7.19	-2.66*	-1.26
\$4,310 or more	†	†	†	†	†
Unknown	†	†	†	†	†
Direct Loan status in 2007–08					
Received	63.17	64.54	66.16	-2.99	-1.62
Did not receive	36.83	35.46	33.84	2.99	1.62
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	36.83	35.46	33.84	2.99	1.62
\$1–\$3,938	15.98	14.38	19.53	-3.55	-5.15
\$3,939–\$5,500	†	†	†	†	†
\$5,501–\$10,500	22.38	24.52	27.78	-5.40	-3.26
\$10,501 or more	†	†	†	†	†
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	95.41	95.85	96.96	-1.55	-1.11
\$1–\$5,000	†	†	†	†	†
\$5,001–\$8,253	†	†	†	†	†
\$8,254–\$11,737	†	†	†	†	†
\$11,738 or more	†	†	†	†	†
Federal aid status in 2007–08					
Received	70.29	70.01	70.77	-0.48	-0.76
Did not receive	29.71	29.99	29.23	0.48	0.76

See notes at end of table.

**Table K-24. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	9.88	10.81	17.33	-7.45*	-6.52*
Did not receive	90.12	89.19	82.67	7.45*	6.52*
State aid status in 2007–08					
Received	10.70	12.92	14.33	-3.63	-1.41
Did not receive	89.30	87.08	85.67	3.63	1.41
Any aid status in 2007–08					
Received	82.15	82.65	86.09	-3.94	-3.44
Did not receive	17.85	17.35	13.91	3.94	3.44
Social Security number available					
Available	99.56	96.90	98.99	0.57	-2.09
Not available	‡	‡	‡	‡	‡
Veteran status in 2007–08					
Yes	‡	‡	‡	‡	‡
No	81.40	81.20	85.24	-3.84	-4.04
Race/ethnicity					
White, non-Hispanic	41.88	41.41	51.66	-9.78*	-10.25*
Black or African American, non-Hispanic	23.37	21.88	16.86	6.51	5.02
Hispanic	17.89	17.68	16.78	1.11	0.90
Asian, non-Hispanic	‡	‡	‡	‡	‡
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	‡	‡	‡	‡	‡
Unknown race and ethnicity	‡	‡	‡	‡	‡
Sex					
Male	45.17	43.50	40.44	4.73	3.06
Female	54.83	56.50	59.56	-4.73	-3.06
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	16.83	19.08	23.34	-6.51*	-4.26
1–103 percent	30.78	26.46	19.06	11.72*	7.40
104–141 percent	‡	‡	‡	‡	‡
142–166 percent	‡	‡	‡	‡	‡
167 percent or more	21.49	17.56	16.41	5.08	1.15
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡

See notes at end of table.

**Table K-24. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTG000 (B&B:08/18 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	‡	‡	‡	‡	‡
\$1–\$23,046	18.20	20.19	20.61	-2.41	-0.42
\$23,047–\$35,955	25.27	23.09	21.60	3.67	1.49
\$35,956–\$50,287	19.17	16.21	24.08	-4.91*	-7.87*
\$50,288 or more	22.87	22.37	21.68	1.19	0.69
Baccalaureate major					
Liberal arts	4.92	6.75	11.27	-6.35*	-4.52*
Psychology/history	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡
Computer and information sciences	10.96	12.03	10.73	0.23	1.30
Engineering	‡	‡	‡	‡	‡
Business	47.97	41.87	40.20	7.77	1.67
Health professions	‡	‡	‡	‡	‡
Agricultural sciences	7.53	9.16	17.55	-10.02*	-8.39*
Missing/unknown	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007					
15–23	11.13	12.68	17.76	-6.63	-5.08
24–29	27.57	30.17	27.59	-0.02	2.58
30 or older	61.31	57.15	54.65	6.66	2.50
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	38.71	34.31	24.89	13.82*	9.42*
No, did not default on federal student loan(s)	46.80	47.54	63.08	-16.28*	-15.54*
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).



**Table K-25. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>2</sup>					
Public	62.78	62.78	62.86	-0.08	-0.08
Private nonprofit	32.75	32.75	32.55	0.20	0.20
Private for-profit	4.46	4.46	4.59	-0.13	-0.13
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	6.91	6.91	5.90	1.01	1.01*
Mideast	17.52	17.52	17.37	0.15	0.15
Great Lakes	15.90	15.90	16.85	-0.95*	-0.95
Plains	8.44	8.44	8.81	-0.37	-0.37
Southeast	24.46	24.46	24.46	#	#
Southwest	9.36	9.36	8.74	0.62	0.62
Rocky Mountains	3.89	3.89	4.42	-0.53*	-0.53
Far West	12.12	12.12	12.03	0.09	0.09
Outlying areas	1.41	1.41	1.41	#	#
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–4,760	20.96	20.96	21.02	-0.06	-0.06
4,761–13,042	21.08	21.08	22.54	-1.46*	-1.46*
13,043–27,210	26.98	26.98	26.31	0.67	0.67
27,211 or more	30.99	30.99	30.14	0.85	0.85
Pell Grant status in 2007–08					
Received	25.23	25.23	22.39	2.84*	2.84*
Did not receive	71.82	71.82	76.11	-4.29*	-4.29*
Unknown	2.95	2.95	1.50	1.45*	1.45*
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.82	71.82	76.11	-4.29*	-4.29*
\$1–\$2,155	9.58	9.58	9.47	0.11	0.11
\$2,156–\$4,309	9.18	9.18	8.00	1.18*	1.18*
\$4,310 or more	6.47	6.47	4.92	1.55*	1.55*
Unknown	2.95	2.95	1.50	1.45*	1.45*
Direct Loan status in 2007–08					
Received	48.82	48.82	44.69	4.13*	4.13*
Did not receive	51.18	51.18	55.31	-4.13*	-4.13*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	51.18	51.18	55.31	-4.13*	-4.13*
\$1–\$4,410	11.66	11.66	11.88	-0.22	-0.22
\$4,411–\$5,500	22.94	22.94	21.45	1.49*	1.49*
\$5,501–\$6,490	1.09	1.09	1.02	0.07	0.07
\$6,491 or more	13.13	13.13	10.34	2.79*	2.79*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	93.35	93.35	94.08	-0.73*	-0.73*
\$1–\$5,000	1.47	1.47	1.17	0.30	0.30*
\$5,001–\$9,396	1.62	1.62	1.69	-0.07	-0.07
\$9,397–\$14,000	1.83	1.83	1.48	0.35*	0.35
\$14,001 or more	1.74	1.74	1.58	0.16	0.16

See notes at end of table.

**Table K-25. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2007–08					
Received	57.01	57.01	53.35	3.66*	3.66*
Did not receive	42.99	42.99	46.65	-3.66*	-3.66*
Institution aid status in 2007–08					
Received	39.68	39.68	40.29	-0.61	-0.61
Did not receive	60.32	60.32	59.71	0.61	0.61
State aid status in 2007–08					
Received	27.42	27.42	28.23	-0.81	-0.81
Did not receive	72.58	72.58	71.77	0.81	0.81
Any aid status in 2007–08					
Received	74.91	74.91	75.33	-0.42	-0.42
Did not receive	25.09	25.09	24.67	0.42	0.42
Social Security number available					
Available	96.13	96.13	96.53	-0.40	-0.40
Not available	3.87	3.87	3.47	0.40	0.40
Veteran status in 2007–08					
Yes	4.12	4.12	4.33	-0.21	-0.21
No	95.88	95.88	95.67	0.21	0.21
Race/ethnicity					
White, non-Hispanic	69.48	68.08	71.99	-2.51*	-3.91*
Black or African American, non-Hispanic	9.48	9.46	8.32	1.16*	1.14*
Hispanic	8.91	8.91	8.89	0.02	0.02
Asian, non-Hispanic	6.43	6.42	6.05	0.38	0.37
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.96	1.92	2.22	-0.26*	-0.30*
Unknown race and ethnicity	2.98	4.42	1.69	1.29*	2.73*
Sex					
Male	42.87	42.87	42.49	0.38	0.38
Female	57.13	56.75	57.51	-0.38	-0.76
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	30.55	30.55	31.84	-1.29*	-1.29*
1–69 percent	10.30	10.30	9.25	1.05	1.05
70–116 percent	9.48	9.48	9.56	-0.08	-0.08
117–146 percent	8.96	8.96	8.92	0.04	0.04
147 percent or more	10.03	10.03	9.19	0.84	0.84
Not applicable, did not borrow federal student loan(s)	30.68	30.68	31.24	-0.56	-0.56

See notes at end of table.

**Table K-25. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	30.68	30.68	31.24	-0.56	-0.56
\$1–\$16,735	19.22	19.22	20.06	-0.84	-0.84
\$16,736–\$27,586	17.54	17.54	17.43	0.11	0.11
\$27,587–\$57,914	17.92	17.92	17.59	0.33	0.33
\$57,915 or more	14.64	14.64	13.69	0.95	0.95*
Baccalaureate major					
Liberal arts	12.90	12.90	15.84	-2.94*	-2.94*
Psychology/history	13.09	13.09	15.85	-2.76*	-2.76*
Biology	8.84	8.84	5.00	3.84*	3.84*
Physical sciences	1.56	1.67	1.40	0.16	0.27
Mathematics and statistics	1.03	0.91	1.04	-0.01	-0.13
Computer and information sciences	2.41	2.41	2.39	0.02	0.02
Engineering	5.25	5.25	5.15	0.10	0.10
Education	6.00	6.00	6.65	-0.65*	-0.65*
Business	19.79	19.79	21.43	-1.64*	-1.64*
Health professions	6.28	6.28	6.85	-0.57	-0.57
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	11.32	11.32	12.19	-0.87	-0.87
Missing/unknown	11.04	11.04	5.48	5.56*	5.56*
Age as of Dec. 31, 2007					
15–23	65.25	65.25	66.59	-1.34	-1.34
24–29	20.28	20.28	18.73	1.55*	1.55*
30 or older	14.42	14.13	14.65	-0.23	-0.52
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	10.63	10.63	8.76	1.87*	1.87*
No, did not default on federal student loan(s)	58.69	58.69	60.00	-1.31	-1.31
Not applicable, did not receive federal student loan(s)	30.68	30.68	31.24	-0.56	-0.56

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-26. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	3.55	3.61	2.76	0.79	0.85
Mideast	14.25	13.89	14.53	-0.28	-0.64
Great Lakes	16.59	16.80	17.96	-1.37*	-1.16
Plains	7.90	7.66	8.30	-0.40	-0.64
Southeast	27.87	27.71	27.31	0.56	0.40
Southwest	10.00	10.60	9.91	0.09	0.69
Rocky Mountains	4.22	4.31	4.48	-0.26	-0.17
Far West	14.74	14.59	13.99	0.75	0.60
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–11,664	20.39	19.48	20.89	-0.50	-1.41*
11,665–20,095	23.68	24.16	24.00	-0.32	0.16
20,096–31,916	25.55	25.54	25.28	0.27	0.26
31,917 or more	30.38	30.82	29.83	0.55	0.99
Pell Grant status in 2007–08					
Received	26.08	26.46	22.52	3.56*	3.94*
Did not receive	71.52	71.16	75.80	-4.28*	-4.64*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.52	71.16	75.80	-4.28*	-4.64*
\$1–\$2,155	9.94	10.09	9.50	0.44	0.59
\$2,156–\$4,309	9.66	9.62	8.12	1.54*	1.50*
\$4,310 or more	6.48	6.74	4.90	1.58*	1.84*
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	42.92	43.45	39.77	3.15*	3.68*
Did not receive	57.08	56.55	60.23	-3.15*	-3.68*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	57.08	56.55	60.23	-3.15*	-3.68*
\$1–\$3,767	9.87	10.34	10.11	-0.24	0.23
\$3,768–\$5,500	21.22	21.00	20.05	1.17*	0.95
\$5,501–\$5,935	‡	‡	‡	‡	‡
\$5,936 or more	11.44	11.82	9.23	2.21*	2.59*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	94.79	94.79	95.28	-0.49	-0.49
\$1–\$4,488	‡	‡	‡	‡	‡
\$4,489–\$7,453	‡	‡	‡	‡	‡
\$7,454–\$12,000	‡	‡	‡	‡	‡
\$12,001 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	51.26	52.27	48.41	2.85*	3.86*
Did not receive	48.74	47.73	51.59	-2.85*	-3.86*

See notes at end of table.

**Table K-26. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	30.27	31.18	30.83	-0.56	0.35
Did not receive	69.73	68.82	69.17	0.56	-0.35
State aid status in 2007–08					
Received	27.57	27.51	28.07	-0.50	-0.56
Did not receive	72.43	72.49	71.93	0.50	0.56
Any aid status in 2007–08					
Received	69.52	70.58	69.97	-0.45	0.61
Did not receive	30.48	29.42	30.03	0.45	-0.61
Social Security number available					
Available	94.74	95.42	95.38	-0.64	0.04
Not available	5.26	4.58	4.62	0.64	-0.04
Veteran status in 2007–08					
Yes	3.07	3.30	3.34	-0.27*	-0.04
No	96.93	96.70	96.66	0.27*	0.04
Race/ethnicity					
White, non-Hispanic	70.88	69.69	72.42	-1.54	-2.73*
Black or African American, non-Hispanic	8.54	8.88	8.10	0.44	0.78
Hispanic	9.16	9.19	8.80	0.36	0.39
Asian, non-Hispanic	7.39	6.84	6.78	0.61	0.06
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.75	1.79	2.11	-0.36*	-0.32*
Unknown race and ethnicity	1.66	2.89	1.14	0.52	1.75*
Sex					
Male	44.09	44.14	43.87	0.22	0.27
Female	55.91	55.60	56.13	-0.22	-0.53
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	28.33	29.08	29.85	-1.52*	-0.77
1–69 percent	8.23	8.59	8.51	-0.28	0.08
70–114 percent	8.94	9.29	8.94	#	0.35
115–143 percent	9.08	8.97	9.20	-0.12	-0.23
144 percent or more	9.92	9.61	8.91	1.01*	0.70
Not applicable, did not receive federal student loan(s)	35.51	34.47	34.59	0.92	-0.12

See notes at end of table.

**Table K-26. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	35.51	34.47	34.59	0.92	-0.12
\$1–\$15,070	17.46	17.66	18.46	-1.00*	-0.80
\$15,071–\$25,683	15.68	15.98	16.41	-0.73*	-0.43
\$25,684–\$56,748	17.32	17.78	16.86	0.46	0.92
\$56,749 or more	14.03	14.12	13.68	0.35	0.44
Baccalaureate major					
Liberal arts	12.43	11.88	15.14	-2.71*	-3.26*
Psychology/history	14.07	13.97	17.19	-3.12*	-3.22*
Biology	9.79	9.70	5.17	4.62*	4.53*
Physical sciences	1.79	1.91	1.50	0.29	0.41
Mathematics and statistics	1.05	0.80	1.01	0.04	-0.21*
Computer and information sciences	1.73	1.84	1.80	-0.07	0.04
Engineering	6.41	6.64	6.48	-0.07	0.16
Education	6.82	6.91	7.46	-0.64*	-0.55
Business	17.42	17.66	19.03	-1.61*	-1.37*
Health professions	5.85	5.81	7.10	-1.25*	-1.29*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	12.23	12.46	12.81	-0.58	-0.35
Missing/unknown	9.99	9.97	4.73	5.26*	5.24*
Age as of Dec. 31, 2007					
15–23	66.28	66.61	67.43	-1.15	-0.82
24–29	23.45	22.93	21.78	1.67*	1.15
30 or older	10.27	10.39	10.78	-0.51	-0.39
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	9.39	8.82	7.90	1.49*	0.92*
No, did not default on federal student loan(s)	55.10	56.71	57.51	-2.41*	-0.80
Not applicable, did not receive federal student loan(s)	35.51	34.47	34.59	0.92	-0.12

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-27. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	14.28	14.17	12.80	1.48	1.37
Mideast	25.24	25.69	23.28	1.96	2.41
Great Lakes	14.67	14.55	15.65	-0.98	-1.10
Plains	10.13	10.30	9.66	0.47	0.64
Southeast	19.43	19.27	20.50	-1.07	-1.23
Southwest	3.90	3.90	4.71	-0.81*	-0.81*
Rocky Mountains	‡	‡	‡	‡	‡
Far West	7.18	7.12	7.01	0.17	0.11
Outlying areas	2.15	2.24	2.74	-0.59*	-0.50
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–2,507	28.34	28.69	25.79	2.55*	2.90*
2,508–4,874	22.32	21.36	22.91	-0.59	-1.55
4,875–11,571	21.81	22.41	23.45	-1.64	-1.04
11,572 or more	27.53	27.54	27.85	-0.32	-0.31
Pell Grant status in 2007–08					
Received	24.70	23.50	21.71	2.99*	1.79
Did not receive	73.52	73.90	77.20	-3.68*	-3.30*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	73.52	73.90	77.20	-3.68*	-3.30*
\$1–\$2,155	8.87	8.34	8.67	0.20	-0.33
\$2,156–\$4,309	8.91	8.77	7.77	1.14	1.00*
\$4,310 or more	6.92	6.38	5.27	1.65*	1.11
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	58.15	56.96	51.14	7.01*	5.82*
Did not receive	41.85	43.04	48.86	-7.01*	-5.82*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	41.85	43.04	48.86	-7.01*	-5.82*
\$1–\$5,500	42.33	41.31	39.09	3.24*	2.22
\$5,501–\$5,531	‡	‡	‡	‡	‡
\$5,532 or more	15.81	15.65	12.04	3.77*	3.61*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	90.38	90.24	91.37	-0.99	-1.13
\$1–\$6,250	‡	‡	‡	‡	‡
\$6,251–\$11,000	2.48	2.51	2.36	0.12	0.15
\$11,001–\$16,091	2.64	2.88	2.12	0.52	0.76
\$16,092 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	66.31	64.32	60.57	5.74*	3.75*
Did not receive	33.69	35.68	39.43	-5.74*	-3.75*

See notes at end of table.

**Table K-27. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	61.88	59.89	61.82	0.06	-1.93
Did not receive	38.12	40.11	38.18	-0.06	1.93
State aid status in 2007–08					
Received	29.82	29.22	30.77	-0.95	-1.55
Did not receive	70.18	70.78	69.23	0.95	1.55
Any aid status in 2007–08					
Received	84.31	82.15	84.11	0.20	-1.96
Did not receive	15.69	17.85	15.89	-0.20	1.96
Social Security number available					
Available	98.31	97.37	98.40	-0.09	-1.03
Not available	1.69	2.63	1.60	0.09	1.03
Veteran status in 2007–08					
Yes	4.24	3.70	4.85	-0.61	-1.15*
No	95.76	96.30	95.15	0.61	1.15*
Race/ethnicity					
White, non-Hispanic	71.34	68.63	73.94	-2.60*	-5.31*
Black or African American, non-Hispanic	8.98	8.88	7.53	1.45	1.35
Hispanic	7.35	7.17	7.93	-0.58	-0.76
Asian, non-Hispanic	5.03	5.67	4.81	0.22	0.86
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	2.48	2.29	2.48	#	-0.19
Unknown race and ethnicity	3.69	6.38	2.10	1.59*	4.28*
Sex					
Male	40.71	40.35	40.12	0.59	0.23
Female	59.29	58.98	59.88	-0.59	-0.90
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	36.44	34.91	36.63	-0.19	-1.72
1–65 percent	11.21	10.87	9.67	1.54	1.20
66–114 percent	10.07	9.06	9.51	0.56	-0.45
115–146 percent	9.19	9.38	8.11	1.08	1.27
147 percent or more	10.05	10.65	8.67	1.38	1.98
Not applicable, did not receive federal student loan(s)	23.04	25.13	27.40	-4.36*	-2.27

See notes at end of table.



**Table K-27. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	23.04	25.13	27.40	-4.36*	-2.27
\$1–\$17,125	24.36	23.25	24.28	0.08	-1.03
\$17,126–\$28,199	18.33	17.58	17.10	1.23	0.48
\$28,200–\$61,502	19.98	19.89	18.51	1.47	1.38
\$61,503 or more	14.30	14.15	12.72	1.58*	1.43
Baccalaureate major					
Liberal arts	14.99	15.71	17.87	-2.88*	-2.16*
Psychology/history	12.92	13.11	15.36	-2.44*	-2.25*
Biology	7.98	8.23	4.89	3.09*	3.34*
Physical sciences	1.34	1.44	1.42	-0.08	0.02
Mathematics and statistics	‡	‡	‡	‡	‡
Computer and information sciences	2.47	2.20	2.31	0.16	-0.11
Engineering	3.71	3.27	3.23	0.48	0.04
Education	5.25	5.07	6.01	-0.76*	-0.94*
Business	20.95	20.87	23.61	-2.66*	-2.74*
Health professions	6.01	6.33	6.85	-0.84*	-0.52
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	10.20	9.42	10.42	-0.22	-1.00
Missing/unknown	12.35	12.43	5.69	6.66*	6.74*
Age as of Dec. 31, 2007					
15–23	70.66	69.80	72.02	-1.36	-2.22
24–29	12.67	13.85	11.59	1.08	2.26
30 or older	16.51	15.45	16.30	0.21	-0.85
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	9.34	10.89	7.88	1.46*	3.01*
No, did not default on federal student loan(s)	67.62	63.99	64.72	2.90*	-0.73
Not applicable, did not receive federal student loan(s)	23.04	25.13	27.40	-4.36*	-2.27

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-28. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	‡	‡	‡	‡	‡
Mideast	6.98	8.68	14.50	-7.52*	-5.82*
Great Lakes	15.25	13.15	10.17	5.08	2.98
Plains	‡	‡	‡	‡	‡
Southeast	13.42	16.90	13.54	-0.12	3.36
Southwest	40.48	32.03	21.29	19.19	10.74
Rocky Mountains	‡	‡	‡	‡	‡
Far West	11.43	14.02	20.94	-9.51*	-6.92*
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–1,972	14.27	16.90	21.41	-7.14	-4.51
1,973–3,355	19.86	17.61	18.50	1.36	-0.89
3,356–8,142	7.16	13.66	18.45	-11.29*	-4.79
8,143 or more	58.72	51.83	41.64	17.08	10.19
Pell Grant status in 2007–08					
Received	17.14	20.65	25.49	-8.35	-4.84
Did not receive	63.63	65.90	72.62	-8.99	-6.72
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	63.63	65.90	72.62	-8.99	-6.72
\$1–\$2,155	9.69	11.40	14.78	-5.09	-3.38
\$2,156–\$4,309	4.44	5.93	7.97	-3.53*	-2.04
\$4,310 or more	‡	‡	‡	‡	‡
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	63.21	64.54	66.16	-2.95	-1.62
Did not receive	36.79	35.46	33.84	2.95	1.62
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	36.79	35.46	33.84	2.95	1.62
\$1–\$3,938	13.96	14.38	18.70	-4.74	-4.32
\$3,939–\$5,500	13.32	16.90	17.36	-4.04	-0.46
\$5,501–\$10,500	22.68	24.52	29.06	-6.38	-4.54
\$10,501 or more	‡	‡	‡	‡	‡
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	94.84	95.85	96.94	-2.10	-1.09
\$1–\$5,000	‡	‡	‡	‡	‡
\$5,001–\$8,253	‡	‡	‡	‡	‡
\$8,254–\$11,737	‡	‡	‡	‡	‡
\$11,738 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	69.59	70.01	69.83	-0.24	0.18
Did not receive	30.41	29.99	30.17	0.24	-0.18

See notes at end of table.

**Table K-28. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	9.11	10.81	17.06	-7.95*	-6.25*
Did not receive	90.89	89.19	82.94	7.95*	6.25*
State aid status in 2007–08					
Received	7.62	12.92	12.50	-4.88	0.42
Did not receive	92.38	87.08	87.50	4.88	-0.42
Any aid status in 2007–08					
Received	81.79	82.65	86.32	-4.53	-3.67
Did not receive	18.21	17.35	13.68	4.53	3.67
Social Security number available					
Available	99.56	96.90	98.88	0.68	-1.98
Not available	‡	‡	‡	‡	‡
Veteran status in 2007–08					
Yes	18.11	18.80	14.29	3.82	4.51
No	81.89	81.20	85.71	-3.82	-4.51
Race/ethnicity					
White, non-Hispanic	36.10	41.41	52.21	-16.11*	-10.80*
Black or African American, non-Hispanic	26.30	21.88	16.95	9.35	4.93
Hispanic	16.79	17.68	16.99	-0.20	0.69
Asian, non-Hispanic	‡	‡	‡	‡	‡
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	‡	‡	‡	‡	‡
Unknown race and ethnicity	‡	‡	‡	‡	‡
Sex					
Male	41.58	43.50	40.34	1.24	3.16
Female	58.42	56.50	59.66	-1.24	-3.16
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	18.45	19.08	25.16	-6.71*	-6.08*
1–103 percent	30.75	26.46	17.10	13.65*	9.36
104–141 percent	8.72	9.96	15.40	-6.68*	-5.44
142–166 percent	6.68	8.79	14.48	-7.80*	-5.69
167 percent or more	16.51	17.56	15.26	1.25	2.30
Not applicable, did not receive federal student loan(s)	18.90	18.15	12.60	6.30	5.55

See notes at end of table.

**Table K-28. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTH000 (B&B:08/18 and B&B:08/12 response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	18.90	18.15	12.60	6.30	5.55
\$1–\$23,046	19.41	20.19	20.16	-0.75	0.03
\$23,047–\$35,955	23.38	23.09	21.78	1.60	1.31
\$35,956–\$50,287	12.96	16.21	23.31	-10.35*	-7.10*
\$50,288 or more	25.35	22.37	22.16	3.19	0.21
Baccalaureate major					
Liberal arts	4.24	6.75	11.02	-6.78*	-4.27*
Psychology/history	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡
Computer and information sciences	11.57	12.03	11.19	0.38	0.84
Engineering	‡	‡	‡	‡	‡
Business	44.67	41.87	38.84	5.83	3.03
Health professions	‡	‡	‡	‡	‡
Agricultural sciences	6.71	9.16	16.09	-9.38*	-6.93
Missing/unknown	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007					
15–23	10.98	12.68	16.55	-5.57	-3.87
24–29	31.45	30.17	27.55	3.90	2.62
30 or older	57.57	57.15	55.89	1.68	1.26
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	37.56	34.31	26.73	10.83*	7.58
No, did not default on federal student loan(s)	43.54	47.54	60.67	-17.13*	-13.13*
Not applicable, did not receive federal student loan(s)	18.90	18.15	12.60	6.30	5.55

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-29. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>2</sup>					
Public	62.78	62.55	62.86	-0.08	-0.31
Private nonprofit	32.75	32.91	32.55	0.20	0.36
Private for-profit	4.46	4.54	4.59	-0.13	-0.05
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	6.91	6.99	6.26	0.65	0.73
Mideast	17.52	17.66	17.08	0.44	0.58
Great Lakes	15.90	16.01	16.59	-0.69	-0.58
Plains	8.44	8.39	8.71	-0.27	-0.32
Southeast	24.46	24.22	24.51	-0.05	-0.29
Southwest	9.36	9.49	8.91	0.45	0.58
Rocky Mountains	3.89	3.88	4.43	-0.54*	-0.55
Far West	12.12	11.92	12.13	-0.01	-0.21
Outlying areas	1.41	1.43	1.38	0.03	0.05
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–4,760	20.96	21.11	21.31	-0.35	-0.20
4,761–13,042	21.08	21.09	21.94	-0.86	-0.85
13,043–27,210	26.98	26.78	26.54	0.44	0.24
27,211 or more	30.99	31.02	30.21	0.78	0.81
Pell Grant status in 2007–08					
Received	25.23	24.96	22.27	2.96*	2.69*
Did not receive	71.82	72.14	76.14	-4.32*	-4.00*
Unknown	2.95	2.90	1.59	1.36*	1.31*
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.82	72.14	76.14	-4.32*	-4.00*
\$1–\$2,155	9.58	9.57	9.23	0.35	0.34
\$2,156–\$4,309	9.18	8.94	8.14	1.04*	0.80*
\$4,310 or more	6.47	6.45	4.90	1.57*	1.55*
Unknown	2.95	2.90	1.59	1.36*	1.31*
Direct Loan status in 2007–08					
Received	48.82	48.39	44.69	4.13*	3.70*
Did not receive	51.18	51.61	55.31	-4.13*	-3.70*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	51.18	51.61	55.31	-4.13*	-3.70*
\$1–\$4,410	11.66	11.60	11.88	-0.22	-0.28
\$4,411–\$5,500	22.94	22.94	21.58	1.36*	1.36*
\$5,501–\$6,490	1.09	1.09	0.96	0.13	0.13
\$6,491 or more	13.13	12.76	10.27	2.86*	2.49*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	93.35	93.39	94.02	-0.67*	-0.63*
\$1–\$5,000	1.47	1.43	1.33	0.14	0.10
\$5,001–\$9,396	1.62	1.64	1.55	0.07	0.09
\$9,397–\$14,000	1.83	1.81	1.50	0.33*	0.31
\$14,001 or more	1.74	1.74	1.59	0.15	0.15

See notes at end of table.

**Table K-29. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2007–08					
Received	57.01	56.44	53.60	3.41*	2.84*
Did not receive	42.99	43.56	46.40	-3.41*	-2.84*
Institution aid status in 2007–08					
Received	39.68	39.97	40.29	-0.61	-0.32
Did not receive	60.32	60.03	59.71	0.61	0.32
State aid status in 2007–08					
Received	27.42	27.54	28.06	-0.64	-0.52
Did not receive	72.58	72.46	71.94	0.64	0.52
Any aid status in 2007–08					
Received	74.91	74.61	75.33	-0.42	-0.72
Did not receive	25.09	25.39	24.67	0.42	0.72
Social Security number available					
Available	96.13	96.10	96.63	-0.50	-0.53
Not available	3.87	3.90	3.37	0.50	0.53
Veteran status in 2007–08					
Yes	4.12	4.20	4.29	-0.17	-0.09
No	95.88	95.80	95.71	0.17	0.09
Race/ethnicity					
White, non-Hispanic	69.48	67.99	72.16	-2.68*	-4.17*
Black or African American, non-Hispanic	9.48	9.39	8.19	1.29*	1.20*
Hispanic	8.91	8.95	8.70	0.21	0.25
Asian, non-Hispanic	6.43	6.46	6.06	0.37	0.40
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.96	1.95	2.20	-0.24*	-0.25*
Unknown race and ethnicity	2.98	4.49	1.84	1.14*	2.65*
Sex					
Male	42.87	42.77	42.49	0.38	0.28
Female	57.13	56.84	57.51	-0.38	-0.67
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	30.44	30.99	31.58	-1.14*	-0.59
1–69 percent	10.40	10.58	9.35	1.05	1.23*
70–116 percent	9.48	9.65	9.46	0.02	0.19
117–146 percent	8.96	9.12	8.83	0.13	0.29
147 percent or more	10.03	10.21	8.94	1.09*	1.27*
Not applicable, did not borrow federal student loan(s)	30.68	29.44	31.84	-1.16	-2.40*

See notes at end of table.

**Table K-29. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	30.68	29.44	31.84	-1.16	-2.40*
\$1–\$16,735	19.22	19.57	20.09	-0.87	-0.52
\$16,736–\$27,586	17.54	17.85	17.39	0.15	0.46
\$27,587–\$57,914	17.92	18.24	16.69	1.23*	1.55*
\$57,915 or more	14.64	14.90	13.99	0.65	0.91
Baccalaureate major					
Liberal arts	12.90	12.93	15.84	-2.94*	-2.91*
Psychology/history	13.09	13.19	15.85	-2.76*	-2.66*
Biology	8.84	8.89	5.00	3.84*	3.89*
Physical sciences	1.67	1.70	1.40	0.27	0.30
Mathematics and statistics	0.91	0.93	1.04	-0.13*	-0.11
Computer and information sciences	2.41	2.45	2.39	0.02	0.06
Engineering	5.25	5.17	5.15	0.10	0.02
Education	6.00	6.08	6.65	-0.65*	-0.57*
Business	19.79	19.84	21.43	-1.64*	-1.59*
Health professions	6.28	6.12	6.85	-0.57	-0.73
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	11.32	11.14	12.19	-0.87*	-1.05*
Missing/unknown	11.04	11.04	5.48	5.56*	5.56*
Age as of Dec. 31, 2007					
15–23	65.35	65.35	67.29	-1.94*	-1.94*
24–29	20.28	20.23	18.60	1.68*	1.63*
30 or older	14.31	14.08	14.08	0.23	#
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	10.63	10.82	8.36	2.27*	2.46*
No, did not default on federal student loan(s)	58.69	59.73	59.81	-1.12	-0.08
Not applicable, did not receive federal student loan(s)	30.68	29.44	31.84	-1.16	-2.40*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-30. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	2.96	3.65	2.55	0.41	1.10
Mideast	13.71	13.95	14.17	-0.46	-0.22
Great Lakes	17.31	17.07	18.03	-0.72	-0.96
Plains	7.74	7.59	8.19	-0.45	-0.60
Southeast	28.17	27.53	27.54	0.63	-0.01
Southwest	10.18	10.78	10.08	0.10	0.70
Rocky Mountains	4.06	4.28	4.45	-0.39	-0.17
Far West	15.14	14.29	14.27	0.87	0.02
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–11,664	20.31	19.73	20.67	-0.36	-0.94
11,665–20,095	23.42	24.26	23.69	-0.27	0.57
20,096–31,916	25.64	25.10	25.44	0.20	-0.34
31,917 or more	30.62	30.91	30.21	0.41	0.70
Pell Grant status in 2007–08					
Received	25.84	25.99	22.41	3.43*	3.58*
Did not receive	71.61	71.59	75.72	-4.11*	-4.13*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.61	71.59	75.72	-4.11*	-4.13*
\$1–\$2,155	9.82	10.09	9.32	0.50	0.77
\$2,156–\$4,309	9.37	9.21	8.22	1.15*	0.99*
\$4,310 or more	6.65	6.69	4.87	1.78*	1.82*
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	43.14	42.94	39.77	3.37*	3.17*
Did not receive	56.86	57.06	60.23	-3.37*	-3.17*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	56.86	57.06	60.23	-3.37*	-3.17*
\$1–\$3,767	9.99	10.17	9.99	#	0.18
\$3,768–\$5,500	20.91	20.87	20.13	0.78	0.74
\$5,501–\$5,935	‡	‡	‡	‡	‡
\$5,936 or more	11.98	11.68	9.42	2.56*	2.26*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	94.55	94.90	95.15	-0.60	-0.25
\$1–\$4,488	‡	‡	‡	‡	‡
\$4,489–\$7,453	‡	‡	‡	‡	‡
\$7,454–\$12,000	‡	‡	‡	‡	‡
\$12,001 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	51.38	51.50	48.72	2.66*	2.78*
Did not receive	48.62	48.50	51.28	-2.66*	-2.78*

See notes at end of table.



**Table K-30. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	31.04	31.38	31.22	-0.18	0.16
Did not receive	68.96	68.62	68.78	0.18	-0.16
State aid status in 2007–08					
Received	28.13	27.60	28.32	-0.19	-0.72
Did not receive	71.87	72.40	71.68	0.19	0.72
Any aid status in 2007–08					
Received	69.96	70.17	70.33	-0.37	-0.16
Did not receive	30.04	29.83	29.67	0.37	0.16
Social Security number available					
Available	94.86	95.40	95.53	-0.67	-0.13
Not available	5.14	4.60	4.47	0.67	0.13
Veteran status in 2007–08					
Yes	3.13	3.37	3.33	-0.20	0.04
No	96.87	96.63	96.67	0.20	-0.04
Race/ethnicity					
White, non-Hispanic	71.39	69.46	72.88	-1.49*	-3.42*
Black or African American, non-Hispanic	8.49	8.97	7.97	0.52	1.00*
Hispanic	9.05	9.20	8.57	0.48	0.63
Asian, non-Hispanic	6.94	6.88	6.62	0.32	0.26
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.80	1.82	2.12	-0.32*	-0.30*
Unknown race and ethnicity	1.71	2.95	1.19	0.52	1.76*
Sex					
Male	43.99	43.79	43.87	0.12	-0.08
Female	56.01	55.94	56.13	-0.12	-0.19
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	28.62	29.62	29.59	-0.97	0.03
1–68 percent	8.49	8.86	8.44	0.05	0.42
69–114 percent	9.09	9.49	8.93	0.16	0.56
115–143 percent	9.09	9.16	9.04	0.05	0.12
144 percent or more	9.49	9.81	8.60	0.89*	1.21*
Not applicable, did not receive federal student loan(s)	35.22	33.06	35.40	-0.18	-2.34*

See notes at end of table.

**Table K-30. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	35.22	33.06	35.40	-0.18	-2.34*
\$1–\$15,070	17.81	18.04	18.66	-0.85*	-0.62
\$15,071–\$25,683	15.81	16.32	16.17	-0.36	0.15
\$25,684–\$56,748	16.71	18.16	15.66	1.05*	2.50*
\$56,749 or more	14.45	14.42	14.09	0.36	0.33
Baccalaureate major					
Liberal arts	12.09	11.85	14.99	-2.90*	-3.14*
Psychology/history	13.95	14.10	17.06	-3.11*	-2.96*
Biology	10.16	9.78	5.41	4.75*	4.37*
Physical sciences	2.03	1.96	1.54	0.49*	0.42
Mathematics and statistics	‡	‡	‡	‡	‡
Computer and information sciences	1.96	1.87	1.85	0.11	0.02
Engineering	6.33	6.51	6.38	-0.05	0.13
Education	7.03	7.02	7.60	-0.57*	-0.58
Business	17.39	17.80	19.08	-1.69*	-1.28*
Health professions	5.53	5.77	6.91	-1.38*	-1.14*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	12.04	12.13	12.70	-0.66	-0.57
Missing/unknown	10.16	9.93	4.88	5.28*	5.05*
Age as of Dec. 31, 2007					
15–23	66.53	66.53	68.08	-1.55*	-1.55
24–29	23.36	22.95	21.58	1.78*	1.37
30 or older	10.11	10.45	10.34	-0.23	0.11
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	8.91	9.01	7.41	1.50*	1.60*
No, did not default on federal student loan(s)	55.87	57.94	57.18	-1.31	0.76
Not applicable, did not receive federal student loan(s)	35.22	33.06	35.40	-0.18	-2.34*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-31. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	15.42	14.30	14.31	1.11	-0.01
Mideast	26.21	25.94	23.18	3.03*	2.76
Great Lakes	13.51	14.38	14.91	-1.40*	-0.53
Plains	10.42	10.29	9.82	0.60	0.47
Southeast	18.78	18.95	20.17	-1.39	-1.22
Southwest	3.85	3.93	4.73	-0.88*	-0.80*
Rocky Mountains	‡	‡	‡	‡	‡
Far West	6.22	7.14	6.49	-0.27	0.65
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–2,507	27.48	28.97	25.55	1.93*	3.42*
2,508–4,874	22.98	21.25	23.75	-0.77	-2.50*
4,875–11,571	19.93	21.95	21.93	-2.00*	0.02
11,572 or more	29.61	27.84	28.77	0.84	-0.93
Pell Grant status in 2007–08					
Received	24.75	23.59	21.43	3.32*	2.16*
Did not receive	73.70	74.06	77.53	-3.83*	-3.47*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	73.70	74.06	77.53	-3.83*	-3.47*
\$1–\$2,155	8.72	8.34	8.11	0.61	0.23
\$2,156–\$4,309	9.42	8.84	8.13	1.29*	0.71
\$4,310 or more	6.60	6.42	5.19	1.41*	1.23*
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	57.72	56.51	51.14	6.58*	5.37*
Did not receive	42.28	43.49	48.86	-6.58*	-5.37*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	42.28	43.49	48.86	-6.58*	-5.37*
\$1–\$5,500	42.50	41.65	39.34	3.16*	2.31
\$5,501 or more	15.23	14.87	11.81	3.42*	3.06*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	90.27	90.16	91.34	-1.07	-1.18
\$1–\$6,250	‡	‡	‡	‡	‡
\$6,251–\$11,000	‡	‡	‡	‡	‡
\$11,001–\$16,091	‡	‡	‡	‡	‡
\$16,092 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	65.95	63.96	60.49	5.46*	3.47*
Did not receive	34.05	36.04	39.51	-5.46*	-3.47*

See notes at end of table.

**Table K-31. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	60.29	60.32	61.11	-0.82	-0.79
Did not receive	39.71	39.68	38.89	0.82	0.79
State aid status in 2007–08					
Received	28.30	29.44	29.45	-1.15	-0.01
Did not receive	71.70	70.56	70.55	1.15	0.01
Any aid status in 2007–08					
Received	83.35	81.95	83.40	-0.05	-1.45
Did not receive	16.65	18.05	16.60	0.05	1.45
Social Security number available					
Available	98.08	97.34	98.38	-0.30	-1.04
Not available	1.92	2.66	1.62	0.30	1.04
Veteran status in 2007–08					
Yes	4.16	3.75	4.63	-0.47	-0.88*
No	95.84	96.25	95.37	0.47	0.88*
Race/ethnicity					
White, non-Hispanic	69.44	68.85	73.59	-4.15*	-4.74*
Black or African American, non-Hispanic	9.32	8.47	7.36	1.96	1.11
Hispanic	7.30	7.25	7.81	-0.51	-0.56
Asian, non-Hispanic	5.91	5.70	5.26	0.65	0.44
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	2.36	2.29	2.36	#	-0.07
Unknown race and ethnicity	4.60	6.46	2.49	2.11*	3.97*
Sex					
Male	40.47	40.73	40.17	0.30	0.56
Female	59.53	58.60	59.83	-0.30	-1.23
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	35.80	35.25	36.69	-0.89	-1.44
1–64 percent	11.01	10.98	9.76	1.25	1.22
65–113 percent	9.39	9.09	9.23	0.16	-0.14
114–146 percent	9.45	9.75	8.17	1.28	1.58*
147 percent or more	10.32	10.79	8.44	1.88*	2.35*
Not applicable, did not receive federal student loan(s)	24.02	24.15	27.70	-3.68*	-3.55*

See notes at end of table.

**Table K-31. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	24.02	24.15	27.70	-3.68*	-3.55*
\$1–\$17,125	23.92	23.56	24.64	-0.72	-1.08
\$17,126–\$28,199	17.97	17.81	16.89	1.08	0.92
\$28,200–\$61,502	20.75	20.15	17.87	2.88*	2.28*
\$61,503 or more	13.34	14.34	12.90	0.44	1.44
Baccalaureate major					
Liberal arts	15.53	15.85	18.07	-2.54*	-2.22*
Psychology/history	13.14	13.23	15.61	-2.47*	-2.38*
Biology	7.31	8.28	4.61	2.70*	3.67*
Physical sciences	‡	‡	‡	‡	‡
Mathematics and statistics	‡	‡	‡	‡	‡
Computer and information sciences	2.25	2.22	2.31	-0.06	-0.09
Engineering	3.88	3.31	3.44	0.44	-0.13
Education	4.84	5.12	5.74	-0.90*	-0.62
Business	20.41	20.68	23.11	-2.70*	-2.43*
Health professions	6.74	5.88	7.09	-0.35	-1.21*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	10.37	9.54	10.26	0.11	-0.72
Missing/unknown	12.56	12.50	6.07	6.49*	6.43*
Age as of Dec. 31, 2007					
15–23	70.96	70.37	72.88	-1.92	-2.51
24–29	13.27	13.69	11.67	1.60	2.02
30 or older	15.59	15.02	15.37	0.22	-0.35
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	9.85	11.03	7.80	2.05*	3.23*
No, did not default on federal student loan(s)	66.13	64.82	64.50	1.63	0.32
Not applicable, did not receive federal student loan(s)	24.02	24.15	27.70	-3.68*	-3.55*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-32. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTI000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	‡	‡	‡	‡	‡
Mideast	7.31	8.66	13.69	-6.38*	-5.03*
Great Lakes	‡	‡	‡	‡	‡
Plains	‡	‡	‡	‡	‡
Southeast	14.02	16.90	13.75	0.27	3.15
Southwest	38.30	32.07	22.50	15.80	9.57
Rocky Mountains	‡	‡	‡	‡	‡
Far West	12.80	14.03	22.88	-10.08*	-8.85*
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–1,972	15.19	16.84	21.29	-6.10	-4.45
1,973–3,355	16.76	17.59	17.87	-1.11	-0.28
3,356–8,142	10.31	13.67	20.79	-10.48*	-7.12*
8,143 or more	57.73	51.90	40.05	17.68*	11.85*
Pell Grant status in 2007–08					
Received	20.18	20.57	26.29	-6.11	-5.72
Did not receive	60.99	65.96	71.98	-10.99*	-6.02
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	60.99	65.96	71.98	-10.99*	-6.02
\$1–\$2,155	12.39	11.32	16.04	-3.65	-4.72
\$2,156–\$4,309	4.77	5.94	6.98	-2.21*	-1.04
\$4,310 or more	‡	‡	‡	‡	‡
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	63.35	64.52	66.16	-2.81	-1.64
Did not receive	36.65	35.48	33.84	2.81	1.64
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	36.65	35.48	33.84	2.81	1.64
\$1–\$3,938	13.00	14.39	20.23	-7.23*	-5.84
\$3,939–\$5,500	15.59	16.92	17.42	-1.83	-0.50
\$5,501–\$10,500	22.54	24.45	27.64	-5.10	-3.19
\$10,501 or more	‡	‡	‡	‡	‡
Parent PLUS Loan amount received in 2007–08 <sup>5</sup>					
None	99.03	95.87	97.59	1.44*	-1.72
\$1–\$5,000	‡	‡	‡	‡	‡
\$5,001–\$8,292	‡	‡	‡	‡	‡
\$8,293–\$11,737	‡	‡	‡	‡	‡
\$11,738 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	70.54	69.97	71.54	-1.00	-1.57
Did not receive	29.46	30.03	28.46	1.00	1.57

See notes at end of table.

**Table K-32. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WT1000 (B&B:08/18 and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	‡	‡	‡	‡	‡
\$1–\$23,046	14.63	20.21	19.74	-5.11*	0.47
\$23,047–\$35,955	25.49	23.12	22.16	3.33	0.96
\$35,956–\$50,287	19.07	16.23	24.80	-5.73*	-8.57*
\$50,288 or more	25.16	22.40	20.95	4.21	1.45
Baccalaureate major					
Liberal arts	5.08	6.73	11.63	-6.55*	-4.90*
Psychology/history	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡
Computer and information sciences	10.01	12.02	10.40	-0.39	1.62
Engineering	‡	‡	‡	‡	‡
Business	48.97	41.92	41.59	7.38	0.33
Health professions	‡	‡	‡	‡	‡
Agricultural sciences	8.11	9.09	18.74	-10.63*	-9.65*
Missing/unknown	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007					
15–23	7.58	12.65	16.91	-9.33*	-4.26
24–29	28.36	30.13	27.00	1.36	3.13
30 or older	64.06	57.22	56.09	7.97	1.13
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	40.61	34.35	25.21	15.40*	9.14
No, did not default on federal student loan(s)	43.74	47.60	62.46	-18.72*	-14.86*
Not applicable, did not receive federal student loan(s)	‡	‡	‡	‡	‡

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-33. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>2</sup>					
Public	62.78	62.55	62.86	-0.08	-0.31
Private nonprofit	32.75	32.91	32.55	0.20	0.36
Private for-profit	4.46	4.54	4.59	-0.13	-0.05
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	6.91	6.99	6.10	0.81	0.89
Mideast	17.52	17.66	17.12	0.40	0.54
Great Lakes	15.90	16.01	16.62	-0.72	-0.61
Plains	8.44	8.39	8.95	-0.51	-0.56
Southeast	24.46	24.22	24.28	0.18	-0.06
Southwest	9.36	9.49	8.97	0.39	0.52
Rocky Mountains	3.89	3.88	4.50	-0.61*	-0.62
Far West	12.12	11.92	12.03	0.09	-0.11
Outlying areas	1.41	1.43	1.43	-0.02	#
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–4,760	20.96	21.11	21.08	-0.12	0.03
4,761–13,042	21.08	21.09	22.10	-1.02	-1.01
13,043–27,210	26.98	26.78	26.60	0.38	0.18
27,211 or more	30.99	31.02	30.22	0.77	0.80
Pell Grant status in 2007–08					
Received	25.23	24.96	22.23	3.00*	2.73*
Did not receive	71.82	72.14	76.10	-4.28*	-3.96*
Unknown	2.95	2.90	1.66	1.29*	1.24*
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.82	72.14	76.10	-4.28*	-3.96*
\$1–\$2,155	9.58	9.57	9.24	0.34	0.33
\$2,156–\$4,309	9.18	8.94	8.17	1.01*	0.77*
\$4,310 or more	6.47	6.45	4.83	1.64*	1.62*
Unknown	2.95	2.90	1.66	1.29*	1.24*
Direct Loan status in 2007–08					
Received	48.82	48.39	44.69	4.13*	3.70*
Did not receive	51.18	51.61	55.31	-4.13*	-3.70*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	51.18	51.61	55.31	-4.13*	-3.70*
\$1–\$4,400	11.66	11.60	11.88	-0.22	-0.28
\$4,401–\$5,500	22.94	22.94	21.50	1.44*	1.44*
\$5,501–\$6,394	1.09	1.09	0.97	0.12	0.12
\$6,395 or more	13.13	12.76	10.34	2.79*	2.42*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	93.35	93.39	94.07	-0.72*	-0.68*
\$1–\$5,000	1.47	1.43	1.30	0.17	0.13
\$5,001–\$9,396	1.62	1.64	1.57	0.05	0.07
\$9,397–\$14,000	1.83	1.81	1.46	0.37*	0.35*
\$14,001 or more	1.74	1.74	1.60	0.14	0.14

See notes at end of table.



**Table K-33. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2007–08					
Received	57.01	56.44	53.54	3.47*	2.90*
Did not receive	42.99	43.56	46.46	-3.47*	-2.90*
Institution aid status in 2007–08					
Received	39.68	39.97	39.91	-0.23	0.06
Did not receive	60.32	60.03	60.09	0.23	-0.06
State aid status in 2007–08					
Received	27.42	27.54	27.87	-0.45	-0.33
Did not receive	72.58	72.46	72.13	0.45	0.33
Any aid status in 2007–08					
Received	74.91	74.61	75.23	-0.32	-0.62
Did not receive	25.09	25.39	24.77	0.32	0.62
Social Security number available					
Available	96.13	96.10	96.63	-0.50	-0.53
Not available	3.87	3.90	3.37	0.50	0.53
Veteran status in 2007–08					
Yes	4.12	4.20	4.24	-0.12	-0.04
No	95.88	95.80	95.76	0.12	0.04
Race/ethnicity					
White, non-Hispanic	69.48	67.99	72.17	-2.69*	-4.18*
Black or African American, non-Hispanic	9.48	9.39	8.37	1.11*	1.02
Hispanic	8.91	8.95	8.75	0.16	0.20
Asian, non-Hispanic	6.43	6.46	5.98	0.45	0.48
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.96	1.95	2.16	-0.20	-0.21
Unknown race and ethnicity	2.98	4.49	1.77	1.21*	2.72*
Sex					
Male	42.87	42.77	42.49	0.38	0.28
Female	57.13	56.84	57.51	-0.38	-0.67
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	30.44	30.99	31.50	-1.06	-0.51
1–69 percent	10.40	10.58	9.45	0.95	1.13*
70–116 percent	9.48	9.65	9.48	#	0.17
117–146 percent	8.96	9.12	8.77	0.19	0.35
147 percent or more	10.03	10.21	9.10	0.93	1.11*
Not applicable, did not borrow federal student loan(s)	30.68	29.44	31.68	-1.00	-2.24*

See notes at end of table.

**Table K-33. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	30.68	29.44	31.68	-1.00	-2.24*
\$1–\$16,735	19.22	19.57	19.79	-0.57	-0.22
\$16,736–\$27,586	17.54	17.85	17.36	0.18	0.49
\$27,587–\$57,914	17.92	18.24	17.44	0.48	0.80
\$57,915 or more	14.64	14.90	13.73	0.91*	1.17*
Baccalaureate major					
Liberal arts	12.90	12.93	15.84	-2.94*	-2.91*
Psychology/history	13.09	13.19	15.85	-2.76*	-2.66*
Biology	8.84	8.89	5.00	3.84*	3.89*
Physical sciences	1.67	1.70	1.40	0.27*	0.30
Mathematics and statistics	0.91	0.93	1.04	-0.13*	-0.11
Computer and information sciences	2.41	2.45	2.39	0.02	0.06
Engineering	5.25	5.17	5.15	0.10	0.02
Education	6.00	6.08	6.65	-0.65*	-0.57*
Business	19.79	19.84	21.43	-1.64*	-1.59*
Health professions	6.28	6.12	6.85	-0.57	-0.73
Social sciences	0.49	0.50	0.72	-0.23*	-0.22
Agricultural sciences	11.32	11.14	12.19	-0.87*	-1.05*
Missing/unknown	11.04	11.04	5.48	5.56*	5.56*
Age as of Dec. 31, 2007					
15–23	65.34	65.35	67.25	-1.91*	-1.90*
24–29	20.28	20.23	18.41	1.87*	1.82*
30 or older	14.31	14.08	14.31	#	-0.23
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	10.63	10.82	8.73	1.90*	2.09*
No, did not default on federal student loan(s)	58.69	59.73	59.59	-0.90	0.14
Not applicable, did not receive federal student loan(s)	30.68	29.44	31.68	-1.00	-2.24*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-34. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	3.01	3.65	2.52	0.49	1.13
Mideast	14.60	13.95	14.60	#	-0.65
Great Lakes	16.97	17.07	17.92	-0.95	-0.85
Plains	7.78	7.59	8.44	-0.66*	-0.85*
Southeast	27.62	27.53	26.84	0.78	0.69
Southwest	10.34	10.78	10.22	0.12	0.56
Rocky Mountains	4.09	4.28	4.51	-0.42	-0.23
Far West	14.79	14.29	14.16	0.63	0.13
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–11,664	20.86	19.73	20.71	0.15	-0.98
11,665–20,095	23.40	24.26	23.70	-0.30	0.56
20,096–31,916	25.70	25.10	25.64	0.06	-0.54
31,917 or more	30.04	30.91	29.96	0.08	0.95
Pell Grant status in 2007–08					
Received	26.27	25.99	22.44	3.83*	3.55*
Did not receive	70.85	71.59	75.61	-4.76*	-4.02*
Unknown	2.88	2.43	1.95	0.93	0.48
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	70.85	71.59	75.61	-4.76*	-4.02*
\$1–\$2,155	10.01	10.09	9.34	0.67	0.75
\$2,156–\$4,309	9.57	9.21	8.30	1.27*	0.91*
\$4,310 or more	6.69	6.69	4.80	1.89*	1.89*
Unknown	2.88	2.43	1.95	0.93	0.48
Direct Loan status in 2007–08					
Received	43.64	42.94	39.77	3.87*	3.17*
Did not receive	56.36	57.06	60.23	-3.87*	-3.17*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	56.36	57.06	60.23	-3.87*	-3.17*
\$1–\$3,756	10.24	10.17	10.01	0.23	0.16
\$3,757–\$5,500	20.96	20.87	20.13	0.83	0.74
\$5,501–\$5,843	‡	‡	‡	‡	‡
\$5,844 or more	12.16	11.68	9.36	2.80*	2.32*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	94.56	94.90	95.23	-0.67*	-0.33
\$1–\$4,500	‡	‡	‡	‡	‡
\$4,501–\$7,438	1.34	1.42	1.21	0.13	0.21
\$7,439–\$12,000	‡	‡	‡	‡	‡
\$12,001 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	51.70	51.50	48.51	3.19*	2.99*
Did not receive	48.30	48.50	51.49	-3.19*	-2.99*

See notes at end of table.

**Table K-34. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	30.71	31.38	30.74	-0.03	0.64
Did not receive	69.29	68.62	69.26	0.03	-0.64
State aid status in 2007–08					
Received	27.96	27.60	28.02	-0.06	-0.42
Did not receive	72.04	72.40	71.98	0.06	0.42
Any aid status in 2007–08					
Received	70.06	70.17	70.07	-0.01	0.10
Did not receive	29.94	29.83	29.93	0.01	-0.10
Social Security number available					
Available	94.69	95.40	95.48	-0.79	-0.08
Not available	5.31	4.60	4.52	0.79	0.08
Veteran status in 2007–08					
Yes	3.00	3.37	3.17	-0.17	0.20
No	97.00	96.63	96.83	0.17	-0.20
Race/ethnicity					
White, non-Hispanic	70.79	69.46	72.83	-2.04*	-3.37*
Black or African American, non-Hispanic	8.85	8.97	8.07	0.78*	0.90
Hispanic	9.17	9.20	8.61	0.56	0.59
Asian, non-Hispanic	7.11	6.88	6.63	0.48	0.25
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.72	1.82	2.08	-0.36*	-0.26
Unknown race and ethnicity	1.78	2.95	1.16	0.62	1.79*
Sex					
Male	43.44	43.79	43.66	-0.22	0.13
Female	56.56	55.94	56.34	0.22	-0.40
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	28.17	29.62	29.52	-1.35*	0.10
1–68 percent	8.64	8.86	8.78	-0.14	0.08
69–114 percent	9.00	9.49	9.00	#	0.49
115–143 percent	9.24	9.16	9.05	0.19	0.11
144 percent or more	10.26	9.81	8.65	1.61*	1.16*
Not applicable, did not receive federal student loan(s)	34.68	33.06	35.00	-0.32	-1.94*

See notes at end of table.

**Table K-34. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	34.68	33.06	35.00	-0.32	-1.94*
\$1–\$15,070	17.85	18.04	18.52	-0.67	-0.48
\$15,071–\$25,683	15.67	16.32	16.23	-0.56	0.09
\$25,684–\$56,748	17.46	18.16	16.53	0.93	1.63*
\$56,749 or more	14.34	14.42	13.71	0.63	0.71
Baccalaureate major					
Liberal arts	12.29	11.85	15.31	-3.02*	-3.46*
Psychology/history	14.06	14.10	17.19	-3.13*	-3.09*
Biology	10.09	9.78	5.36	4.73*	4.42*
Physical sciences	1.96	1.96	1.51	0.45*	0.45
Mathematics and statistics	0.93	0.82	1.04	-0.11*	-0.22*
Computer and information sciences	1.83	1.87	1.78	0.05	0.09
Engineering	6.15	6.51	6.26	-0.11	0.25
Education	6.97	7.02	7.56	-0.59*	-0.54
Business	17.33	17.80	19.04	-1.71*	-1.24
Health professions	5.75	5.77	6.84	-1.09*	-1.07*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	12.04	12.13	12.72	-0.68	-0.59
Missing/unknown	10.20	9.93	4.84	5.36*	5.09*
Age as of Dec. 31, 2007					
15–23	66.04	66.53	68.25	-2.21*	-1.72
24–29	23.78	22.95	21.40	2.38*	1.55
30 or older	10.18	10.45	10.35	-0.17	0.10
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	9.59	9.01	7.54	2.05*	1.47*
No, did not default on federal student loan(s)	55.73	57.94	57.45	-1.72*	0.49
Not applicable, did not receive federal student loan(s)	34.68	33.06	35.00	-0.32	-1.94*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-35. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	15.33	14.30	13.87	1.46	0.43
Mideast	24.49	25.94	22.47	2.02	3.47*
Great Lakes	13.96	14.38	15.09	-1.13*	-0.71
Plains	10.21	10.29	9.93	0.28	0.36
Southeast	19.70	18.95	20.58	-0.88	-1.63
Southwest	3.97	3.93	4.90	-0.93*	-0.97*
Rocky Mountains	‡	‡	‡	‡	‡
Far West	6.89	7.14	6.62	0.27	0.52
Outlying areas	2.23	2.27	2.71	-0.48*	-0.44
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–2,507	27.84	28.97	25.35	2.49*	3.62*
2,508–4,874	22.62	21.25	23.40	-0.78	-2.15
4,875–11,571	20.43	21.95	22.04	-1.61*	-0.09
11,572 or more	29.11	27.84	29.21	-0.10	-1.37
Pell Grant status in 2007–08					
Received	24.01	23.59	21.48	2.53*	2.11
Did not receive	74.72	74.06	77.45	-2.73*	-3.39*
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	74.72	74.06	77.45	-2.73*	-3.39*
\$1–\$2,155	8.57	8.34	8.34	0.23	#
\$2,156–\$4,309	8.98	8.84	8.09	0.89	0.75
\$4,310 or more	6.46	6.42	5.05	1.41*	1.37*
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	57.24	56.51	51.14	6.10*	5.37*
Did not receive	42.76	43.49	48.86	-6.10*	-5.37*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	42.76	43.49	48.86	-6.10*	-5.37*
\$1–\$5,500	42.38	41.65	39.23	3.15*	2.42
\$5,501 or more	14.86	14.87	11.91	2.95*	2.96*
Parent PLUS Loan amount received in 2007–08 <sup>5</sup>					
None	90.26	90.16	91.35	-1.09	-1.19
\$1–\$6,250	1.89	1.48	1.69	0.20	-0.21
\$6,251–\$11,000	2.28	2.54	2.20	0.08	0.34
\$11,001–\$16,091	2.59	2.90	1.91	0.68	0.99*
\$16,092 or more	2.98	2.91	2.84	0.14	0.07
Federal aid status in 2007–08					
Received	65.79	63.96	60.72	5.07*	3.24*
Did not receive	34.21	36.04	39.28	-5.07*	-3.24*
Institution aid status in 2007–08					
Received	60.99	60.32	61.01	-0.02	-0.69
Did not receive	39.01	39.68	38.99	0.02	0.69

See notes at end of table.

**Table K-35. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
State aid status in 2007–08					
Received	29.00	29.44	29.84	-0.84	-0.40
Did not receive	71.00	70.56	70.16	0.84	0.40
Any aid status in 2007–08					
Received	83.53	81.95	83.60	-0.07	-1.65
Did not receive	16.47	18.05	16.40	0.07	1.65
Social Security number available					
Available	98.46	97.34	98.49	-0.03	-1.15
Not available	1.54	2.66	1.51	0.03	1.15
Veteran status in 2007–08					
Yes	4.45	3.75	4.85	-0.40	-1.10*
No	95.55	96.25	95.15	0.40	1.10*
Race/ethnicity					
White, non-Hispanic	70.79	68.85	73.67	-2.88*	-4.82*
Black or African American, non-Hispanic	8.86	8.47	7.66	1.20	0.81
Hispanic	7.16	7.25	7.80	-0.64	-0.55
Asian, non-Hispanic	5.56	5.70	4.98	0.58	0.72
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	2.53	2.29	2.37	0.16	-0.08
Unknown race and ethnicity	3.92	6.46	2.34	1.58*	4.12*
Sex					
Male	41.85	40.73	40.57	1.28	0.16
Female	58.15	58.60	59.43	-1.28	-0.83
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	36.11	35.25	36.46	-0.35	-1.21
1–64 percent	11.50	10.98	9.65	1.85	1.33
65–113 percent	9.86	9.09	9.31	0.55	-0.22
114–146 percent	8.93	9.75	8.04	0.89	1.71*
147 percent or more	9.13	10.79	8.64	0.49	2.15*
Not applicable, did not receive federal student loan(s)	24.48	24.15	27.90	-3.42*	-3.75*
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	24.48	24.15	27.90	-3.42*	-3.75*
\$1–\$17,125	23.88	23.56	23.90	-0.02	-0.34
\$17,126–\$28,199	18.10	17.81	16.94	1.16	0.87
\$28,200–\$61,502	19.80	20.15	18.35	1.45	1.80
\$61,503 or more	13.74	14.34	12.92	0.82	1.42

See notes at end of table.

**Table K-35. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Baccalaureate major					
Liberal arts	15.24	15.85	17.57	-2.33*	-1.72
Psychology/history	12.93	13.23	15.34	-2.41*	-2.11*
Biology	7.34	8.28	4.61	2.73*	3.67*
Physical sciences	1.35	1.46	1.39	-0.04	0.07
Mathematics and statistics	1.00	1.27	1.19	-0.19*	0.08
Computer and information sciences	2.57	2.22	2.47	0.10	-0.25
Engineering	4.19	3.31	3.60	0.59	-0.29
Education	4.96	5.12	5.81	-0.85*	-0.69
Business	20.55	20.68	23.22	-2.67*	-2.54*
Health professions	6.57	5.88	7.25	-0.68*	-1.37*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	10.42	9.54	10.41	0.01	-0.87
Missing/unknown	12.14	12.50	5.98	6.16*	6.52*
Age as of Dec. 31, 2007					
15–23	71.92	70.37	72.62	-0.70	-2.25
24–29	11.70	13.69	11.45	0.25	2.24
30 or older	16.17	15.02	15.82	0.35	-0.80
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	8.88	11.03	8.07	0.81	2.96*
No, did not default on federal student loan(s)	66.64	64.82	64.03	2.61*	0.79
Not applicable, did not receive federal student loan(s)	24.48	24.15	27.90	-3.42*	-3.75*

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.

<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Categories were defined by quartiles computed at the institution level.

<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).



**Table K-36. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	‡	‡	‡	‡	‡
Mideast	7.53	8.66	13.79	-6.26*	-5.13*
Great Lakes	14.98	13.17	9.82	5.16	3.35
Plains	‡	‡	‡	‡	‡
Southeast	15.01	16.90	15.35	-0.34	1.55
Southwest	35.15	32.07	20.77	14.38	11.30
Rocky Mountains	‡	‡	‡	‡	‡
Far West	12.91	14.03	21.32	-8.41*	-7.29*
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–1,972	17.53	16.84	22.16	-4.63	-5.32
1,973–3,355	16.27	17.59	17.19	-0.92	0.40
3,356–8,142	8.47	13.67	20.06	-11.59*	-6.39
8,143 or more	57.73	51.90	40.58	17.15*	11.32
Pell Grant status in 2007–08					
Received	19.53	20.57	24.76	-5.23	-4.19
Did not receive	64.22	65.96	73.27	-9.05	-7.31
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	64.22	65.96	73.27	-9.05	-7.31
\$1–\$2,155	10.90	11.32	14.10	-3.20	-2.78
\$2,156–\$4,309	5.18	5.94	7.06	-1.88	-1.12
\$4,310 or more	3.44	3.32	3.60	-0.16	-0.28
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	59.85	64.52	66.16	-6.31	-1.64
Did not receive	40.15	35.48	33.84	6.31	1.64
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	40.15	35.48	33.84	6.31	1.64
\$1–\$3,938	10.65	14.39	19.39	-8.74*	-5.00
\$3,939–\$5,500	14.77	16.92	16.89	-2.12	0.03
\$5,501–\$10,500	24.21	24.45	28.92	-4.71	-4.47
\$10,501 or more	‡	‡	‡	‡	‡
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	98.94	95.87	97.55	1.39*	-1.68
\$1–\$5,000	‡	‡	‡	‡	‡
\$5,001–\$8,292	‡	‡	‡	‡	‡
\$8,293–\$11,737	‡	‡	‡	‡	‡
\$11,738 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	67.25	69.97	71.30	-4.05	-1.33
Did not receive	32.75	30.03	28.70	4.05	1.33

See notes at end of table.

**Table K-36. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	9.34	10.80	15.92	-6.58*	-5.12*
Did not receive	90.66	89.20	84.08	6.58*	5.12*
State aid status in 2007–08					
Received	8.15	12.94	11.86	-3.71	1.08
Did not receive	91.85	87.06	88.14	3.71	-1.08
Any aid status in 2007–08					
Received	79.88	82.63	86.67	-6.79	-4.04
Did not receive	20.12	17.37	13.33	6.79	4.04
Social Security number available					
Available	99.24	96.92	99.13	0.11	-2.21
Not available	†	†	†	†	†
Veteran status in 2007–08					
Yes	17.52	18.82	14.44	3.08	4.38
No	82.48	81.18	85.56	-3.08	-4.38
Race/ethnicity					
White, non-Hispanic	41.37	41.38	52.33	-10.96*	-10.95*
Black or African American, non-Hispanic	22.79	21.88	17.60	5.19	4.28
Hispanic	18.12	17.68	17.39	0.73	0.29
Asian, non-Hispanic	†	†	†	†	†
American Indian or Alaska Native, non-Hispanic	†	†	†	†	†
Native Hawaiian or other Pacific Islander, non-Hispanic	†	†	†	†	†
Other, non-Hispanic	†	†	†	†	†
More than one race, non-Hispanic	†	†	†	†	†
Unknown race and ethnicity	†	†	†	†	†
Sex					
Male	42.35	43.48	39.99	2.36	3.49
Female	57.65	56.52	60.01	-2.36	-3.49
Unknown	†	†	†	†	†
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	20.76	19.05	23.59	-2.83	-4.54
1–103 percent	24.37	26.55	16.44	7.93	10.11
104–141 percent	10.01	9.92	14.88	-4.87	-4.96
142–166 percent	7.60	8.85	15.84	-8.24*	-6.99*
167 percent or more	17.33	17.58	16.24	1.09	1.34
Not applicable, did not receive federal student loan(s)	19.94	18.04	13.01	6.93	5.03

See notes at end of table.

**Table K-36. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	19.94	18.04	13.01	6.93	5.03
\$1–\$23,046	16.49	20.21	18.27	-1.78	1.94
\$23,047–\$35,955	23.65	23.12	22.96	0.69	0.16
\$35,956–\$50,287	15.41	16.23	24.79	-9.38*	-8.56*
\$50,288 or more	24.51	22.40	20.97	3.54	1.43
Baccalaureate major					
Liberal arts	4.39	6.73	10.92	-6.53*	-4.19*
Psychology/history	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡
Computer and information sciences	9.46	12.02	10.33	-0.87	1.69
Engineering	‡	‡	‡	‡	‡
Business	48.77	41.92	41.42	7.35	0.50
Health professions	‡	‡	‡	‡	‡
Agricultural sciences	7.86	9.09	17.43	-9.57*	-8.34*
Missing/unknown	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007					
15–23	7.22	12.65	15.41	-8.19*	-2.76
24–29	33.94	30.13	26.82	7.12	3.31
30 or older	58.84	57.22	57.77	1.07	-0.55
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	38.20	34.35	29.74	8.46	4.61
No, did not default on federal student loan(s)	41.86	47.60	57.25	-15.39*	-9.65
Not applicable, did not receive federal student loan(s)	19.94	18.04	13.01	6.93	5.03

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.

<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Categories were defined by quartiles computed at the institution level.

<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-37. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>2</sup>					
Public	62.78	62.55	62.86	-0.08	-0.31
Private nonprofit	32.75	32.91	32.55	0.20	0.36
Private for-profit	4.46	4.54	4.59	-0.13	-0.05
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	6.91	6.99	6.05	0.86	0.94
Mideast	17.52	17.66	17.51	0.01	0.15
Great Lakes	15.90	16.01	16.64	-0.74	-0.63
Plains	8.44	8.39	8.88	-0.44	-0.49
Southeast	24.46	24.22	24.28	0.18	-0.06
Southwest	9.36	9.49	8.66	0.70	0.83
Rocky Mountains	3.89	3.88	4.51	-0.62*	-0.63
Far West	12.12	11.92	12.08	0.04	-0.16
Outlying areas	1.41	1.43	1.38	0.03	0.05
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–4,764	20.96	21.11	20.97	-0.01	0.14
4,765–13,042	21.08	21.09	22.60	-1.52*	-1.51
13,043–27,210	26.98	26.78	26.26	0.72	0.52
27,211 or more	30.99	31.02	30.18	0.81	0.84
Pell Grant status in 2007–08					
Received	25.23	24.96	22.38	2.85*	2.58*
Did not receive	71.82	72.14	75.95	-4.13*	-3.81*
Unknown	2.95	2.90	1.67	1.28	1.23*
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.82	72.14	75.95	-4.13*	-3.81*
\$1–\$2,155	9.58	9.57	9.48	0.10	0.09
\$2,156–\$4,309	9.18	8.94	8.04	1.14*	0.90*
\$4,310 or more	6.47	6.45	4.86	1.61*	1.59*
Unknown	2.95	2.90	1.67	1.28	1.23*
Direct Loan status in 2007–08					
Received	48.82	48.39	44.69	4.13*	3.70*
Did not receive	51.18	51.61	55.31	-4.13*	-3.70*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	51.18	51.61	55.31	-4.13*	-3.70*
\$1–\$4,400	11.66	11.60	11.87	-0.21	-0.27
\$4,401–\$5,500	22.94	22.94	21.63	1.31*	1.31*
\$5,501–\$6,394	1.09	1.09	0.94	0.15	0.15
\$6,395 or more	13.13	12.76	10.25	2.88*	2.51*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	93.35	93.39	94.08	-0.73*	-0.69*
\$1–\$5,000	1.47	1.43	1.32	0.15	0.11
\$5,001–\$9,396	1.62	1.64	1.49	0.13	0.15
\$9,397–\$14,000	1.83	1.81	1.54	0.29*	0.27
\$14,001 or more	1.74	1.74	1.58	0.16	0.16

See notes at end of table.

**Table K-37. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2007–08					
Received	57.01	56.44	53.52	3.49*	2.92*
Did not receive	42.99	43.56	46.48	-3.49*	-2.92*
Institution aid status in 2007–08					
Received	39.68	39.97	39.91	-0.23	0.06
Did not receive	60.32	60.03	60.09	0.23	-0.06
State aid status in 2007–08					
Received	27.42	27.54	27.86	-0.44	-0.32
Did not receive	72.58	72.46	72.14	0.44	0.32
Any aid status in 2007–08					
Received	74.91	74.61	74.91	#	-0.30
Did not receive	25.09	25.39	25.09	#	0.30
Social Security number available					
Available	96.13	96.10	96.74	-0.61	-0.64
Not available	3.87	3.90	3.26	0.61	0.64
Veteran status in 2007–08					
Yes	4.12	4.20	4.33	-0.21	-0.13
No	95.88	95.80	95.67	0.21	0.13
Race/ethnicity					
White, non-Hispanic	69.48	67.99	72.31	-2.83*	-4.32*
Black or African American, non-Hispanic	9.48	9.39	8.17	1.31	1.22*
Hispanic	8.91	8.95	8.89	0.02	0.06
Asian, non-Hispanic	6.43	6.46	5.90	0.53	0.56
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.96	1.95	2.22	-0.26*	-0.27
Unknown race and ethnicity	2.98	4.49	1.70	1.28*	2.79*
Sex					
Male	42.87	42.77	42.49	0.38	0.28
Female	57.13	56.84	57.51	-0.38	-0.67
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	30.44	30.99	31.61	-1.17*	-0.62
1–69 percent	10.40	10.58	9.33	1.07	1.25*
70–116 percent	9.48	9.65	9.38	0.10	0.27
117–146 percent	8.96	9.12	8.73	0.23	0.39
147 percent or more	10.03	10.21	9.41	0.62	0.80
Not applicable, did not borrow federal student loan(s)	30.68	29.44	31.54	-0.86	-2.10*

See notes at end of table.

**Table K-37. Unit-level mean and difference of means for eligible B&B:08/18 sample members using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	30.68	29.44	31.54	-0.86	-2.10*
\$1–\$16,735	19.22	19.57	20.06	-0.84	-0.49
\$16,736–\$27,586	17.54	17.85	17.12	0.42	0.73
\$27,587–\$57,914	17.92	18.24	17.72	0.20	0.52
\$57,915 or more	14.64	14.90	13.55	1.09	1.35*
Baccalaureate major					
Liberal arts	12.90	12.93	15.84	-2.94*	-2.91*
Psychology/history	13.09	13.19	15.85	-2.76*	-2.66*
Biology	8.84	8.89	5.00	3.84*	3.89*
Physical sciences	1.67	1.70	1.40	0.27*	0.30
Mathematics and statistics	0.91	0.93	1.04	-0.13*	-0.11
Computer and information sciences	2.41	2.45	2.39	0.02	0.06
Engineering	5.25	5.17	5.15	0.10	0.02
Education	6.00	6.08	6.65	-0.65*	-0.57*
Business	19.79	19.84	21.43	-1.64*	-1.59*
Health professions	6.28	6.12	6.85	-0.57	-0.73
Social sciences	0.49	0.50	0.72	-0.23*	-0.22
Agricultural sciences	11.32	11.14	12.19	-0.87	-1.05*
Missing/unknown	11.04	11.04	5.48	5.56*	5.56*
Age as of Dec. 31, 2007					
15–23	65.35	65.35	66.73	-1.38	-1.38
24–29	20.28	20.23	19.01	1.27*	1.22
30 or older	14.31	14.08	14.22	0.09	-0.14
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	10.63	10.82	8.66	1.97*	2.16*
No, did not default on federal student loan(s)	58.69	59.73	59.80	-1.11	-0.07
Not applicable, did not receive federal student loan(s)	30.68	29.44	31.54	-0.86	-2.10*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTK000 by column as specified in the column header.<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>4</sup> Categories were defined by quartiles computed at the institution level.<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&amp;B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table K-38. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	3.09	3.65	2.48	0.61	1.17
Mideast	14.19	13.95	14.75	-0.56	-0.80
Great Lakes	17.09	17.07	17.95	-0.86	-0.88
Plains	7.92	7.59	8.55	-0.63*	-0.96*
Southeast	27.69	27.53	27.02	0.67	0.51
Southwest	10.07	10.78	9.77	0.30	1.01
Rocky Mountains	4.17	4.28	4.51	-0.34	-0.23
Far West	14.95	14.29	14.21	0.74	0.08
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–11,664	20.28	19.73	21.01	-0.73	-1.28
11,665–20,095	23.61	24.26	23.56	0.05	0.70
20,096–31,916	25.78	25.10	25.55	0.23	-0.45
31,917 or more	30.33	30.91	29.87	0.46	1.04
Pell Grant status in 2007–08					
Received	25.67	25.99	22.55	3.12*	3.44*
Did not receive	71.48	71.59	75.45	-3.97*	-3.86*
Unknown	2.85	2.43	2.00	0.85	0.43
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	71.48	71.59	75.45	-3.97*	-3.86*
\$1–\$2,155	10.00	10.09	9.54	0.46	0.55
\$2,156–\$4,309	9.26	9.21	8.16	1.10*	1.05*
\$4,310 or more	6.42	6.69	4.85	1.57*	1.84*
Unknown	2.85	2.43	2.00	0.85	0.43
Direct Loan status in 2007–08					
Received	43.40	42.94	39.77	3.63*	3.17*
Did not receive	56.60	57.06	60.23	-3.63*	-3.17*
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	56.60	57.06	60.23	-3.63*	-3.17*
\$1–\$3,756	10.27	10.17	9.97	0.30	0.20
\$3,757–\$5,500	21.04	20.87	20.34	0.70	0.53
\$5,501–\$5,843	‡	‡	‡	‡	‡
\$5,844 or more	11.83	11.68	9.22	2.61*	2.46*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	94.50	94.90	95.21	-0.71*	-0.31
\$1–\$4,500	1.36	1.21	1.22	0.14	-0.01
\$4,501–\$7,438	1.42	1.42	1.16	0.26	0.26
\$7,439–\$12,000	1.44	1.37	1.27	0.17	0.10
\$12,001 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	51.58	51.50	48.61	2.97*	2.89*
Did not receive	48.42	48.50	51.39	-2.97*	-2.89*

See notes at end of table.

**Table K-38. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	31.33	31.38	30.99	0.34	0.39
Did not receive	68.67	68.62	69.01	-0.34	-0.39
State aid status in 2007–08					
Received	27.91	27.60	28.11	-0.20	-0.51
Did not receive	72.09	72.40	71.89	0.20	0.51
Any aid status in 2007–08					
Received	70.16	70.17	69.70	0.46	0.47
Did not receive	29.84	29.83	30.30	-0.46	-0.47
Social Security number available					
Available	94.93	95.40	95.78	-0.85	-0.38
Not available	5.07	4.60	4.22	0.85	0.38
Veteran status in 2007–08					
Yes	3.16	3.37	3.34	-0.18	0.03
No	96.84	96.63	96.66	0.18	-0.03
Race/ethnicity					
White, non-Hispanic	70.33	69.46	72.89	-2.56*	-3.43*
Black or African American, non-Hispanic	8.82	8.97	7.82	1.00*	1.15*
Hispanic	9.56	9.20	8.78	0.78	0.42
Asian, non-Hispanic	7.28	6.88	6.58	0.70	0.30
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	1.78	1.82	2.14	-0.36*	-0.32
Unknown race and ethnicity	1.63	2.95	1.15	0.48	1.80*
Sex					
Male	44.03	43.79	43.80	0.23	-0.01
Female	55.97	55.94	56.20	-0.23	-0.26
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	28.17	29.62	29.48	-1.31	0.14
1–68 percent	8.73	8.86	8.65	0.08	0.21
69–114 percent	9.13	9.49	8.96	0.17	0.53
115–143 percent	8.93	9.16	8.88	0.05	0.28
144 percent or more	10.17	9.81	9.12	1.05*	0.69
Not applicable, did not receive federal student loan(s)	34.87	33.06	34.91	-0.04	-1.85

See notes at end of table.



**Table K-38. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from public institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	34.87	33.06	34.91	-0.04	-1.85
\$1–\$15,070	17.05	18.04	18.56	-1.51*	-0.52
\$15,071–\$25,683	16.48	16.32	16.33	0.15	-0.01
\$25,684–\$56,748	17.54	18.16	16.67	0.87	1.49*
\$56,749 or more	14.06	14.42	13.52	0.54	0.90*
Baccalaureate major					
Liberal arts	12.21	11.85	15.33	-3.12*	-3.48*
Psychology/history	14.36	14.10	17.32	-2.96*	-3.22*
Biology	9.84	9.78	5.29	4.55*	4.49*
Physical sciences	1.93	1.96	1.50	0.43*	0.46
Mathematics and statistics	0.95	0.82	1.05	-0.10	-0.23*
Computer and information sciences	1.93	1.87	1.79	0.14*	0.08
Engineering	6.27	6.51	6.20	0.07	0.31
Education	6.80	7.02	7.49	-0.69*	-0.47
Business	17.71	17.80	19.01	-1.30*	-1.21
Health professions	5.38	5.77	6.83	-1.45*	-1.06*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	11.79	12.13	12.78	-0.99*	-0.65
Missing/unknown	10.41	9.93	4.84	5.57*	5.09*
Age as of Dec. 31, 2007					
15–23	66.17	66.53	67.62	-1.45*	-1.09
24–29	23.74	22.95	22.09	1.65*	0.86
30 or older	10.09	10.45	10.29	-0.20	0.16
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	9.41	9.01	7.70	1.71*	1.31*
No, did not default on federal student loan(s)	55.73	57.94	57.39	-1.66*	0.55
Not applicable, did not receive federal student loan(s)	34.87	33.06	34.91	-0.04	-1.85

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.

<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Categories were defined by quartiles computed at the institution level.

<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>6</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-39. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	15.18	14.30	13.80	1.38	0.50
Mideast	24.85	25.94	23.03	1.82	2.91
Great Lakes	14.08	14.38	15.11	-1.03	-0.73
Plains	9.93	10.29	9.61	0.32	0.68
Southeast	20.21	18.95	20.38	-0.17	-1.43
Southwest	4.03	3.93	4.88	-0.85*	-0.95*
Rocky Mountains	3.24	2.80	4.10	-0.86	-1.30
Far West	6.31	7.14	6.45	-0.14	0.69
Outlying areas	2.17	2.27	2.64	-0.47*	-0.37
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–2,507	27.07	28.97	25.14	1.93	3.83*
2,508–4,874	23.42	21.25	23.30	0.12	-2.05
4,875–11,571	20.60	21.95	21.88	-1.28	0.07
11,572 or more	28.90	27.84	29.67	-0.77	-1.83
Pell Grant status in 2007–08					
Received	24.69	23.59	21.67	3.02*	1.92
Did not receive	74.15	74.06	77.25	-3.10*	-3.19*
Unknown	1.16	2.35	1.08	0.08	1.27
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	74.15	74.06	77.25	-3.10*	-3.19*
\$1–\$2,155	8.43	8.34	8.67	-0.24	-0.33
\$2,156–\$4,309	9.37	8.84	7.91	1.46	0.93
\$4,310 or more	6.89	6.42	5.09	1.80*	1.33*
Unknown	1.16	2.35	1.08	0.08	1.27
Direct Loan status in 2007–08					
Received	57.68	56.51	51.14	6.54*	5.37*
Did not receive	42.32	43.49	48.86	-6.54*	-5.37*
Direct Loan amount received in 2007–08					
None	42.32	43.49	48.86	-6.54*	-5.37*
\$1–\$5,500	42.96	41.65	39.38	3.58*	2.27
\$5,501 or more	14.72	14.87	11.76	2.96*	3.11*
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	90.41	90.16	91.40	-0.99	-1.24
\$1–\$6,250	1.88	1.48	1.64	0.24	-0.16
\$6,251–\$11,000	2.52	2.54	2.31	0.21	0.23
\$11,001–\$16,091	2.17	2.90	1.80	0.37	1.10*
\$16,092 or more	3.03	2.91	2.86	0.17	0.05
Federal aid status in 2007–08					
Received	65.82	63.96	60.52	5.30*	3.44*
Did not receive	34.18	36.04	39.48	-5.30*	-3.44*
Institution aid status in 2007–08					
Received	59.79	60.32	60.50	-0.71	-0.18
Did not receive	40.21	39.68	39.50	0.71	0.18

See notes at end of table.

**Table K-39. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
State aid status in 2007–08					
Received	28.94	29.44	29.50	-0.56	-0.06
Did not receive	71.06	70.56	70.50	0.56	0.06
Any aid status in 2007–08					
Received	83.18	81.95	83.36	-0.18	-1.41
Did not receive	16.82	18.05	16.64	0.18	1.41
Social Security number available					
Available	98.03	97.34	98.28	-0.25	-0.94
Not available	1.97	2.66	1.72	0.25	0.94
Veteran status in 2007–08					
Yes	4.42	3.75	4.95	-0.53	-1.20*
No	95.58	96.25	95.05	0.53	1.20*
Race/ethnicity					
White, non-Hispanic	70.85	68.85	74.06	-3.21*	-5.21*
Black or African American, non-Hispanic	8.48	8.47	7.59	0.89	0.88
Hispanic	6.97	7.25	7.68	-0.71	-0.43
Asian, non-Hispanic	5.14	5.70	4.76	0.38	0.94
American Indian or Alaska Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
Other, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	2.35	2.29	2.40	-0.05	-0.11
Unknown race and ethnicity	5.06	6.46	2.39	2.67*	4.07*
Sex					
Male	41.42	40.73	40.19	1.23	0.54
Female	58.58	58.60	59.81	-1.23	-1.21
Unknown	‡	‡	‡	‡	‡
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	35.26	35.25	36.41	-1.15	-1.16
1–64 percent	10.82	10.98	9.42	1.40	1.56
65–113 percent	9.95	9.09	9.32	0.63	-0.23
114–146 percent	9.37	9.75	8.08	1.29	1.67*
147 percent or more	9.62	10.79	9.00	0.62	1.79
Not applicable, did not receive federal student loan(s)	24.98	24.15	27.78	-2.80*	-3.63*
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	24.98	24.15	27.78	-2.80*	-3.63*
\$1–\$17,125	24.16	23.56	23.95	0.21	-0.39
\$17,126–\$28,199	17.87	17.81	16.71	1.16	1.10
\$28,200–\$61,502	20.15	20.15	19.02	1.13	1.13
\$61,503 or more	12.84	14.34	12.53	0.31	1.81

See notes at end of table.

**Table K-39. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private nonprofit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Baccalaureate major					
Liberal arts	15.28	15.85	17.37	-2.09*	-1.52
Psychology/history	12.36	13.23	15.07	-2.71*	-1.84*
Biology	7.91	8.28	4.76	3.15*	3.52*
Physical sciences	1.42	1.46	1.42	#	0.04
Mathematics and statistics	0.96	1.27	1.16	-0.20	0.11
Computer and information sciences	2.79	2.22	2.48	0.31	-0.26
Engineering	3.96	3.31	3.74	0.22	-0.43
Education	5.28	5.12	5.96	-0.68*	-0.84
Business	20.47	20.68	23.18	-2.71*	-2.50*
Health professions	6.39	5.88	7.38	-0.99*	-1.50*
Social sciences	‡	‡	‡	‡	‡
Agricultural sciences	10.98	9.54	10.49	0.49	-0.95
Missing/unknown	11.49	12.50	5.86	5.63*	6.64*
Age as of Dec. 31, 2007					
15–23	71.61	70.37	72.14	-0.53	-1.77
24–29	12.45	13.69	11.85	0.60	1.84
30 or older	15.75	15.02	15.91	-0.16	-0.89
Unknown	‡	‡	‡	‡	‡
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	9.79	11.03	8.35	1.44*	2.68*
No, did not default on federal student loan(s)	65.23	64.82	63.86	1.37	0.96
Not applicable, did not receive federal student loan(s)	24.98	24.15	27.78	-2.80*	-3.63*

# Rounds to zero.

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTG000 by column as specified in the column header.

<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Categories were defined by quartiles computed at the institution level.

<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>6</sup> Categories were defined by quartiles.

NOTE: “Base weight” refers to the B&B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-40. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>2,3</sup>					
New England	‡	‡	‡	‡	‡
Mideast	10.62	8.66	16.28	-5.66	-7.62*
Great Lakes	12.52	13.17	9.45	3.07	3.72
Plains	4.75	5.69	8.27	-3.52*	-2.58
Southeast	10.25	16.90	14.50	-4.25	2.40
Southwest	38.45	32.07	20.26	18.19	11.81
Rocky Mountains	‡	‡	‡	‡	‡
Far West	14.76	14.03	22.84	-8.08*	-8.81*
Outlying areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,4</sup>					
1–1,972	20.12	16.84	22.01	-1.89	-5.17
1,973–3,355	11.45	17.59	16.50	-5.05	1.09
3,356–8,142	9.77	13.67	21.06	-11.29*	-7.39
8,143 or more	58.66	51.90	40.43	18.23*	11.47
Pell Grant status in 2007–08					
Received	22.92	20.57	25.10	-2.18	-4.53
Did not receive	59.59	65.96	73.55	-13.96*	-7.59
Unknown	‡	‡	‡	‡	‡
Pell Grant amount received in 2007–08 <sup>5</sup>					
None	59.59	65.96	73.55	-13.96*	-7.59
\$1–\$2,155	12.13	11.32	14.36	-2.23	-3.04
\$2,156–\$4,309	6.66	5.94	7.27	-0.61	-1.33
\$4,310 or more	4.13	3.32	3.47	0.66	-0.15
Unknown	‡	‡	‡	‡	‡
Direct Loan status in 2007–08					
Received	60.06	64.52	66.16	-6.10	-1.64
Did not receive	39.94	35.48	33.84	6.10	1.64
Direct Loan amount received in 2007–08 <sup>6</sup>					
None	39.94	35.48	33.84	6.10	1.64
\$1–\$3,938	10.89	14.39	19.12	-8.23	-4.73
\$3,939–\$5,500	8.67	16.92	16.40	-7.73*	0.52
\$5,501–\$10,500	23.04	24.45	29.43	-6.39	-4.98
\$10,501 or more	‡	‡	‡	‡	‡
Parent PLUS Loan amount received in 2007–08 <sup>6</sup>					
None	98.65	95.87	97.54	1.11*	-1.67
\$1–\$5,000	‡	‡	‡	‡	‡
\$5,001–\$8,292	‡	‡	‡	‡	‡
\$8,293–\$11,737	‡	‡	‡	‡	‡
\$11,738 or more	‡	‡	‡	‡	‡
Federal aid status in 2007–08					
Received	68.71	69.97	71.21	-2.50	-1.24
Did not receive	31.29	30.03	28.79	2.50	1.24

See notes at end of table.

**Table K-40. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Institution aid status in 2007–08					
Received	9.54	10.80	16.04	-6.50*	-5.24*
Did not receive	90.46	89.20	83.96	6.50*	5.24*
State aid status in 2007–08					
Received	9.33	12.94	12.96	-3.63	-0.02
Did not receive	90.67	87.06	87.04	3.63	0.02
Any aid status in 2007–08					
Received	81.09	82.63	86.28	-5.19	-3.65
Did not receive	18.91	17.37	13.72	5.19	3.65
Social Security number available					
Available	99.01	96.92	98.92	0.09	-2.00
Not available	†	†	†	†	†
Veteran status in 2007–08					
Yes	15.57	18.82	13.55	2.02	5.27
No	84.43	81.18	86.45	-2.02	-5.27
Race/ethnicity					
White, non-Hispanic	47.34	41.38	52.07	-4.73	-10.69*
Black or African American, non-Hispanic	26.08	21.88	17.03	9.05	4.85
Hispanic	13.95	17.68	18.99	-5.04	-1.31
Asian, non-Hispanic	†	†	†	†	†
American Indian or Alaska Native, non-Hispanic	†	†	†	†	†
Native Hawaiian or other Pacific Islander, non-Hispanic	†	†	†	†	†
Other, non-Hispanic	†	†	†	†	†
More than one race, non-Hispanic	†	†	†	†	†
Unknown race and ethnicity	†	†	†	†	†
Sex					
Male	37.17	43.48	40.85	-3.68	2.63
Female	62.83	56.52	59.15	3.68	-2.63
Unknown	†	†	†	†	†
Percent of federal student loans that is still owed as of Oct. 31, 2020 <sup>6</sup>					
None	26.98	19.05	26.73	0.25	-7.68*
1–103 percent	25.83	26.55	15.45	10.38	11.10
104–141 percent	10.41	9.92	16.35	-5.94	-6.43*
142–166 percent	7.38	8.85	14.29	-6.91*	-5.44
167 percent or more	15.77	17.58	15.16	0.61	2.42
Not applicable, did not receive federal student loan(s)	13.64	18.04	12.02	1.62	6.02

See notes at end of table.

**Table K-40. Unit-level mean and difference of means for eligible B&B:08/18 sample members sampled from private for-profit institutions using weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response), by weight adjustment and selected variables: 2018—Continued**

Variable	Unit-level mean <sup>1</sup>			Difference	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans as of Oct. 31, 2019 <sup>6</sup>					
None	13.64	18.04	12.02	1.62	6.02
\$1–\$23,046	22.38	20.21	20.58	1.80	-0.37
\$23,047–\$35,955	16.76	23.12	21.32	-4.56	1.80
\$35,956–\$50,287	14.68	16.23	24.12	-9.44*	-7.89*
\$50,288 or more	32.54	22.40	21.96	10.58	0.44
Baccalaureate major					
Liberal arts	5.25	6.73	12.05	-6.80*	-5.32*
Psychology/history	‡	‡	‡	‡	‡
Biology	‡	‡	‡	‡	‡
Computer and information sciences	6.42	12.02	10.11	-3.69*	1.91
Engineering	‡	‡	‡	‡	‡
Business	44.14	41.92	42.05	2.09	-0.13
Health professions	‡	‡	‡	‡	‡
Agricultural sciences	7.15	9.09	16.03	-8.88*	-6.94
Missing/unknown	‡	‡	‡	‡	‡
Age as of Dec. 31, 2007					
15–23	7.77	12.65	16.20	-8.43*	-3.55
24–29	29.06	30.13	27.67	1.39	2.46
30 or older	63.16	57.22	56.12	7.04*	1.10
Federal loan default status as of Oct. 31, 2020					
Yes, defaulted on federal student loan(s)	34.09	34.35	23.99	10.10	10.36
No, did not default on federal student loan(s)	52.28	47.60	63.99	-11.71*	-16.39*
Not applicable, did not receive federal student loan(s)	13.64	18.04	12.02	1.62	6.02

‡ Reporting standards not met (fewer than thirty unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:08/18 base weight with additional adjustments for analysis weight WTK000 by column as specified in the column header.

<sup>2</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mid East = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Categories were defined by quartiles computed at the institution level.

<sup>5</sup> In the 2007–08 academic year, the maximum Pell Grant award allowed was \$4,310. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$4,310 were divided into two categories based on the median award amount, \$2,156.

<sup>6</sup> Categories were defined by quartiles.

NOTE: "Base weight" refers to the B&B:08/18 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018**

Variable	Overall	Control of baccalaureate-granting institution		
		Public	Private nonprofit	Private for-profit
<b>B3AFFCHLD (Education cost, as of B&amp;B:08/18 interview: Delayed having children)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.90	6.74	10.04	20.42
Median percent relative bias across characteristics <sup>2</sup>	5.33	4.46	6.69	14.89
Percentage of characteristics with significant bias	52.44	44.59	38.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	#	0.27	0.91	1.06
Effect size for difference <sup>4</sup>	#	#	0.01	‡
<b>B3AFFEDJB (Education cost, as of B&amp;B:08/18 interview: Took job instead of enrolling)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.93	6.75	10.19	20.21
Median percent relative bias across characteristics <sup>2</sup>	5.26	4.29	6.63	14.59
Percentage of characteristics with significant bias	52.44	41.89	38.16	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.43	0.89	0.99	2.88
Effect size for difference <sup>4</sup>	#	0.01	0.01	‡
<b>B3AFFHOME (Education cost, as of B&amp;B:08/18 interview: Delayed buying a home)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.89	6.72	10.04	20.20
Median percent relative bias across characteristics <sup>2</sup>	5.39	4.33	6.42	14.47
Percentage of characteristics with significant bias	52.44	43.24	38.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.09	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.35	0.12	1.57	2.15
Effect size for difference <sup>4</sup>	#	#	0.02	0.02
<b>B3AFFLESS (Education cost, as of B&amp;B:08/18 interview: Took job outside field of study)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.91	6.75	10.20	20.20
Median percent relative bias across characteristics <sup>2</sup>	5.18	4.45	6.61	14.47
Percentage of characteristics with significant bias	52.44	40.54	38.16	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.09	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.07	0.22	0.75	5.37*
Effect size for difference <sup>4</sup>	#	#	0.01	‡
<b>B3AFFMARR (Education cost, as of B&amp;B:08/18 interview: Delayed getting married)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.87	6.67	10.04	20.20
Median percent relative bias across characteristics <sup>2</sup>	5.14	4.19	6.66	14.47
Percentage of characteristics with significant bias	52.44	39.19	38.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.09	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.09	0.03	0.09	0.06
Effect size for difference <sup>4</sup>	#	#	#	‡

See notes at end of table.



**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

	Control of baccalaureate-granting institution			
Variable	Overall	Public	Private nonprofit	Private for-profit
<b>B3AFFWKMR (Education cost, as of B&amp;B:08/18 interview: Worked more than desired)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.88	6.69	10.19	20.20
Median percent relative bias across characteristics <sup>2</sup>	5.24	4.37	6.69	14.47
Percentage of characteristics with significant bias	52.44	41.89	38.16	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.09	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.22	0.85	1.41	3.36
Effect size for difference <sup>4</sup>	#	0.01	0.01	0.03
<b>B3ALONE (Household composition, as of B&amp;B:08/18 interview: Living alone)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.62	6.43	9.84	19.96
Median percent relative bias across characteristics <sup>2</sup>	5.02	4.10	6.73	14.05
Percentage of characteristics with significant bias	52.44	36.49	42.67	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.59	0.69	0.81	1.86
Effect size for difference <sup>4</sup>	0.01	0.01	0.01	‡
<b>B3BADEPCHILD (Months between BA completion and first dependent child, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.38	10.57	14.88	27.98
Median percent relative bias across characteristics <sup>2</sup>	8.02	6.55	10.76	21.48
Percentage of characteristics with significant bias	47.56	44.44	40.00	14.29
Median effect size <sup>3</sup>	0.10	0.09	0.13	0.26
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.35	1.78	1.98	18.60
Effect size for difference <sup>4</sup>	0.01	0.01	0.01	0.07
<b>B3BORCUM (Amount borrowed in federal and private student loans, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.73	6.59	9.97	15.91
Median percent relative bias across characteristics <sup>2</sup>	4.16	4.16	7.19	10.88
Percentage of characteristics with significant bias	40.24	36.00	32.89	12.07
Median effect size <sup>3</sup>	0.06	0.05	0.06	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	9.95*	9.73*	9.86*	8.57*
Effect size for difference <sup>4</sup>	0.07	0.06	0.07	0.11
<b>B3CARMT (Monthly car payment amount, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.97	6.94	9.80	19.18
Median percent relative bias across characteristics <sup>2</sup>	4.83	4.50	6.13	14.01
Percentage of characteristics with significant bias	52.44	43.24	40.00	17.54
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.20
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.53	0.79	0.23	1.44
Effect size for difference <sup>4</sup>	#	0.01	#	0.01

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

	Control of baccalaureate-granting institution			
Variable	Overall	Public	Private nonprofit	Private for-profit
<b>B3CJBAL (Current job: satisfaction with work life balance)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.64	7.33	9.96	22.41
Median percent relative bias across characteristics <sup>2</sup>	5.78	4.67	6.40	18.46
Percentage of characteristics with significant bias	52.44	40.28	38.36	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.41	0.69	1.92*	3.19
Effect size for difference <sup>4</sup>	0.01	0.01	‡	‡
<b>B3CJBEN (Current job: satisfaction with benefits)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.60	7.34	9.97	22.73
Median percent relative bias across characteristics <sup>2</sup>	5.74	4.60	6.42	15.40
Percentage of characteristics with significant bias	52.44	38.89	38.36	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.18
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.36*	1.67	2.07*	‡
Effect size for difference <sup>4</sup>	0.02	0.02	0.02	‡
<b>B3CJCHAL (Current job: satisfaction with challenge of work)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.65	7.31	10.05	22.41
Median percent relative bias across characteristics <sup>2</sup>	5.90	4.59	6.67	18.44
Percentage of characteristics with significant bias	52.44	38.89	39.73	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.67	1.05	1.64*	‡
Effect size for difference <sup>4</sup>	0.01	‡	‡	‡
<b>B3CJCURL (Current job: part of a career in industry)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.69	7.23	10.00	22.46
Median percent relative bias across characteristics <sup>2</sup>	5.50	4.43	6.49	18.38
Percentage of characteristics with significant bias	54.88	36.11	39.73	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.45	0.08	0.56	4.07*
Effect size for difference <sup>4</sup>	0.01	#	0.01	‡
<b>B3CJHINS (Current job: health insurance offered)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.58	7.22	9.97	22.41
Median percent relative bias across characteristics <sup>2</sup>	5.55	4.58	6.47	18.47
Percentage of characteristics with significant bias	52.44	36.11	39.73	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.24	0.51	0.36	2.66*
Effect size for difference <sup>4</sup>	#	0.01	#	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3CJIMP (Current job: satisfaction with importance of work)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.62	7.32	10.01	22.41
Median percent relative bias across characteristics <sup>2</sup>	5.77	4.62	6.40	18.47
Percentage of characteristics with significant bias	53.66	38.89	38.36	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.39	0.35	0.10	4.32
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3CJNSFA (Current job: requires a bachelor's degree or higher)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.54	7.18	9.96	22.49
Median percent relative bias across characteristics <sup>2</sup>	5.55	4.52	6.47	18.43
Percentage of characteristics with significant bias	51.22	34.72	39.73	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.29	0.93	0.47	4.42*
Effect size for difference <sup>4</sup>	#	0.01	0.01	‡
<b>B3CJPAY (Current job: satisfaction with compensation)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.65	7.38	9.94	22.40
Median percent relative bias across characteristics <sup>2</sup>	5.82	4.54	6.39	18.50
Percentage of characteristics with significant bias	52.44	43.06	38.36	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.52	1.27	1.23	‡
Effect size for difference <sup>4</sup>	0.01	0.01	0.02	‡
<b>B3CJSEC (Current job: satisfaction with job security)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.63	7.28	9.98	22.41
Median percent relative bias across characteristics <sup>2</sup>	5.77	4.61	6.46	18.47
Percentage of characteristics with significant bias	52.44	38.89	38.36	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.63	0.70	0.99	7.60*
Effect size for difference <sup>4</sup>	0.01	0.01	‡	‡
<b>B3CJSUP (Current job: supervises others)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.42	6.97	10.00	22.41
Median percent relative bias across characteristics <sup>2</sup>	5.42	4.26	6.46	18.80
Percentage of characteristics with significant bias	51.22	34.72	38.36	17.54
Median effect size <sup>3</sup>	0.07	0.06	0.09	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.03*	1.07*	0.37	2.29
Effect size for difference <sup>4</sup>	0.02	0.02	‡	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3CLICENSE (Active industry certification or occupational license in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.74	6.53	9.83	20.28
Median percent relative bias across characteristics <sup>2</sup>	5.00	4.06	7.16	15.15
Percentage of characteristics with significant bias	53.66	39.19	44.59	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.36	0.35	0.51	1.53
Effect size for difference <sup>4</sup>	#	#	0.01	‡
<b>B3CONTEMP (Contributed to employer-based retirement account in past 12 months, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	10.59	8.60	12.46	24.90
Median percent relative bias across characteristics <sup>2</sup>	6.81	5.93	7.78	19.00
Percentage of characteristics with significant bias	54.88	36.00	39.47	8.62
Median effect size <sup>3</sup>	0.08	0.07	0.10	0.20
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.01	0.36	0.44	0.30
Effect size for difference <sup>4</sup>	#	#	0.01	‡
<b>B3CONTNON (Contributed to non-employer-based retirement account in past 12 months, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	13.02	11.54	15.00	33.58
Median percent relative bias across characteristics <sup>2</sup>	9.17	8.76	10.31	19.33
Percentage of characteristics with significant bias	45.12	39.47	28.95	20.69
Median effect size <sup>3</sup>	0.10	0.09	0.11	0.22
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.38	0.39	1.15	2.85
Effect size for difference <sup>4</sup>	#	#	0.01	0.03
<b>B3CRDBAL (Credit card balance, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	17.46	16.09	22.58	31.20
Median percent relative bias across characteristics <sup>2</sup>	14.43	14.22	18.71	25.14
Percentage of characteristics with significant bias	62.20	50.00	52.00	24.14
Median effect size <sup>3</sup>	0.14	0.12	0.20	0.29
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.52	1.99	1.80	12.60
Effect size for difference <sup>4</sup>	0.01	0.02	0.02	0.11
<b>B3CREDCRD (Credit card status, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.76	6.70	9.66	20.23
Median percent relative bias across characteristics <sup>2</sup>	5.06	4.42	6.34	14.48
Percentage of characteristics with significant bias	52.44	41.89	42.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.55	0.63	0.28	2.00
Effect size for difference <sup>4</sup>	0.01	0.01	0.01	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3CSTDYCR (Monthly daycare costs, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	14.24	11.62	16.46	40.99
Median percent relative bias across characteristics <sup>2</sup>	9.40	6.92	11.91	28.37
Percentage of characteristics with significant bias	48.78	45.83	37.14	26.79
Median effect size <sup>3</sup>	0.11	0.09	0.15	0.41
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.91	1.67	0.86	4.21
Effect size for difference <sup>4</sup>	0.01	0.02	0.01	0.04
<b>B3DADED (Father's highest education level, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	9.56	7.85	10.69	23.14
Median percent relative bias across characteristics <sup>2</sup>	5.82	4.79	7.51	15.35
Percentage of characteristics with significant bias	51.22	40.54	41.67	22.03
Median effect size <sup>3</sup>	0.07	0.05	0.10	0.23
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	4.36*	3.82*	5.33*	6.38
Effect size for difference <sup>4</sup>	0.06	‡	‡	‡
<b>B3DEMPDIS (Reason not working for pay: Disabled, in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	26.07	24.95	36.07	44.85
Median percent relative bias across characteristics <sup>2</sup>	17.63	18.60	30.79	39.05
Percentage of characteristics with significant bias	40.24	34.72	27.03	3.64
Median effect size <sup>3</sup>	0.19	0.16	0.29	0.47
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.44	1.24	1.14	‡
Effect size for difference <sup>4</sup>	0.01	‡	‡	‡
<b>B3DEMPHM (Reason not working for pay: Homemaker, in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	25.95	24.85	35.99	44.85
Median percent relative bias across characteristics <sup>2</sup>	17.36	18.50	30.65	39.05
Percentage of characteristics with significant bias	40.24	36.11	27.03	3.64
Median effect size <sup>3</sup>	0.19	0.16	0.29	0.47
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	4.18	2.03	9.17	‡
Effect size for difference <sup>4</sup>	0.04	0.02	0.09	‡
<b>B3DEMPTMP (Reason not working for pay: Waiting to report to work or layoff, in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	25.72	24.76	36.03	44.85
Median percent relative bias across characteristics <sup>2</sup>	17.06	17.83	30.96	39.05
Percentage of characteristics with significant bias	40.24	34.72	27.03	3.64
Median effect size <sup>3</sup>	0.19	0.15	0.30	0.47
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.71	0.39	1.24	‡
Effect size for difference <sup>4</sup>	‡	‡	‡	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Overall	Control of baccalaureate-granting institution		
		Public institution	Private nonprofit institution	Private for-profit institution
<b>B3DEMPTRV (Reason not working for pay: Traveling, in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	25.96	24.81	36.08	44.85
Median percent relative bias across characteristics <sup>2</sup>	17.43	18.34	30.77	39.05
Percentage of characteristics with significant bias	40.24	34.72	27.03	3.64
Median effect size <sup>3</sup>	0.19	0.16	0.29	0.47
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.53	0.35	0.98	‡
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3DEMPVOL (Reason not working for pay: Volunteering, in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	26.05	25.05	36.08	44.85
Median percent relative bias across characteristics <sup>2</sup>	17.57	18.64	30.77	39.05
Percentage of characteristics with significant bias	40.24	36.11	27.03	3.64
Median effect size <sup>3</sup>	0.19	0.16	0.29	0.47
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.10	0.21	1.01	‡
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3DEPAGEHIGH (Age of oldest dependent child, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.39	10.68	14.94	27.96
Median percent relative bias across characteristics <sup>2</sup>	8.26	6.82	11.32	21.43
Percentage of characteristics with significant bias	47.56	44.44	41.43	14.29
Median effect size <sup>3</sup>	0.10	0.09	0.13	0.26
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.62*	1.47	1.72	3.20
Effect size for difference <sup>4</sup>	0.02	0.02	0.02	0.06
<b>B3DEPAGELOW (Age of youngest dependent child, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.39	10.68	14.94	27.96
Median percent relative bias across characteristics <sup>2</sup>	8.26	6.82	11.32	21.43
Percentage of characteristics with significant bias	47.56	44.44	41.43	14.29
Median effect size <sup>3</sup>	0.10	0.09	0.13	0.26
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.27	0.26	0.92	5.44
Effect size for difference <sup>4</sup>	#	#	0.01	0.07
<b>B3DPNTS (Household composition, as of B&amp;B:08/18 interview: Living with children or dependents in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.62	6.43	9.84	19.96
Median percent relative bias across characteristics <sup>2</sup>	5.02	4.10	6.73	14.05
Percentage of characteristics with significant bias	52.44	36.49	42.67	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.73	1.15	0.75	5.64*
Effect size for difference <sup>4</sup>	0.01	0.01	0.01	0.06

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3DWRKS (Primarily student or employee while enrolled in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	30.77	26.48	42.69	56.31
Median percent relative bias across characteristics <sup>2</sup>	19.56	16.87	32.06	28.41
Percentage of characteristics with significant bias	45.12	29.17	31.08	7.27
Median effect size <sup>3</sup>	0.21	0.18	0.35	0.49
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.21	0.54	1.34	‡
Effect size for difference <sup>4</sup>	#	‡	‡	‡
<b>B3EVRDEF (Ever defaulted on a federal or private student loan, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	13.19	11.48	14.35	20.07
Median percent relative bias across characteristics <sup>2</sup>	9.85	8.32	10.39	15.07
Percentage of characteristics with significant bias	57.32	46.67	40.79	21.05
Median effect size <sup>3</sup>	0.10	0.09	0.12	0.20
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.67*	2.82*	1.53	5.21
Effect size for difference <sup>4</sup>	0.04	0.04	0.02	‡
<b>B3EVREMLAID (Ever received employer assistance for postbaccalaureate degree, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	13.75	11.34	16.77	34.73
Median percent relative bias across characteristics <sup>2</sup>	9.06	7.86	10.85	27.13
Percentage of characteristics with significant bias	48.78	38.16	34.21	12.07
Median effect size <sup>3</sup>	0.10	0.09	0.13	0.33
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.13	0.38	0.64	3.65
Effect size for difference <sup>4</sup>	#	#	0.01	‡
<b>B3EVRFELSHIP (Ever received assistantships or fellowships for postbaccalaureate degree, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	14.15	10.96	16.84	37.22
Median percent relative bias across characteristics <sup>2</sup>	9.51	7.33	10.00	30.76
Percentage of characteristics with significant bias	46.34	31.17	35.53	13.79
Median effect size <sup>3</sup>	0.09	0.08	0.13	0.34
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	9.24*	9.83*	6.68*	29.78*
Effect size for difference <sup>4</sup>	0.10	0.11	0.07	0.35
<b>B3EVRGRANT (Ever received grants or scholarships for postbaccalaureate degree, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	13.70	10.61	16.18	36.95
Median percent relative bias across characteristics <sup>2</sup>	8.56	7.06	10.05	29.21
Percentage of characteristics with significant bias	47.56	28.00	39.47	13.79
Median effect size <sup>3</sup>	0.10	0.07	0.14	0.34
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	6.59*	5.99*	6.65*	26.12*
Effect size for difference <sup>4</sup>	0.07	0.06	0.07	0.26

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Overall	Control of baccalaureate-granting institution		
		Public institution	Private nonprofit institution	Private for-profit institution
<b>B3EVRGRDENR (Ever enrolled in a graduate degree program since bachelor's degree completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.13	9.93	13.47	36.16
Median percent relative bias across characteristics <sup>2</sup>	7.83	6.89	9.53	28.38
Percentage of characteristics with significant bias	48.78	43.06	43.06	22.64
Median effect size <sup>3</sup>	0.11	0.08	0.13	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.86*	3.98*	3.62*	‡
Effect size for difference <sup>4</sup>	0.06	0.06	0.06	‡
<b>B3EVRPRIVDEF (Ever defaulted on private student loans, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	23.00	21.65	23.61	40.01
Median percent relative bias across characteristics <sup>2</sup>	18.05	18.97	19.58	28.04
Percentage of characteristics with significant bias	54.88	45.33	38.16	24.14
Median effect size <sup>3</sup>	0.18	0.17	0.20	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.75	3.35*	0.14	2.64
Effect size for difference <sup>4</sup>	0.02	0.05	#	0.03
<b>B3EVRPRIVPIF (Ever had at least one private student loan paid in full, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.84	21.79	21.04	39.46
Median percent relative bias across characteristics <sup>2</sup>	17.07	18.34	14.26	28.83
Percentage of characteristics with significant bias	53.66	50.67	34.21	24.14
Median effect size <sup>3</sup>	0.17	0.17	0.18	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.71	0.15	2.76	5.27
Effect size for difference <sup>4</sup>	0.02	#	0.03	0.06
<b>B3EVRTCH (Taught at K-12 level between BA completion and B&amp;B:08/18 interview, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.77	5.97	9.12	13.89
Median percent relative bias across characteristics <sup>2</sup>	4.51	3.50	5.70	11.34
Percentage of characteristics with significant bias	52.44	38.03	41.10	10.53
Median effect size <sup>3</sup>	0.05	0.05	0.08	0.14
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.64*	2.76*	2.21*	1.01*
Effect size for difference <sup>4</sup>	0.03	0.03	0.03	‡
<b>B3FEDPAY (Current monthly payment on federal student loans in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.68	20.67	26.33	31.09
Median percent relative bias across characteristics <sup>2</sup>	16.24	15.06	20.33	19.24
Percentage of characteristics with significant bias	58.75	51.39	40.54	7.14
Median effect size <sup>3</sup>	0.16	0.16	0.24	0.27
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.81	4.17	2.08	10.84
Effect size for difference <sup>4</sup>	0.01	0.03	0.02	0.10

See notes at end of table.



**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3FEDPAYMISS (Missed a federal student loan payment within 12 months, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.97	20.69	25.24	37.08
Median percent relative bias across characteristics <sup>2</sup>	17.87	14.97	19.12	23.28
Percentage of characteristics with significant bias	56.25	56.16	42.67	20.69
Median effect size <sup>3</sup>	0.19	0.18	0.25	0.39
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.52	0.84	0.57	2.05
Effect size for difference <sup>4</sup>	0.01	0.02	0.02	‡
<b>B3FEDPAYMORE (Made federal student loan prepayment within 12 months, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.97	20.69	25.24	37.08
Median percent relative bias across characteristics <sup>2</sup>	17.87	14.97	19.12	23.28
Percentage of characteristics with significant bias	56.25	56.16	42.67	20.69
Median effect size <sup>3</sup>	0.19	0.18	0.25	0.39
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.94	1.52	0.85	9.79
Effect size for difference <sup>4</sup>	0.02	0.02	0.01	‡
<b>B3FEDPAYPLAN_ALT (Currently enrolled in alternative repayment plan on at least one federal student loan in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.32	10.08	14.77	21.03
Median percent relative bias across characteristics <sup>2</sup>	9.19	7.82	9.94	9.89
Percentage of characteristics with significant bias	60.00	52.11	46.67	21.05
Median effect size <sup>3</sup>	0.11	0.08	0.14	0.18
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	26.16*	21.75*	32.26*	32.49*
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3FEDPAYPLAN_GRD (Currently enrolled in graduated repayment plan on at least one federal student loan in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.33	9.85	14.86	20.47
Median percent relative bias across characteristics <sup>2</sup>	9.30	7.95	9.77	11.28
Percentage of characteristics with significant bias	57.50	48.61	46.67	21.05
Median effect size <sup>3</sup>	0.11	0.08	0.14	0.18
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	25.52*	21.00*	32.16*	30.67*
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3FEDPAYPLAN_INC (Currently enrolled in income-based repayment plan on at least one federal student loan in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.47	10.06	14.48	20.74
Median percent relative bias across characteristics <sup>2</sup>	9.30	8.42	9.22	10.93
Percentage of characteristics with significant bias	65.00	50.00	44.59	19.30
Median effect size <sup>3</sup>	0.11	0.08	0.14	0.18
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	21.79*	17.94*	26.78*	28.42*
Effect size for difference <sup>4</sup>	‡	‡	‡	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3FEDPAYPLAN_STND (Currently enrolled in standard repayment plan on at least one federal student loan in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	11.41	9.65	14.29	19.63
Median percent relative bias across characteristics <sup>2</sup>	8.46	7.68	9.27	15.80
Percentage of characteristics with significant bias	55.00	50.00	48.65	8.77
Median effect size <sup>3</sup>	0.11	0.08	0.14	0.16
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	22.76*	18.83*	27.56*	30.50*
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3HIBTMON (Highest post-bachelor's degree program completed, as of 2018: Number of months elapsed between start date and completion date)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	14.98	11.23	16.96	36.54
Median percent relative bias across characteristics <sup>2</sup>	10.27	8.11	12.49	27.50
Percentage of characteristics with significant bias	46.34	38.03	47.22	9.43
Median effect size <sup>3</sup>	0.11	0.10	0.13	0.36
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.29	0.11	1.16	1.92
Effect size for difference <sup>4</sup>	#	#	0.02	0.02
<b>B3HICDERMAJ (Highest degree completed between BA completion and B&amp;B:08/18 interview: Major or field of study (6-digit CIP code))</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	14.05	10.86	16.13	46.70
Median percent relative bias across characteristics <sup>2</sup>	9.52	7.87	11.77	36.76
Percentage of characteristics with significant bias	47.56	39.44	40.28	26.42
Median effect size <sup>3</sup>	0.10	0.10	0.14	0.43
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.82	‡	‡	‡
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3HICINT (Highest degree completed between BA completion and B&amp;B:08/18 interview: Enrollment intensity)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	14.06	11.00	15.69	46.70
Median percent relative bias across characteristics <sup>2</sup>	9.44	8.34	11.32	36.76
Percentage of characteristics with significant bias	47.56	39.44	43.06	26.42
Median effect size <sup>3</sup>	0.11	0.10	0.14	0.43
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.69	0.51	2.28*	‡
Effect size for difference <sup>4</sup>	0.01	0.01	0.02	‡
<b>B3HIDEG (Highest post-bachelor's degree completed, as of 2018: Degree type)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	14.17	11.18	15.64	46.75
Median percent relative bias across characteristics <sup>2</sup>	9.64	7.59	10.98	36.73
Percentage of characteristics with significant bias	48.78	40.85	40.85	26.42
Median effect size <sup>3</sup>	0.11	0.10	0.14	0.44
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	4.15*	4.27*	3.41*	‡
Effect size for difference <sup>4</sup>	‡	‡	‡	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3HOMOWE (Amount owed on mortgage for primary residence, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	10.26	9.27	13.22	27.91
Median percent relative bias across characteristics <sup>2</sup>	6.45	5.90	9.45	20.83
Percentage of characteristics with significant bias	40.24	38.89	38.67	7.14
Median effect size <sup>3</sup>	0.07	0.06	0.11	0.23
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.19	1.10	1.40	0.19
Effect size for difference <sup>4</sup>	0.02	0.02	0.02	#
<b>B3HOMVAL (Value of residence, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	10.38	9.39	13.32	27.99
Median percent relative bias across characteristics <sup>2</sup>	6.58	5.83	9.17	22.20
Percentage of characteristics with significant bias	41.46	41.67	37.84	7.14
Median effect size <sup>3</sup>	0.07	0.06	0.11	0.24
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.70*	1.13	2.99*	1.16
Effect size for difference <sup>4</sup>	0.02	0.01	0.04	0.02
<b>B3HOTH (Household composition, as of B&amp;B:08/18 interview: Living with others)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.62	6.43	9.84	19.96
Median percent relative bias across characteristics <sup>2</sup>	5.02	4.10	6.73	14.05
Percentage of characteristics with significant bias	52.44	36.49	42.67	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.25	0.32	0.10	0.19
Effect size for difference <sup>4</sup>	#	0.01	#	‡
<b>B3HRDSHP (Financial cost of degree posed hardship)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	11.68	9.02	13.21	35.30
Median percent relative bias across characteristics <sup>2</sup>	7.51	6.55	9.27	30.56
Percentage of characteristics with significant bias	46.34	39.44	42.86	20.37
Median effect size <sup>3</sup>	0.10	0.08	0.13	0.36
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	4.00*	4.54*	3.27*	0.44
Effect size for difference <sup>4</sup>	0.04	0.05	0.03	‡
<b>B3IDRAWARE (Ever heard of income-driven repayment (IDR) plans, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	23.69	20.46	28.10	30.98
Median percent relative bias across characteristics <sup>2</sup>	16.56	14.32	20.70	26.53
Percentage of characteristics with significant bias	46.25	41.10	39.44	16.07
Median effect size <sup>3</sup>	0.19	0.16	0.31	0.34
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.66	1.11	8.69*	3.97
Effect size for difference <sup>4</sup>	0.04	0.01	0.09	0.04

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3IDRNOENRINELIG (Currently not enrolled in income-driven repayment (IDR) programs, assumed ineligible, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	32.38	28.58	38.01	37.25
Median percent relative bias across characteristics <sup>2</sup>	22.63	21.07	32.18	26.77
Percentage of characteristics with significant bias	45.00	36.62	45.59	25.93
Median effect size <sup>3</sup>	0.26	0.22	0.39	0.38
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.72	0.62	7.75	7.70
Effect size for difference <sup>4</sup>	0.04	0.01	0.09	‡
<b>B3IDRNOENROTHR (Currently not enrolled in income-driven repayment (IDR) programs, other reason, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	32.38	28.58	38.01	37.25
Median percent relative bias across characteristics <sup>2</sup>	22.63	21.07	32.18	26.77
Percentage of characteristics with significant bias	45.00	36.62	45.59	25.93
Median effect size <sup>3</sup>	0.26	0.22	0.39	0.38
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.50	4.58	3.51	10.96
Effect size for difference <sup>4</sup>	0.03	0.05	0.04	0.11
<b>B3IDRNOENRPAY (Currently not enrolled in income-driven repayment (IDR) programs, did not need lower monthly payments, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	32.38	28.58	38.01	37.25
Median percent relative bias across characteristics <sup>2</sup>	22.63	21.07	32.18	26.77
Percentage of characteristics with significant bias	45.00	36.62	45.59	25.93
Median effect size <sup>3</sup>	0.26	0.22	0.39	0.38
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	5.81	3.59	3.98	28.26
Effect size for difference <sup>4</sup>	0.06	0.04	0.04	0.32
<b>B3IDRNOENRTERMS (Currently not enrolled in income-driven repayment (IDR) programs, did not like terms of these plans, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	32.38	28.58	38.01	37.25
Median percent relative bias across characteristics <sup>2</sup>	22.63	21.07	32.18	26.77
Percentage of characteristics with significant bias	45.00	36.62	45.59	25.93
Median effect size <sup>3</sup>	0.26	0.22	0.39	0.38
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.20	1.02	3.79	2.22
Effect size for difference <sup>4</sup>	#	0.01	0.04	‡
<b>B3IDRNOENRTIME (Currently not enrolled in income-driven repayment (IDR) programs, too much time or effort, as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	32.38	28.58	38.01	37.25
Median percent relative bias across characteristics <sup>2</sup>	22.63	21.07	32.18	26.77
Percentage of characteristics with significant bias	45.00	36.62	45.59	25.93
Median effect size <sup>3</sup>	0.26	0.22	0.39	0.38
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.63	2.10	0.37	0.25
Effect size for difference <sup>4</sup>	0.03	0.04	‡	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3INCHO (Satisfaction with quality of education at BA institution, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.77	6.71	9.74	20.23
Median percent relative bias across characteristics <sup>2</sup>	4.92	4.26	6.40	14.48
Percentage of characteristics with significant bias	51.22	37.84	38.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.29	0.12	0.20	3.43*
Effect size for difference <sup>4</sup>	0.01	#	#	‡
<b>B3INCSP (Spouse or domestic partner's income in 2017)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	11.03	9.70	14.05	29.79
Median percent relative bias across characteristics <sup>2</sup>	6.93	6.27	9.13	19.75
Percentage of characteristics with significant bias	47.56	42.67	34.21	12.28
Median effect size <sup>3</sup>	0.08	0.07	0.10	0.27
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.12	0.44	1.86	4.96
Effect size for difference <sup>4</sup>	0.01	#	0.02	0.06
<b>B3LNPAY (Current monthly student loan payment on federal and private student loans in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	21.42	20.33	23.30	35.23
Median percent relative bias across characteristics <sup>2</sup>	14.35	16.04	18.61	25.60
Percentage of characteristics with significant bias	50.00	49.35	44.74	18.64
Median effect size <sup>3</sup>	0.18	0.18	0.23	0.28
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.23	3.25	2.14	7.73
Effect size for difference <sup>4</sup>	0.03	0.03	0.02	0.09
<b>B3LNPAYPCT (Current monthly student loan payment as percent of monthly earnings in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.76	21.86	25.62	39.80
Median percent relative bias across characteristics <sup>2</sup>	14.54	16.28	21.03	27.77
Percentage of characteristics with significant bias	53.66	48.68	44.74	23.73
Median effect size <sup>3</sup>	0.20	0.20	0.26	0.36
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	13.61*	11.67*	16.58*	2.78
Effect size for difference <sup>4</sup>	0.08	0.08	0.09	0.02
<b>B3MAJCHO (Satisfaction with undergraduate major choice, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.80	6.77	9.72	20.05
Median percent relative bias across characteristics <sup>2</sup>	4.99	4.24	6.30	14.68
Percentage of characteristics with significant bias	52.44	43.24	38.67	15.52
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.52	0.63	0.28	2.69*
Effect size for difference <sup>4</sup>	0.01	0.01	#	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3MEMP (Months employed since bachelor's degree award date as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.26	6.56	10.48	16.51
Median percent relative bias across characteristics <sup>2</sup>	4.23	4.04	7.49	11.54
Percentage of characteristics with significant bias	50.00	36.49	40.00	8.62
Median effect size <sup>3</sup>	0.06	0.05	0.09	0.14
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.13	0.03	0.18	1.65*
Effect size for difference <sup>4</sup>	0.01	#	0.01	0.06
<b>B3MOLF (Months out of the labor force since bachelor's degree award date as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.27	6.67	10.49	16.77
Median percent relative bias across characteristics <sup>2</sup>	4.53	4.50	7.34	12.11
Percentage of characteristics with significant bias	40.24	30.67	38.16	8.62
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.80*	3.65*	3.67	5.04
Effect size for difference <sup>4</sup>	0.02	0.02	0.02	0.02
<b>B3MOMED (Mother's highest education level, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	9.46	7.74	10.83	23.07
Median percent relative bias across characteristics <sup>2</sup>	5.94	4.90	7.88	15.84
Percentage of characteristics with significant bias	50.00	39.19	39.73	20.34
Median effect size <sup>3</sup>	0.07	0.05	0.10	0.22
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	4.10*	4.66*	4.26*	1.22
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3MTGAMT (Monthly rent or mortgage payment, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.21	7.06	10.25	19.67
Median percent relative bias across characteristics <sup>2</sup>	4.80	4.56	6.82	12.97
Percentage of characteristics with significant bias	52.44	39.73	42.67	15.52
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.11	0.06	0.28	0.28
Effect size for difference <sup>4</sup>	#	#	#	#
<b>B3NDGCWK (Enrolled in non-degree coursework since bachelor's degree completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.70	6.55	9.59	20.10
Median percent relative bias across characteristics <sup>2</sup>	5.01	4.13	6.70	14.44
Percentage of characteristics with significant bias	54.88	43.06	43.84	15.79
Median effect size <sup>3</sup>	0.07	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.02*	1.65*	2.65*	1.83
Effect size for difference <sup>4</sup>	0.02	0.02	0.03	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3NEGOT (Ever negotiated salary/benefits as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.67	6.57	9.80	19.56
Median percent relative bias across characteristics <sup>2</sup>	5.10	4.44	6.46	13.70
Percentage of characteristics with significant bias	53.66	37.84	42.67	15.52
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.35	0.59	0.29	3.51
Effect size for difference <sup>4</sup>	#	0.01	#	0.04
<b>B3NMUN12 (Number of dependent children under age 12, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.24	5.67	8.28	16.41
Median percent relative bias across characteristics <sup>2</sup>	4.85	4.01	5.58	11.67
Percentage of characteristics with significant bias	50.00	38.89	38.57	14.29
Median effect size <sup>3</sup>	0.05	0.05	0.08	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	9.19*	7.90*	11.52*	17.53*
Effect size for difference <sup>4</sup>	0.07	0.06	0.08	0.11
<b>B3NUMNCD (Number of non-child dependents, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.98	6.85	9.82	20.37
Median percent relative bias across characteristics <sup>2</sup>	5.09	4.31	6.76	16.39
Percentage of characteristics with significant bias	53.66	43.24	41.33	17.54
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.18
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.57*	0.44	0.70	0.45
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3ONLIN (Ever enrolled in an entirely online degree program since bachelor's degree completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.73	10.07	15.83	35.79
Median percent relative bias across characteristics <sup>2</sup>	9.63	7.32	12.08	30.42
Percentage of characteristics with significant bias	47.56	36.84	42.11	17.24
Median effect size <sup>3</sup>	0.10	0.09	0.15	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	6.42*	6.77*	6.72*	11.06
Effect size for difference <sup>4</sup>	0.07	0.07	0.07	0.11
<b>B3PAREDUC (Highest education attained by either parent, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	9.56	7.91	10.84	23.24
Median percent relative bias across characteristics <sup>2</sup>	5.88	4.76	7.76	15.56
Percentage of characteristics with significant bias	52.44	42.67	39.73	22.03
Median effect size <sup>3</sup>	0.07	0.06	0.10	0.22
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.79*	3.56*	3.12*	13.23*
Effect size for difference <sup>4</sup>	0.06	‡	‡	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3PARIL (Household composition, as of B&amp;B:08/18 interview: Living with parents or in-laws)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.62	6.43	9.84	19.96
Median percent relative bias across characteristics <sup>2</sup>	5.02	4.10	6.73	14.05
Percentage of characteristics with significant bias	52.44	36.49	42.67	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.05	0.38	0.58	1.40*
Effect size for difference <sup>4</sup>	#	0.01	0.01	‡
<b>B3PCEMP (Percent of time employed from bachelor's degree award date to 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.26	6.56	10.48	16.51
Median percent relative bias across characteristics <sup>2</sup>	4.23	4.04	7.49	11.54
Percentage of characteristics with significant bias	50.00	36.49	40.00	8.62
Median effect size <sup>3</sup>	0.06	0.05	0.09	0.14
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.54*	0.35*	0.64*	2.05*
Effect size for difference <sup>4</sup>	0.02	0.01	0.03	0.07
<b>B3PCOLF (Percent of time out of the labor force from bachelor's degree award date to 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.27	6.67	10.49	16.77
Median percent relative bias across characteristics <sup>2</sup>	4.53	4.50	7.34	12.11
Percentage of characteristics with significant bias	40.24	30.67	38.16	8.62
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.52*	3.42*	3.32	4.65
Effect size for difference <sup>4</sup>	0.02	0.02	0.02	0.02
<b>B3PCUNEM (Percent of time unemployed from bachelor's degree award date to 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.27	6.67	10.49	16.77
Median percent relative bias across characteristics <sup>2</sup>	4.53	4.50	7.34	12.11
Percentage of characteristics with significant bias	40.24	30.67	38.16	8.62
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	13.50*	11.23*	14.27*	30.17*
Effect size for difference <sup>4</sup>	0.07	0.06	0.07	0.17
<b>B3PRIVCUM (Amount borrowed in private student loans, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.73	6.59	9.97	15.91
Median percent relative bias across characteristics <sup>2</sup>	4.16	4.16	7.19	10.88
Percentage of characteristics with significant bias	40.24	36.00	32.89	12.07
Median effect size <sup>3</sup>	0.06	0.05	0.06	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	18.98*	20.13*	16.52*	19.14*
Effect size for difference <sup>4</sup>	0.07	0.07	0.07	0.13

See notes at end of table.



**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Overall	Control of baccalaureate-granting institution		
		Public institution	Private nonprofit institution	Private for-profit institution
<b>B3PRIVDEFCUR (Currently in default on at least one private student loan, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.85	21.53	22.55	39.51
Median percent relative bias across characteristics <sup>2</sup>	17.61	18.09	16.32	28.79
Percentage of characteristics with significant bias	53.66	46.67	35.53	24.14
Median effect size <sup>3</sup>	0.18	0.18	0.20	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.15	0.30	1.07	1.61
Effect size for difference <sup>4</sup>	#	0.01	0.02	‡
<b>B3PRIVDFRCUR (Currently deferring at least one private student loan, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.85	21.53	22.55	39.51
Median percent relative bias across characteristics <sup>2</sup>	17.61	18.09	16.32	28.79
Percentage of characteristics with significant bias	53.66	46.67	35.53	24.14
Median effect size <sup>3</sup>	0.18	0.18	0.20	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.58	1.08	0.01	12.08
Effect size for difference <sup>4</sup>	0.02	0.02	#	0.13
<b>B3PRIVPAY (Current monthly payment on private student loans, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	27.63	27.17	28.00	47.50
Median percent relative bias across characteristics <sup>2</sup>	24.09	22.92	22.96	39.19
Percentage of characteristics with significant bias	54.88	50.67	38.16	25.86
Median effect size <sup>3</sup>	0.23	0.24	0.24	0.43
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	3.89	9.05*	1.18	11.19
Effect size for difference <sup>4</sup>	0.04	0.08	0.01	0.16
<b>B3PRIVPAYMISS (Ever missed a private student loan payment, self-reported as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	28.04	28.31	28.02	46.52
Median percent relative bias across characteristics <sup>2</sup>	24.94	25.22	23.20	37.69
Percentage of characteristics with significant bias	51.22	52.00	39.47	24.14
Median effect size <sup>3</sup>	0.22	0.24	0.26	0.42
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.38	2.36	1.90	4.48
Effect size for difference <sup>4</sup>	0.01	‡	‡	‡
<b>B3PRIVPAYMORE (Made private student loan prepayment within 12 months, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	28.04	28.31	28.05	46.52
Median percent relative bias across characteristics <sup>2</sup>	24.93	25.20	23.16	37.69
Percentage of characteristics with significant bias	51.22	52.00	39.47	24.14
Median effect size <sup>3</sup>	0.22	0.24	0.26	0.42
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.82	1.23	4.30	30.18
Effect size for difference <sup>4</sup>	0.04	0.02	0.06	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3PRIVRPMTCUR (Currently in repayment on at least one private student loan, self-reported in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.86	21.54	22.55	39.51
Median percent relative bias across characteristics <sup>2</sup>	17.62	18.11	16.32	28.79
Percentage of characteristics with significant bias	53.66	46.67	35.53	24.14
Median effect size <sup>3</sup>	0.18	0.18	0.20	0.37
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.49	0.69	3.36	6.12
Effect size for difference <sup>4</sup>	#	0.01	0.03	0.06
<b>B3REGTCHST (Regular classroom teacher status between BA completion and B&amp;B:08/18 interview, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.77	6.09	9.22	15.27
Median percent relative bias across characteristics <sup>2</sup>	4.64	3.88	6.18	12.89
Percentage of characteristics with significant bias	51.22	34.25	30.14	15.79
Median effect size <sup>3</sup>	0.05	0.05	0.07	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.28*	1.85*	0.36	0.88
Effect size for difference <sup>4</sup>	0.04	0.05	‡	‡
<b>B3RETEMP (Had an employer-based retirement account, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.01	6.86	9.85	21.27
Median percent relative bias across characteristics <sup>2</sup>	5.18	4.49	6.57	16.42
Percentage of characteristics with significant bias	53.66	36.49	41.33	17.24
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.09*	1.21	1.10	2.60
Effect size for difference <sup>4</sup>	0.01	0.01	0.01	0.03
<b>B3RETIRE (Had retirement account, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.10	7.26	10.07	22.25
Median percent relative bias across characteristics <sup>2</sup>	5.37	4.87	6.69	17.34
Percentage of characteristics with significant bias	53.66	34.67	40.79	15.52
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.22
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.06	0.93	1.43	2.90
Effect size for difference <sup>4</sup>	0.01	0.01	0.02	‡
<b>B3RETNON (Had a non-employer-based retirement account, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.04	7.20	10.07	22.23
Median percent relative bias across characteristics <sup>2</sup>	5.28	4.76	6.70	17.16
Percentage of characteristics with significant bias	53.66	38.67	40.79	17.24
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.22
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.62	0.08	1.36	1.12
Effect size for difference <sup>4</sup>	0.01	#	0.01	0.01

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3RPMTCUR (Currently in repayment on at least one federal or private student loan in 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	13.49	12.49	14.48	18.20
Median percent relative bias across characteristics <sup>2</sup>	9.69	9.17	9.91	14.25
Percentage of characteristics with significant bias	57.32	55.56	52.00	21.43
Median effect size <sup>3</sup>	0.10	0.09	0.13	0.15
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.37*	3.67*	0.54	5.68*
Effect size for difference <sup>4</sup>	0.02	0.04	0.01	0.06
<b>B3SELLPO (Result of sale of all major possessions, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.95	6.82	10.05	19.85
Median percent relative bias across characteristics <sup>2</sup>	5.29	4.34	6.28	14.15
Percentage of characteristics with significant bias	52.44	39.19	38.16	15.52
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.46	0.86*	1.70	2.51
Effect size for difference <sup>4</sup>	0.01	0.01	0.02	‡
<b>B3SPAMT (Spouse or domestic partner's student loan amount borrowed, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	12.09	10.09	15.31	36.92
Median percent relative bias across characteristics <sup>2</sup>	7.29	5.92	9.98	26.11
Percentage of characteristics with significant bias	43.90	36.49	27.63	14.04
Median effect size <sup>3</sup>	0.08	0.07	0.11	0.40
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.15	0.04	2.55	15.14
Effect size for difference <sup>4</sup>	0.01	#	0.01	0.08
<b>B3SPCOL (Spouse or domestic partner attended college or graduate school in 2018-19, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	10.41	9.22	13.30	29.14
Median percent relative bias across characteristics <sup>2</sup>	5.82	6.21	8.66	19.85
Percentage of characteristics with significant bias	48.78	36.49	37.33	12.28
Median effect size <sup>3</sup>	0.07	0.07	0.10	0.25
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.19	0.02	0.39*	1.60
Effect size for difference <sup>4</sup>	0.01	‡	‡	‡
<b>B3SEMP (Spouse or domestic partner employed in 2017)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	10.44	9.24	13.42	29.10
Median percent relative bias across characteristics <sup>2</sup>	5.20	5.82	8.56	19.77
Percentage of characteristics with significant bias	48.78	36.49	38.67	12.28
Median effect size <sup>3</sup>	0.07	0.07	0.10	0.25
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.01	0.33	0.97	1.90
Effect size for difference <sup>4</sup>	#	0.01	0.01	‡

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3SPLNPY (Spouse or domestic partner's monthly payment on student loans, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	22.49	19.49	26.07	61.46
Median percent relative bias across characteristics <sup>2</sup>	18.78	16.76	21.87	41.72
Percentage of characteristics with significant bias	51.22	36.36	40.79	24.14
Median effect size <sup>3</sup>	0.21	0.18	0.23	0.49
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	2.23	3.39	1.60	24.20
Effect size for difference <sup>4</sup>	0.02	0.03	0.01	0.40
<b>B3SPLV (Highest education attained by spouse or domestic partner, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	10.43	9.22	13.38	29.14
Median percent relative bias across characteristics <sup>2</sup>	5.73	6.19	8.57	19.85
Percentage of characteristics with significant bias	48.78	36.49	37.33	12.28
Median effect size <sup>3</sup>	0.07	0.07	0.10	0.25
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.65	1.57*	1.33	‡
Effect size for difference <sup>4</sup>	‡	‡	‡	‡
<b>B3SPODP (Household composition, as of B&amp;B:08/18 interview: Living with spouse or domestic partner)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.62	6.43	9.84	19.96
Median percent relative bias across characteristics <sup>2</sup>	5.02	4.10	6.73	14.05
Percentage of characteristics with significant bias	52.44	36.49	42.67	15.79
Median effect size <sup>3</sup>	0.06	0.05	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	1.26*	1.47*	0.89	0.53
Effect size for difference <sup>4</sup>	0.01	0.02	0.01	0.01
<b>B3SPOWE (Spouse or domestic partner's loan amount owed, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	18.08	14.79	21.79	50.04
Median percent relative bias across characteristics <sup>2</sup>	14.80	10.13	14.33	45.49
Percentage of characteristics with significant bias	52.44	37.84	40.79	28.07
Median effect size <sup>3</sup>	0.14	0.11	0.18	0.41
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.35	0.67	1.79	‡
Effect size for difference <sup>4</sup>	#	0.01	0.02	‡
<b>B3VLNTR (Volunteered in past 12 months, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.67	6.57	9.76	19.58
Median percent relative bias across characteristics <sup>2</sup>	4.70	4.45	5.77	14.49
Percentage of characteristics with significant bias	52.44	41.33	35.53	15.52
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.46	0.56	0.28	4.74
Effect size for difference <sup>4</sup>	#	0.01	#	0.05

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3VOTEREG (Registered to vote, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	8.05	6.99	9.87	20.39
Median percent relative bias across characteristics <sup>2</sup>	5.26	4.67	6.57	14.32
Percentage of characteristics with significant bias	54.88	44.59	38.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.07	0.20	0.01	0.82
Effect size for difference <sup>4</sup>	#	#	#	‡
<b>B3VTNEL (Voted in 2016 presidential election, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.97	6.91	9.86	20.37
Median percent relative bias across characteristics <sup>2</sup>	5.17	4.55	6.59	14.37
Percentage of characteristics with significant bias	53.66	44.59	38.67	15.79
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.41	0.63	0.33	1.24
Effect size for difference <sup>4</sup>	0.01	0.01	#	‡
<b>B3VYHRS (Number of hours volunteered in past 12 months, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.67	6.57	9.76	19.58
Median percent relative bias across characteristics <sup>2</sup>	4.70	4.45	5.77	14.49
Percentage of characteristics with significant bias	52.44	41.33	35.53	15.52
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.57	2.49	3.47	5.31
Effect size for difference <sup>4</sup>	#	0.01	0.01	0.02
<b>B3WORTHUG (Undergraduate education was worth the financial cost, as of B&amp;B:08/18 interview)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.77	6.73	9.73	20.14
Median percent relative bias across characteristics <sup>2</sup>	4.98	4.20	6.34	14.73
Percentage of characteristics with significant bias	51.22	39.19	38.67	17.24
Median effect size <sup>3</sup>	0.06	0.06	0.08	0.19
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	0.19	0.46	0.19	3.95
Effect size for difference <sup>4</sup>	#	0.01	#	0.04

See notes at end of table.

**Table K-41. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2018—Continued**

Variable	Control of baccalaureate-granting institution			
	Overall	Public institution	Private nonprofit institution	Private for-profit institution
<b>B3YRSCCAR (Years in current career as of 2018)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	9.81	7.98	11.09	25.67
Median percent relative bias across characteristics <sup>2</sup>	6.32	5.30	7.76	17.60
Percentage of characteristics with significant bias	45.12	31.94	38.36	14.04
Median effect size <sup>3</sup>	0.07	0.06	0.10	0.21
After imputation				
Difference between pre- and post-imputation means <sup>3</sup>	5.30*	5.00*	4.75*	15.89*
Effect size for difference <sup>4</sup>	0.09	0.09	0.07	0.22

† Not applicable.

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ . The difference between the pre- and post-imputation means (using the student analysis weight) is significant at the 0.05 level. For categorical variables, at least one category difference is significant.<sup>1</sup> *Before imputation* calculations use the weighted differences between respondent and eligible-sample means, using the B&B:08/18 base weight.<sup>2</sup> *Percent relative bias* is calculated as the ratio of estimated bias to the weighted eligible-sample mean, using the B&B:08/18 base weight, times 100.<sup>3</sup> *Effect size* for categorical variables is calculated as the square root of the weighted sum over categories of the squared differences over eligible-sample means.<sup>3</sup> For categorical variables, the *Difference between pre- and post-imputation means* is the size-weighted average percentage difference across categories pre- and post-imputation. "Size" refers to the unweighted count of respondents in a category.<sup>4</sup> For categorical variables, the *Effect size for difference* is calculated as the square root of the sum over categories of the squared differences over weighted post-imputation means, using WTG000. For continuous variables, the *Effect size for difference* is calculated as the weighted difference over the post-imputation standard deviation, using WTG000.

NOTE: Variables and characteristics that did not meet reporting standards were excluded from calculation of summary statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2008/18 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

## Appendix L. Design Effects

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**Table L-1. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	73,916.90	703.18	472.36	1.49	2.22
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	23.21	0.31	0.35	0.88	0.78
Sex assigned at birth: Female	B3SEX=2	57.44	0.23	0.41	0.57	0.32
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.54	0.57	0.36	1.57	2.47
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	54.78	0.59	0.41	1.43	2.05
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.20	0.66	0.41	1.61	2.60
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,983.94	467.97	350.19	1.34	1.79
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.55	0.49	0.36	1.34	1.80
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	26.63	0.60	0.36	1.64	2.67
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	86.63	0.32	0.28	1.15	1.33
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.77	0.41	0.28	1.48	2.19
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	61.59	0.64	0.40	1.58	2.51
Race/ethnicity (with multiple): White	RACE=1	72.81	0.67	0.37	1.82	3.32
Age, as of 12/31/2018	B3age (mean)	36.00	0.09	0.06	1.68	2.83
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	427.00	7.84	5.93	1.32	1.75
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.45	0.44	0.28	1.54	2.37
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	40.59	0.59	0.41	1.44	2.08
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.34	0.25	0.17	1.47	2.17
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.34	0.54	0.37	1.48	2.18
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.08	0.02	0.02	1.54	2.38
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	84.69	0.27	0.17	1.58	2.50
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.49	0.46	0.34	1.34	1.81
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	59.48	0.99	0.67	1.48	2.18
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	15.06	0.41	0.30	1.40	1.97
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	11.60	0.35	0.26	1.33	1.78
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLNL=1	32.02	0.57	0.39	1.48	2.18

See notes at end of table.

**Table L-1. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.87	0.42	0.34	1.25	1.57
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.90	0.01	0.01	1.49	2.23
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	69.47	0.52	0.38	1.38	1.90
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.05	0.31	0.20	1.56	2.44
Summary statistics						
Minimum		†	†	†	0.08	0.01
25th percentile		†	†	†	1.34	1.79
Median		†	†	†	1.48	2.18
75th percentile		†	†	†	1.56	2.44
Maximum		†	†	†	1.82	3.32

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12<sup>th</sup> grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-2. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members at public institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	72,378.95	969.68	590.90	1.64	2.69
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	20.31	0.51	0.44	1.18	1.39
Sex assigned at birth: Female	B3SEX=2	55.91	0.50	0.54	0.93	0.86
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.41	0.69	0.47	1.48	2.19
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	55.10	0.76	0.54	1.41	1.98
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	43.67	0.85	0.54	1.57	2.48
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,263.11	593.82	452.47	1.31	1.72
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.91	0.64	0.48	1.33	1.77
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	28.47	0.74	0.49	1.51	2.27
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.66	0.43	0.38	1.14	1.30
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.54	0.55	0.36	1.54	2.38
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	63.82	0.74	0.52	1.43	2.04
Race/ethnicity (with multiple): White	RACE=1	73.01	0.86	0.48	1.79	3.19
Age, as of 12/31/2018	B3age (mean)	35.43	0.10	0.06	1.53	2.33
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	393.43	10.24	7.75	1.32	1.74
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.83	0.56	0.37	1.52	2.30
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.66	0.72	0.53	1.36	1.84
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	3.38	0.29	0.20	1.47	2.16
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	74.07	0.67	0.47	1.41	1.99
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.08	0.03	0.02	1.54	2.36
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.37	0.33	0.22	1.49	2.22
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.31	0.57	0.45	1.26	1.59
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	59.19	1.33	0.86	1.54	2.37
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	14.06	0.49	0.38	1.31	1.72
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	9.87	0.46	0.32	1.43	2.03
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	27.29	0.70	0.48	1.46	2.12

See notes at end of table.

**Table L-2. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members at public institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.70	0.58	0.45	1.30	1.70
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.02	0.01	1.49	2.21
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	71.22	0.68	0.49	1.38	1.91
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.66	0.34	0.24	1.41	2.00
Summary statistics						
Minimum		†	†	†	0.93	0.86
25th percentile		†	†	†	1.32	1.74
Median		†	†	†	1.43	2.04
75th percentile		†	†	†	1.52	2.30
Maximum		†	†	†	1.79	3.19

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12<sup>th</sup> grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-3. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	77,725.17	1,311.66	848.99	1.54	2.39
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	25.58	1.03	0.59	1.74	3.01
Sex assigned at birth: Female	B3SEX=2	60.07	0.89	0.66	1.35	1.82
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.13	0.98	0.60	1.64	2.69
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	56.53	1.14	0.67	1.71	2.91
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	37.57	1.08	0.66	1.64	2.70
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,990.14	875.36	605.31	1.45	2.09
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	27.58	1.00	0.60	1.66	2.74
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	24.49	0.91	0.58	1.56	2.43
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.08	0.60	0.45	1.32	1.74
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	13.63	0.77	0.46	1.65	2.72
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	57.97	1.14	0.67	1.71	2.92
Race/ethnicity (with multiple): White	RACE=1	75.01	0.91	0.59	1.55	2.39
Age, as of 12/31/2018	B3age (mean)	35.94	0.19	0.10	1.91	3.64
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	468.85	13.86	10.11	1.37	1.88
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	87.38	0.67	0.45	1.48	2.20
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	40.30	1.04	0.66	1.57	2.46
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.72	0.41	0.29	1.43	2.04
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.02	0.97	0.61	1.59	2.54
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.17	0.04	0.03	1.53	2.33
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.54	0.46	0.29	1.60	2.56
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	19.73	0.73	0.54	1.36	1.84
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	53.15	1.66	1.07	1.54	2.39
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	15.84	0.70	0.49	1.42	2.03
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	12.21	0.63	0.44	1.43	2.05
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	38.75	1.10	0.66	1.67	2.80

See notes at end of table.



**Table L-3. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.22	0.72	0.55	1.30	1.70
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.03	0.02	1.68	2.82
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	67.79	0.88	0.63	1.39	1.93
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	92.78	0.59	0.35	1.68	2.81
Summary statistics						
Minimum		†	†	†	1.30	1.70
25th percentile		†	†	†	1.43	2.04
Median		†	†	†	1.55	2.41
75th percentile		†	†	†	1.66	2.74
Maximum		†	†	†	1.91	3.64

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-4. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members at private for-profit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	68,101.69	3,376.47	1,890.67	1.79	3.19
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	46.13	3.70	1.89	1.96	3.82
Sex assigned at birth: Female	B3SEX=2	59.82	3.34	1.86	1.79	3.21
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	72.73	2.94	1.69	1.74	3.03
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	37.89	3.06	1.84	1.66	2.77
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	33.00	3.13	1.78	1.75	3.07
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	37,319.42	2,058.37	1,187.18	1.73	3.01
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	14.29	2.25	1.33	1.70	2.88
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	16.51	2.52	1.41	1.79	3.20
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	96.84	1.00	0.66	1.51	2.27
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	9.81	1.87	1.13	1.65	2.73
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	56.67	3.52	1.88	1.87	3.50
Race/ethnicity (with multiple): White	RACE=1	54.43	3.66	1.89	1.94	3.74
Age, as of 12/31/2018	B3age (mean)	44.17	0.74	0.37	2.01	4.05
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	485.27	40.40	20.56	1.96	3.86
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	74.61	2.54	1.65	1.54	2.36
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	28.08	3.12	1.71	1.83	3.33
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	14.76	2.10	1.35	1.56	2.44
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.66	2.54	1.69	1.50	2.26
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.43	0.10	0.06	1.75	3.05
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.50	1.55	0.90	1.72	2.95
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.61	2.41	1.59	1.52	2.31
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	99.46	5.84	3.46	1.69	2.85
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	23.34	2.52	1.61	1.57	2.46
Ever defaulted on student loans, as of 2018	B3EVREDEF=1	30.97	3.16	1.76	1.80	3.23
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	49.06	3.06	1.90	1.61	2.60

See notes at end of table.

**Table L-4. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for all B&B:08-eligible sample members at private for-profit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	7.01	1.53	0.97	1.58	2.49
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.07	0.04	1.50	2.25
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	57.52	2.84	1.88	1.51	2.29
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.79	1.13	0.84	1.35	1.81
Summary statistics						
Minimum		†	†	†	1.35	1.81
25th percentile		†	†	†	1.56	2.44
Median		†	†	†	1.71	2.91
75th percentile		†	†	†	1.79	3.21
Maximum		†	†	†	2.01	4.05

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-5. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for White B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	75,219.17	802.74	556.49	1.44	2.08
NPSAS institution control: Public	CONTROL=1	63.03	0.39	0.47	0.83	0.69
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	22.03	0.45	0.40	1.12	1.26
Sex assigned at birth: Female	B3SEX=2	56.37	0.44	0.48	0.91	0.83
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	76.01	0.63	0.42	1.52	2.30
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	52.69	0.64	0.49	1.32	1.75
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	44.51	0.74	0.48	1.52	2.32
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,672.87	530.17	383.49	1.38	1.91
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.55	0.61	0.43	1.42	2.01
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	28.92	0.67	0.44	1.52	2.30
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.66	0.39	0.34	1.16	1.34
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	13.72	0.48	0.33	1.44	2.08
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	65.92	0.72	0.46	1.57	2.46
Age, as of 12/31/2018	B3age (mean)	35.65	0.11	0.06	1.69	2.87
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	430.05	9.29	6.95	1.34	1.79
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	88.80	0.42	0.31	1.35	1.83
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	43.24	0.63	0.48	1.31	1.71
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	3.95	0.27	0.19	1.41	1.98
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	74.18	0.62	0.43	1.45	2.09
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.14	0.03	0.02	1.41	1.99
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.18	0.29	0.19	1.51	2.27
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	20.73	0.55	0.39	1.40	1.97
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	51.41	1.06	0.76	1.39	1.93
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	13.24	0.46	0.33	1.38	1.91
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	8.83	0.39	0.28	1.41	1.99
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	30.93	0.67	0.45	1.50	2.25

See notes at end of table.

**Table L-5. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for White B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.60	0.49	0.40	1.22	1.49
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.02	0.01	1.49	2.22
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.86	0.62	0.43	1.44	2.07
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.17	0.34	0.23	1.47	2.17
Summary statistics						
Minimum		†	†	†	0.83	0.69
25th percentile		†	†	†	1.34	1.79
Median		†	†	†	1.41	1.99
75th percentile		†	†	†	1.49	2.22
Maximum		†	†	†	1.69	2.87

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-6. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Black B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	59,340.18	1,604.09	1,037.35	1.55	2.39
NPSAS institution control: Public	CONTROL=1	60.53	2.19	1.33	1.64	2.69
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	33.79	1.79	1.29	1.39	1.93
Sex assigned at birth: Female	B3SEX=2	66.71	2.21	1.29	1.72	2.95
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.24	1.83	1.27	1.44	2.07
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	64.12	2.22	1.31	1.70	2.88
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	25.31	1.89	1.19	1.59	2.54
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	47,788.44	1,792.49	1,482.55	1.21	1.46
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	29.99	1.72	1.25	1.38	1.89
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	15.74	1.60	0.99	1.61	2.59
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	90.07	1.16	0.82	1.42	2.02
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.51	1.32	0.84	1.58	2.48
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	44.85	2.26	1.36	1.66	2.77
Age, as of 12/31/2018	B3age (mean)	39.39	0.41	0.25	1.61	2.60
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	440.18	29.94	18.87	1.59	2.52
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	70.74	1.89	1.24	1.52	2.32
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	28.42	1.91	1.23	1.55	2.41
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	7.14	1.11	0.70	1.58	2.51
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	71.12	1.71	1.24	1.38	1.91
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.84	0.08	0.05	1.72	2.95
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	82.22	0.99	0.63	1.58	2.51
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	31.92	2.05	1.27	1.62	2.61
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	111.35	3.12	2.12	1.47	2.17
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	30.05	2.00	1.25	1.60	2.57
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	29.56	1.90	1.24	1.53	2.33
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	41.76	2.11	1.35	1.57	2.47
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	19.00	1.74	1.07	1.63	2.65

See notes at end of table.

**Table L-6. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Black B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.05	0.03	1.50	2.26
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	49.00	2.10	1.36	1.54	2.37
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.30	0.81	0.58	1.40	1.95
Summary statistics						
Minimum		†	†	†	1.21	1.46
25th percentile		†	†	†	1.47	2.17
Median		†	†	†	1.57	2.48
75th percentile		†	†	†	1.61	2.60
Maximum		†	†	†	1.72	2.95

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K–12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-7. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Hispanic B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	63,903.81	1,763.99	1,184.92	1.49	2.22
NPSAS institution control: Public	CONTROL=1	61.32	2.03	1.33	1.52	2.31
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	22.24	1.61	1.14	1.41	2.00
Sex assigned at birth: Female	B3SEX=2	63.12	2.00	1.32	1.51	2.29
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	69.71	1.82	1.26	1.45	2.10
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	56.85	2.06	1.36	1.52	2.30
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	36.72	1.95	1.32	1.47	2.18
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,381.36	1,771.59	1,186.83	1.49	2.23
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	24.24	1.64	1.17	1.40	1.96
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	18.73	1.64	1.07	1.54	2.36
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.80	1.21	0.96	1.27	1.60
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.59	1.28	0.84	1.52	2.31
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	51.84	2.25	1.37	1.64	2.70
Age, as of 12/31/2018	B3age (mean)	36.68	0.28	0.18	1.57	2.45
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	385.61	29.97	18.05	1.66	2.76
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	81.40	1.79	1.07	1.68	2.83
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	30.46	1.90	1.26	1.51	2.28
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.71	0.88	0.58	1.52	2.32
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.44	1.84	1.26	1.46	2.12
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.91	0.08	0.05	1.51	2.27
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	80.90	1.00	0.65	1.55	2.40
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	20.79	1.59	1.11	1.43	2.04
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	78.34	3.30	2.22	1.48	2.20
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	16.96	1.51	1.03	1.47	2.16
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	19.47	1.52	1.08	1.40	1.97
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	34.38	1.94	1.30	1.49	2.22

See notes at end of table.



**Table L-7. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Hispanic B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	22.78	1.44	1.15	1.25	1.57
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.88	0.05	0.03	1.56	2.45
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	60.07	1.93	1.34	1.44	2.06
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.02	1.07	0.70	1.54	2.36
Summary statistics						
Minimum		†	†	†	1.25	1.57
25th percentile		†	†	†	1.45	2.10
Median		†	†	†	1.50	2.25
75th percentile		†	†	†	1.54	2.36
Maximum		†	†	†	1.68	2.83

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-8. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Asian B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	93,634.32	4,513.76	2,676.13	1.69	2.84
NPSAS institution control: Public	CONTROL=1	69.58	2.34	1.50	1.56	2.42
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	23.49	2.47	1.38	1.78	3.18
Sex assigned at birth: Female	B3SEX=2	48.71	2.59	1.63	1.59	2.51
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.86	2.50	1.42	1.77	3.12
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	60.29	2.48	1.60	1.55	2.41
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	31.10	2.57	1.51	1.70	2.89
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,576.66	2,075.89	1,616.72	1.28	1.65
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	25.39	2.17	1.42	1.53	2.33
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	26.05	2.45	1.43	1.71	2.93
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	93.71	1.12	0.79	1.42	2.01
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	11.09	1.69	1.03	1.64	2.70
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	50.66	2.54	1.63	1.56	2.43
Age, as of 12/31/2018	B3age (mean)	34.20	0.27	0.14	1.93	3.73
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	484.42	41.08	28.00	1.47	2.15
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.03	1.98	1.02	1.94	3.77
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	42.59	2.87	1.62	1.77	3.15
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	2.05	0.76	0.46	1.64	2.70
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.32	2.42	1.44	1.67	2.80
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.93	0.08	0.06	1.49	2.22
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	76.92	1.35	0.76	1.76	3.11
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	15.43	1.81	1.18	1.53	2.35
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	41.45	3.73	2.32	1.60	2.57
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	10.31	1.56	0.99	1.57	2.46
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	4.45	1.02	0.67	1.51	2.29
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	26.68	2.23	1.44	1.54	2.38

See notes at end of table.

**Table L-8. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Asian B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	12.49	1.53	1.08	1.42	2.02
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.51	0.05	0.03	1.66	2.76
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.64	2.42	1.46	1.66	2.75
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.18	1.42	0.76	1.85	3.43
Summary statistics						
Minimum		†	†	†	1.28	1.65
25th percentile		†	†	†	1.53	2.35
Median		†	†	†	1.62	2.64
75th percentile		†	†	†	1.71	2.93
Maximum		†	†	†	1.94	3.77

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-9. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for B&B:08-eligible sample members of another race: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	70,645.08	3,544.85	2,481.51	1.43	2.04
NPSAS institution control: Public	CONTROL=1	56.63	3.20	2.25	1.42	2.02
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	24.71	3.04	1.96	1.55	2.42
Sex assigned at birth: Female	B3SEX=2	57.89	3.76	2.24	1.68	2.82
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	71.14	3.27	2.06	1.59	2.54
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	60.91	3.80	2.21	1.72	2.96
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.02	3.48	2.22	1.57	2.45
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,333.57	2,200.98	1,876.03	1.17	1.38
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.46	3.15	2.00	1.57	2.48
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	27.14	3.14	2.02	1.56	2.43
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	88.50	2.07	1.45	1.43	2.04
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	7.02	1.69	1.16	1.46	2.12
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	56.64	3.44	2.25	1.53	2.35
Age, as of 12/31/2018	B3age (mean)	36.53	0.47	0.32	1.45	2.12
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	387.37	44.64	33.38	1.34	1.79
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	83.86	2.41	1.67	1.44	2.08
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	37.96	3.45	2.20	1.57	2.45
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	9.04	1.97	1.30	1.51	2.29
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	71.58	3.11	2.05	1.52	2.30
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.14	0.12	0.08	1.45	2.10
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.38	1.38	0.98	1.40	1.96
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	25.10	3.03	1.97	1.54	2.38
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.07	5.17	3.30	1.57	2.45
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_IN C=1	20.72	2.56	1.84	1.39	1.94
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	18.39	2.45	1.76	1.40	1.95
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	34.78	3.18	2.16	1.47	2.17

See notes at end of table.

**Table L-9. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for B&B:08-eligible sample members of another race: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	19.97	2.69	1.81	1.48	2.20
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.90	0.09	0.05	1.63	2.65
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	67.36	2.86	2.13	1.35	1.81
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	90.93	2.07	1.30	1.59	2.52
Summary statistics						
Minimum		†	†	†	1.17	1.38
25th percentile		†	†	†	1.43	2.04
Median		†	†	†	1.50	2.25
75th percentile		†	†	†	1.57	2.45
Maximum		†	†	†	1.72	2.96

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian. BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-10. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Male B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	86,393.30	1,130.11	817.03	1.38	1.91
NPSAS institution control: Public	CONTROL=1	65.12	0.65	0.61	1.07	1.14
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	27.97	0.72	0.58	1.25	1.57
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	82.68	0.71	0.49	1.47	2.15
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	51.51	1.03	0.64	1.60	2.57
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.03	0.97	0.63	1.54	2.37
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,636.96	767.51	555.29	1.38	1.91
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	24.48	0.84	0.55	1.53	2.33
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	28.00	0.96	0.58	1.66	2.76
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	91.52	0.52	0.36	1.44	2.08
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	15.81	0.65	0.47	1.39	1.94
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	60.43	0.94	0.63	1.49	2.23
Race/ethnicity (with multiple): White	RACE=1	74.64	0.95	0.56	1.71	2.92
Age, as of 12/31/2018	B3age (mean)	35.88	0.13	0.08	1.55	2.40
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	437.83	14.66	10.08	1.45	2.12
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.46	0.63	0.39	1.59	2.53
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	44.53	0.88	0.64	1.38	1.91
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	7.64	0.47	0.34	1.38	1.91
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	78.79	0.81	0.53	1.55	2.40
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.97	0.04	0.02	1.64	2.68
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.10	0.41	0.25	1.64	2.68
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	17.32	0.68	0.49	1.41	1.99
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	51.97	1.50	1.02	1.48	2.18
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	11.74	0.60	0.41	1.45	2.10
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	9.99	0.56	0.39	1.45	2.10

See notes at end of table.

**Table L-10. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Male B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	29.84	0.90	0.59	1.53	2.34
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	14.60	0.65	0.45	1.44	2.07
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.85	0.02	0.01	1.40	1.96
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	73.72	0.85	0.57	1.50	2.25
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.35	0.46	0.30	1.54	2.36
Summary statistics						
Minimum		†	†	†	1.07	1.14
25th percentile		†	†	†	1.40	1.96
Median		†	†	†	1.47	2.16
75th percentile		†	†	†	1.55	2.40
Maximum		†	†	†	1.71	2.92

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-11. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Female B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	63,972.92	797.50	520.18	1.53	2.35
NPSAS institution control: Public	CONTROL=1	61.18	0.49	0.53	0.93	0.87
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	19.68	0.56	0.43	1.30	1.69
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.51	0.78	0.50	1.55	2.41
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	57.19	0.75	0.53	1.41	2.00
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	42.06	0.84	0.53	1.58	2.51
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,722.77	611.73	449.62	1.36	1.85
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	28.09	0.64	0.48	1.32	1.73
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	25.61	0.67	0.47	1.43	2.04
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	83.02	0.50	0.40	1.24	1.54
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.52	0.51	0.33	1.53	2.35
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	62.45	0.85	0.52	1.62	2.64
Race/ethnicity (with multiple): White	RACE=1	71.45	0.82	0.49	1.69	2.87
Age, as of 12/31/2018	B3age (mean)	36.08	0.13	0.08	1.72	2.96
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	420.55	9.15	7.31	1.25	1.57
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.21	0.55	0.39	1.39	1.93
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	37.68	0.78	0.52	1.50	2.25
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	1.89	0.22	0.15	1.51	2.28
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.31	0.72	0.50	1.44	2.09
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.16	0.03	0.02	1.29	1.67
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.64	0.37	0.24	1.57	2.45
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	24.57	0.60	0.46	1.29	1.66
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	64.59	1.33	0.88	1.50	2.26
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.52	0.59	0.41	1.44	2.08
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	12.79	0.54	0.36	1.51	2.27

See notes at end of table.



**Table L-11. Design effects for selected variable values using analysis weight WTG000 (B&B:08/18 response) for Female B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.63	0.73	0.51	1.44	2.08
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	25.51	0.63	0.47	1.35	1.81
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.02	0.01	1.51	2.27
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	66.33	0.70	0.51	1.38	1.91
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.84	0.39	0.26	1.49	2.22
Summary statistics						
Minimum		†	†	†	0.93	0.87
25th percentile		†	†	†	1.35	1.81
Median		†	†	†	1.44	2.08
75th percentile		†	†	†	1.53	2.35
Maximum		†	†	†	1.72	2.96

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-12. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	73,562.59	744.70	496.04	1.50	2.25
NPSAS institution control: Public	CONTROL=1	62.86	#	0.42	#	#
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	23.36	0.32	0.37	0.88	0.77
Sex assigned at birth: Female	B3SEX=2	57.41	0.23	0.43	0.54	0.29
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.12	0.60	0.38	1.58	2.50
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	54.80	0.65	0.43	1.50	2.26
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.10	0.68	0.43	1.59	2.53
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,883.76	460.77	364.82	1.26	1.60
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	27.09	0.51	0.39	1.33	1.76
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	26.80	0.60	0.38	1.57	2.47
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.13	0.35	0.29	1.21	1.46
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.62	0.41	0.29	1.43	2.06
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	62.41	0.70	0.42	1.66	2.74
Race/ethnicity (with multiple): White	RACE=1	72.94	0.68	0.39	1.76	3.11
Age, as of 12/31/2018	B3age (mean)	36.07	0.11	0.06	1.82	3.31
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	423.75	8.08	6.12	1.32	1.74
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.70	0.43	0.29	1.44	2.08
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non- employer-based retirement accounts	B3RETIRE=3	40.68	0.64	0.43	1.50	2.25
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	4.33	0.25	0.18	1.40	1.95
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.01	0.54	0.39	1.41	2.00
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.23	0.03	0.02	1.59	2.53
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	84.83	0.29	0.18	1.59	2.52
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.75	0.49	0.36	1.35	1.83
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	60.22	1.04	0.71	1.47	2.16
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.24	0.45	0.31	1.43	2.05
Ever defaulted on student loans, as of 2018	B3EVREDEF=1	11.70	0.39	0.28	1.40	1.95

See notes at end of table.

**Table L-12. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	31.84	0.56	0.40	1.38	1.90
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.14	0.43	0.35	1.24	1.53
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.89	0.01	0.01	1.45	2.09
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	69.62	0.55	0.40	1.37	1.88
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.11	0.31	0.20	1.53	2.35
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.33	1.76
Median		†	†	†	1.43	2.06
75th percentile		†	†	†	1.57	2.47
Maximum		†	†	†	1.82	3.31

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-13. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members at public institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	72,168.60	993.93	621.89	1.60	2.55
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	20.30	0.51	0.46	1.12	1.26
Sex assigned at birth: Female	B3SEX=2	55.99	0.54	0.56	0.95	0.90
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.77	0.73	0.49	1.47	2.16
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	55.15	0.86	0.57	1.51	2.29
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	43.54	0.88	0.56	1.57	2.45
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,334.48	615.41	474.01	1.30	1.69
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	27.41	0.71	0.51	1.40	1.96
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	28.41	0.77	0.51	1.50	2.25
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	86.07	0.47	0.39	1.18	1.40
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.67	0.56	0.38	1.48	2.18
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	64.41	0.81	0.54	1.48	2.19
Race/ethnicity (with multiple): White	RACE=1	73.02	0.90	0.51	1.78	3.16
Age, as of 12/31/2018	B3age (mean)	35.46	0.11	0.07	1.63	2.64
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	389.65	10.65	8.01	1.33	1.77
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.89	0.58	0.38	1.52	2.31
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.87	0.76	0.56	1.36	1.84
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	3.34	0.29	0.20	1.42	2.01
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.54	0.68	0.50	1.35	1.81
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.22	0.03	0.02	1.58	2.49
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.44	0.33	0.23	1.43	2.05
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.60	0.61	0.48	1.28	1.63
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	60.23	1.43	0.91	1.57	2.47
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	14.34	0.53	0.40	1.32	1.74
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	10.02	0.49	0.34	1.43	2.05

See notes at end of table.

**Table L-13. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members at public institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	27.39	0.70	0.51	1.38	1.91
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.13	0.60	0.46	1.30	1.68
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.92	0.02	0.01	1.44	2.08
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	71.41	0.68	0.51	1.33	1.76
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.54	0.35	0.26	1.35	1.82
Summary statistics						
Minimum		†	†	†	0.95	0.90
25th percentile		†	†	†	1.33	1.76
Median		†	†	†	1.43	2.03
75th percentile		†	†	†	1.51	2.29
Maximum		†	†	†	1.78	3.16

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-14. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	77,100.04	1,373.44	891.80	1.54	2.37
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	26.02	1.09	0.62	1.75	3.05
Sex assigned at birth: Female	B3SEX=2	59.70	0.96	0.70	1.37	1.88
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	72.93	0.98	0.63	1.55	2.39
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	56.71	1.19	0.71	1.68	2.84
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	37.70	1.12	0.69	1.62	2.62
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,608.26	874.73	624.25	1.40	1.96
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	28.30	1.04	0.64	1.61	2.61
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	25.21	0.94	0.62	1.53	2.33
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.76	0.63	0.47	1.36	1.84
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	13.22	0.79	0.48	1.64	2.68
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	58.94	1.17	0.70	1.67	2.78
Race/ethnicity (with multiple): White	RACE=1	75.47	0.92	0.61	1.50	2.26
Age, as of 12/31/2018	B3age (mean)	36.07	0.21	0.11	2.00	3.98
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	472.71	14.70	10.43	1.41	1.99
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	87.97	0.65	0.46	1.41	1.99
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	40.03	1.09	0.70	1.56	2.43
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.85	0.43	0.31	1.40	1.96
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.13	0.90	0.64	1.42	2.00
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.34	0.04	0.03	1.55	2.40
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.76	0.48	0.30	1.59	2.51
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	19.88	0.80	0.57	1.40	1.97
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	53.69	1.76	1.15	1.54	2.36
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.60	0.72	0.52	1.39	1.93
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	12.15	0.66	0.47	1.43	2.04

See notes at end of table.

**Table L-14. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	38.07	1.04	0.69	1.50	2.24
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.10	0.75	0.57	1.32	1.75
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.03	0.02	1.66	2.76
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	67.76	0.92	0.67	1.38	1.90
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.29	0.60	0.36	1.69	2.86
Summary statistics						
Minimum		†	†	†	1.32	1.75
25th percentile		†	†	†	1.40	1.97
Median		†	†	†	1.53	2.35
75th percentile		†	†	†	1.62	2.62
Maximum		†	†	†	2.00	3.98

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-15. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members at private for-profit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	67,548.89	3,215.49	1,880.91	1.71	2.92
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	46.24	3.86	2.02	1.91	3.64
Sex assigned at birth: Female	B3SEX=2	60.56	3.12	1.98	1.58	2.48
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.56	3.14	1.79	1.76	3.09
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	36.51	3.17	1.95	1.63	2.64
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	31.73	3.03	1.89	1.60	2.57
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	36,867.88	1,870.84	1,240.57	1.51	2.27
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	14.10	2.41	1.41	1.71	2.93
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	15.94	2.65	1.48	1.79	3.19
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	97.23	0.94	0.66	1.41	1.99
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	7.60	1.74	1.07	1.62	2.63
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	59.62	3.71	1.99	1.87	3.48
Race/ethnicity (with multiple): White	RACE=1	54.02	3.77	2.02	1.87	3.48
Age, as of 12/31/2018	B3age (mean)	44.42	0.76	0.40	1.91	3.64
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	459.47	35.29	20.96	1.68	2.83
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	75.09	2.54	1.75	1.45	2.10
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non- employer-based retirement accounts	B3RETIRE=3	28.97	3.25	1.84	1.77	3.12
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	14.29	1.93	1.42	1.36	1.85
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.02	3.12	1.82	1.72	2.95
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.56	0.12	0.06	1.94	3.74
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.93	1.86	0.98	1.90	3.60
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	23.33	2.56	1.71	1.49	2.23
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	98.59	6.45	3.72	1.74	3.02
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	24.96	2.53	1.75	1.44	2.08
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	31.52	3.19	1.88	1.69	2.87

See notes at end of table.



**Table L-15. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for all B&B:08-eligible sample members at private for-profit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	48.58	3.37	2.03	1.66	2.76
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	6.92	1.54	1.03	1.50	2.24
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.91	0.06	0.05	1.41	1.99
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	58.23	2.99	2.00	1.50	2.24
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.10	1.22	0.96	1.28	1.64
Summary statistics						
Minimum		†	†	†	1.28	1.64
25th percentile		†	†	†	1.50	2.24
Median		†	†	†	1.67	2.80
75th percentile		†	†	†	1.77	3.12
Maximum		†	†	†	1.94	3.74

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-16. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for White B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	75,268.94	868.48	593.78	1.46	2.14
NPSAS institution control: Public	CONTROL=1	62.92	0.42	0.49	0.85	0.72
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	22.16	0.48	0.42	1.14	1.31
Sex assigned at birth: Female	B3SEX=2	56.38	0.49	0.51	0.97	0.93
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.62	0.63	0.44	1.44	2.07
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	52.86	0.73	0.51	1.43	2.05
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	44.21	0.77	0.51	1.52	2.30
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,769.46	554.54	400.29	1.39	1.92
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	27.11	0.63	0.45	1.39	1.93
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	29.12	0.66	0.46	1.43	2.03
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	86.16	0.45	0.35	1.27	1.61
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	13.55	0.49	0.35	1.39	1.93
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	66.70	0.76	0.48	1.58	2.51
Age, as of 12/31/2018	B3age (mean)	35.73	0.13	0.07	1.86	3.45
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	434.13	10.38	7.36	1.41	1.99
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	88.99	0.44	0.32	1.38	1.89
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non- employer-based retirement accounts	B3RETIRE=3	43.56	0.72	0.51	1.42	2.02
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	3.96	0.28	0.20	1.40	1.97
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.92	0.59	0.45	1.33	1.76
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.29	0.03	0.02	1.47	2.16
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.46	0.30	0.20	1.50	2.25
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.19	0.57	0.42	1.37	1.87
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.44	1.20	0.81	1.48	2.18
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	13.47	0.50	0.35	1.45	2.10
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	8.87	0.44	0.29	1.52	2.30

See notes at end of table.

**Table L-16. Design effects for selected variables using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for White B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	30.83	0.68	0.47	1.44	2.09
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.05	0.53	0.42	1.27	1.61
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.02	0.01	1.50	2.24
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	73.00	0.61	0.45	1.36	1.85
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.06	0.36	0.24	1.51	2.27
Summary statistics						
Minimum		†	†	†	0.85	0.72
25th percentile		†	†	†	1.37	1.87
Median		†	†	†	1.42	2.03
75th percentile		†	†	†	1.48	2.18
Maximum		†	†	†	1.86	3.45

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-17. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Black B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	58,831.66	1,639.69	1,057.13	1.55	2.41
NPSAS institution control: Public	CONTROL=1	60.77	2.13	1.41	1.51	2.28
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	33.45	2.00	1.36	1.47	2.16
Sex assigned at birth: Female	B3SEX=2	66.75	2.34	1.36	1.72	2.94
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	67.81	2.19	1.35	1.62	2.62
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	64.21	2.42	1.39	1.74	3.04
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	26.26	2.04	1.27	1.61	2.58
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	47,156.93	1,896.16	1,545.89	1.23	1.50
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	29.25	1.76	1.32	1.34	1.79
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	16.20	1.75	1.07	1.65	2.71
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	90.28	1.24	0.86	1.45	2.10
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.20	1.38	0.88	1.58	2.48
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	44.82	2.35	1.44	1.63	2.67
Age, as of 12/31/2018	B3age (mean)	39.40	0.42	0.27	1.55	2.40
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	424.51	25.91	18.85	1.37	1.89
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	71.04	1.97	1.31	1.50	2.26
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non- employer-based retirement accounts	B3RETIRE=3	28.33	2.05	1.30	1.57	2.46
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	7.53	1.27	0.76	1.67	2.79
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	70.77	1.84	1.32	1.40	1.97
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.01	0.09	0.05	1.73	2.98
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	81.73	1.02	0.67	1.52	2.31
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	31.36	2.05	1.34	1.53	2.34
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	111.32	3.12	2.19	1.43	2.04
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	30.64	2.05	1.33	1.54	2.36
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	31.68	2.06	1.35	1.53	2.35

See notes at end of table.

**Table L-17. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Black B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	42.64	2.25	1.43	1.57	2.47
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	18.90	1.74	1.13	1.53	2.35
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.05	0.03	1.41	1.98
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	48.85	2.23	1.45	1.54	2.37
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.16	0.89	0.62	1.43	2.06
Summary statistics						
Minimum		†	†	†	1.23	1.50
25th percentile		†	†	†	1.45	2.10
Median		†	†	†	1.53	2.36
75th percentile		†	†	†	1.61	2.58
Maximum		†	†	†	1.74	3.04

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-18. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Hispanic B&B:08-eligible sample members: 2018**

Variable	Defined as	Percent estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	61,937.06	1,746.91	1,169.04	1.49	2.23
NPSAS institution control: Public	CONTROL=1	61.32	2.35	1.41	1.66	2.77
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	23.51	1.78	1.23	1.45	2.10
Sex assigned at birth: Female	B3SEX=2	63.04	2.19	1.40	1.57	2.45
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.94	1.93	1.34	1.44	2.07
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	54.97	2.22	1.44	1.54	2.36
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	37.43	1.94	1.40	1.38	1.91
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	28,422.40	1,654.36	1,230.27	1.34	1.81
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	24.59	1.84	1.25	1.48	2.18
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	18.37	1.77	1.12	1.57	2.47
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	86.63	1.37	0.99	1.38	1.92
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.86	1.42	0.90	1.57	2.46
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	52.05	2.47	1.45	1.71	2.91
Age, as of 12/31/2018	B3age (mean)	36.67	0.30	0.19	1.58	2.49
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	346.51	21.42	15.91	1.35	1.81
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	81.22	2.02	1.13	1.78	3.18
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	30.28	2.00	1.33	1.50	2.26
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.68	0.90	0.61	1.47	2.15
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	68.53	1.93	1.35	1.43	2.05
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.08	0.09	0.06	1.56	2.42
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	81.02	1.10	0.69	1.59	2.51
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	20.73	1.85	1.18	1.57	2.47
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	77.88	3.90	2.43	1.60	2.57
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	16.83	1.61	1.09	1.49	2.21
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	19.35	1.55	1.15	1.35	1.83

See notes at end of table.

**Table L-18. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Hispanic B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.69	2.08	1.37	1.51	2.29
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.60	1.57	1.17	1.34	1.79
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.86	0.04	0.03	1.39	1.93
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	59.91	2.00	1.42	1.41	1.99
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.60	1.03	0.71	1.45	2.10
Summary statistics						
Minimum		†	†	†	1.34	1.79
25th percentile		†	†	†	1.41	1.99
Median		†	†	†	1.49	2.22
75th percentile		†	†	†	1.57	2.47
Maximum		†	†	†	1.78	3.18

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-19. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Asian B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	89,653.31	4,796.61	2,664.30	1.80	3.24
NPSAS institution control: Public	CONTROL=1	70.30	2.40	1.59	1.51	2.28
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	23.03	2.61	1.47	1.78	3.16
Sex assigned at birth: Female	B3SEX=2	49.16	2.80	1.74	1.61	2.59
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.12	2.61	1.52	1.71	2.94
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	60.95	2.60	1.70	1.53	2.35
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	31.31	2.69	1.61	1.66	2.77
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,226.83	2,245.11	1,695.41	1.32	1.75
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.78	2.40	1.54	1.56	2.42
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	26.02	2.74	1.53	1.80	3.23
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	94.42	1.13	0.80	1.42	2.00
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.25	1.74	1.06	1.65	2.71
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	52.27	2.85	1.74	1.64	2.69
Age, as of 12/31/2018	B3age (mean)	34.32	0.31	0.15	2.00	4.00
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	465.38	33.92	26.99	1.26	1.58
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.56	2.02	1.06	1.90	3.60
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	40.80	3.08	1.71	1.80	3.23
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	1.62	0.71	0.44	1.61	2.60
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.24	2.57	1.56	1.65	2.72
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.08	0.09	0.06	1.50	2.24
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	76.45	1.45	0.82	1.76	3.10
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	15.03	1.85	1.24	1.48	2.20
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	41.07	4.07	2.44	1.67	2.80
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	10.25	1.73	1.06	1.63	2.67
Ever defaulted on student loans, as of 2018	B3EVREDEF=1	4.02	1.02	0.68	1.49	2.23

See notes at end of table.



**Table L-19. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Asian B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	25.99	2.52	1.53	1.65	2.73
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	10.24	1.48	1.06	1.40	1.97
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.51	0.05	0.03	1.68	2.81
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.49	2.66	1.55	1.71	2.94
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.55	1.48	0.79	1.88	3.53
Summary statistics						
Minimum		†	†	†	1.26	1.58
25th percentile		†	†	†	1.51	2.28
Median		†	†	†	1.65	2.72
75th percentile		†	†	†	1.76	3.10
Maximum		†	†	†	2.00	4.00

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-20. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for B&B:08-eligible sample members of another race: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	72,912.37	3,565.26	2,505.98	1.42	2.02
NPSAS institution control: Public	CONTROL=1	57.13	3.59	2.35	1.53	2.33
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	24.16	3.23	2.03	1.59	2.53
Sex assigned at birth: Female	B3SEX=2	55.81	4.16	2.36	1.76	3.11
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	71.36	3.43	2.15	1.60	2.55
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	61.75	3.93	2.31	1.70	2.89
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	38.75	3.72	2.31	1.61	2.58
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,880.34	2,305.54	1,954.22	1.18	1.39
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	28.78	3.36	2.15	1.56	2.43
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	27.59	3.47	2.12	1.64	2.67
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	88.48	2.18	1.52	1.44	2.07
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	7.54	1.91	1.25	1.52	2.31
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	60.28	3.53	2.32	1.52	2.30
Age, as of 12/31/2018	B3age (mean)	36.65	0.55	0.34	1.61	2.59
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	408.74	56.55	37.11	1.52	2.32
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.09	2.21	1.64	1.35	1.81
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non- employer-based retirement accounts	B3RETIRE=3	37.35	3.66	2.30	1.59	2.53
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	8.58	1.96	1.33	1.47	2.16
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.51	3.17	2.12	1.49	2.23
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.23	0.13	0.08	1.52	2.30
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	82.81	1.55	1.05	1.47	2.17
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	24.99	3.10	2.06	1.50	2.26
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	50.35	5.28	3.45	1.53	2.35
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	19.86	2.70	1.90	1.43	2.04
Ever defaulted on student loans, as of 2018	B3EVRFDEF=1	16.17	2.70	1.75	1.54	2.37

See notes at end of table.

**Table L-20. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for B&B:08-eligible sample members of another race: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	32.27	3.28	2.22	1.48	2.18
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.60	2.87	1.92	1.49	2.23
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.08	0.05	1.66	2.74
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	69.79	3.00	2.18	1.38	1.90
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.11	1.79	1.20	1.49	2.22
Summary statistics						
Minimum		†	†	†	1.18	1.39
25th percentile		†	†	†	1.47	2.17
Median		†	†	†	1.52	2.30
75th percentile		†	†	†	1.59	2.53
Maximum		†	†	†	1.76	3.11

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian. BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-21. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Male B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	86,543.94	1,229.62	875.91	1.40	1.97
NPSAS institution control: Public	CONTROL=1	64.95	0.71	0.65	1.09	1.19
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	27.90	0.78	0.61	1.28	1.65
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	82.00	0.79	0.52	1.52	2.30
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	51.48	1.12	0.68	1.65	2.71
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.01	1.05	0.66	1.58	2.49
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,734.32	794.70	584.74	1.36	1.85
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	24.90	0.91	0.59	1.55	2.41
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	28.64	0.99	0.61	1.62	2.63
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	91.58	0.56	0.38	1.47	2.17
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	15.77	0.70	0.49	1.42	2.03
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	61.09	1.04	0.66	1.57	2.47
Race/ethnicity (with multiple): White	RACE=1	74.71	1.07	0.59	1.82	3.30
Age, as of 12/31/2018	B3age (mean)	35.92	0.14	0.09	1.66	2.76
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	438.98	15.14	10.67	1.42	2.01
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.79	0.67	0.41	1.64	2.69
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	44.63	1.00	0.67	1.48	2.20
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	7.63	0.47	0.36	1.30	1.69
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	78.17	0.89	0.56	1.59	2.53
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.12	0.04	0.02	1.71	2.92
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.13	0.45	0.26	1.71	2.93
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	17.32	0.74	0.51	1.44	2.08
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.58	1.61	1.07	1.50	2.25
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	12.07	0.66	0.44	1.49	2.23
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	10.20	0.63	0.41	1.54	2.36

See notes at end of table.

**Table L-21. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Male B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	29.45	0.90	0.62	1.46	2.13
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	13.97	0.64	0.47	1.36	1.86
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.02	0.02	1.45	2.10
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	73.69	0.87	0.60	1.46	2.12
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.19	0.50	0.32	1.56	2.45
Summary statistics						
Minimum		†	†	†	1.09	1.19
25th percentile		†	†	†	1.42	2.03
Median		†	†	†	1.50	2.24
75th percentile		†	†	†	1.59	2.53
Maximum		†	†	†	1.82	3.30

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-22. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Female B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	63,229.64	844.63	528.50	1.60	2.55
NPSAS institution control: Public	CONTROL=1	61.31	0.52	0.55	0.95	0.91
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	19.98	0.61	0.45	1.36	1.85
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.26	0.80	0.53	1.52	2.32
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	57.26	0.82	0.56	1.48	2.18
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.91	0.87	0.56	1.56	2.43
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,478.50	618.81	464.73	1.33	1.77
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	28.72	0.68	0.51	1.33	1.78
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	25.43	0.68	0.49	1.39	1.93
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	83.83	0.51	0.42	1.22	1.48
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	10.28	0.52	0.34	1.52	2.30
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	63.38	0.89	0.54	1.63	2.65
Race/ethnicity (with multiple): White	RACE=1	71.64	0.84	0.51	1.65	2.72
Age, as of 12/31/2018	B3age (mean)	36.19	0.15	0.08	1.80	3.23
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	414.69	9.53	7.41	1.29	1.65
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.41	0.53	0.41	1.30	1.70
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	37.75	0.84	0.55	1.53	2.35
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	1.89	0.23	0.15	1.49	2.23
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.18	0.70	0.52	1.34	1.79
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.31	0.03	0.02	1.26	1.59
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.86	0.39	0.25	1.59	2.52
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	25.04	0.66	0.49	1.35	1.83
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	65.40	1.38	0.94	1.47	2.15
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.59	0.61	0.43	1.43	2.03
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.82	0.56	0.38	1.47	2.17

See notes at end of table.

**Table L-22. Design effects for selected variable values using analysis weight WTH000 (B&B:08/18 and B&B:08/12 response) for Female B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.62	0.78	0.53	1.46	2.12
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	24.72	0.63	0.49	1.28	1.65
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.02	0.01	1.49	2.23
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	66.59	0.74	0.53	1.39	1.92
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.06	0.40	0.27	1.48	2.19
Summary statistics						
Minimum		†	†	†	0.95	0.91
25th percentile		†	†	†	1.33	1.78
Median		†	†	†	1.46	2.14
75th percentile		†	†	†	1.52	2.32
Maximum		†	†	†	1.80	3.23

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-23. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	73,569.36	746.86	484.62	1.54	2.38
NPSAS institution control: Public	CONTROL=1	62.86	#	0.41	#	#
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	23.27	0.31	0.36	0.85	0.72
Sex assigned at birth: Female	B3SEX=2	57.46	0.23	0.42	0.54	0.30
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.57	0.56	0.37	1.51	2.28
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	54.71	0.63	0.43	1.47	2.17
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.08	0.69	0.42	1.64	2.70
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,983.77	477.70	364.71	1.31	1.72
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	26.39	0.51	0.38	1.36	1.86
Highest education attained by either parent:						
Bachelor's degree	B3PAREDUC=6	26.53	0.62	0.38	1.64	2.70
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	86.51	0.35	0.29	1.19	1.41
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	12.94	0.42	0.29	1.46	2.14
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	61.74	0.67	0.42	1.60	2.57
Race/ethnicity (with multiple): White	RACE=1	73.09	0.68	0.38	1.78	3.18
Age, as of 12/31/2018	B3age (mean)	35.95	0.09	0.06	1.60	2.55
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	428.25	8.02	6.17	1.30	1.69
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.71	0.43	0.29	1.47	2.16
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	40.98	0.63	0.42	1.49	2.22
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	4.29	0.25	0.17	1.45	2.10
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.34	0.54	0.38	1.42	2.02
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.09	0.02	0.02	1.48	2.18
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	84.74	0.28	0.18	1.59	2.53
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.46	0.48	0.35	1.36	1.85
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	59.76	1.02	0.69	1.47	2.15
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.16	0.41	0.31	1.35	1.81
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	11.45	0.37	0.27	1.37	1.87

See notes at end of table.



**Table L-23. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	32.04	0.53	0.40	1.33	1.78
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.84	0.44	0.35	1.27	1.60
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.90	0.01	0.01	1.49	2.23
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	69.60	0.54	0.39	1.38	1.91
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.94	0.31	0.20	1.54	2.37
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.33	1.78
Median		†	†	†	1.46	2.14
75th percentile		†	†	†	1.54	2.37
Maximum		†	†	†	1.78	3.18

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-24. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members at public institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	71,874.18	990.74	605.72	1.64	2.68
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	20.56	0.54	0.45	1.20	1.45
Sex assigned at birth: Female	B3SEX=2	56.00	0.55	0.56	0.99	0.97
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.32	0.69	0.48	1.44	2.07
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	54.98	0.83	0.56	1.50	2.24
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	43.37	0.90	0.55	1.63	2.66
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,493.74	593.15	475.73	1.25	1.55
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.76	0.68	0.50	1.37	1.88
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	28.25	0.76	0.50	1.50	2.26
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.47	0.46	0.39	1.16	1.35
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.49	0.56	0.37	1.51	2.29
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	63.90	0.78	0.54	1.44	2.08
Race/ethnicity (with multiple): White	RACE=1	73.43	0.87	0.49	1.76	3.08
Age, as of 12/31/2018	B3age (mean)	35.40	0.10	0.06	1.54	2.39
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	399.00	10.31	8.09	1.27	1.62
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	87.17	0.55	0.37	1.48	2.19
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.58	0.78	0.55	1.42	2.00
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	3.33	0.31	0.20	1.52	2.32
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.81	0.68	0.49	1.39	1.94
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.09	0.03	0.02	1.50	2.25
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.45	0.34	0.23	1.52	2.31
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.25	0.60	0.47	1.29	1.66
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	59.93	1.39	0.89	1.56	2.42
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	14.23	0.49	0.39	1.25	1.57
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	9.68	0.45	0.33	1.37	1.88

See notes at end of table.

**Table L-24. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members at public institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	27.29	0.68	0.50	1.37	1.88
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.68	0.62	0.46	1.35	1.82
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.02	0.01	1.52	2.30
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	71.11	0.70	0.51	1.38	1.89
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.59	0.36	0.25	1.43	2.04
Summary statistics						
Minimum		†	†	†	0.99	0.97
25th percentile		†	†	†	1.35	1.82
Median		†	†	†	1.43	2.06
75th percentile		†	†	†	1.52	2.30
Maximum		†	†	†	1.76	3.08

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-25. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	77,526.76	1,395.93	872.50	1.60	2.56
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	25.19	0.97	0.61	1.58	2.50
Sex assigned at birth: Female	B3SEX=2	59.86	0.95	0.69	1.37	1.88
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.31	1.00	0.62	1.60	2.56
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	56.54	1.16	0.70	1.65	2.72
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	37.74	1.12	0.68	1.63	2.66
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,596.08	878.89	622.19	1.41	2.00
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	27.43	1.00	0.63	1.59	2.52
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	24.64	0.99	0.61	1.63	2.67
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.03	0.64	0.47	1.34	1.81
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	14.18	0.79	0.49	1.61	2.60
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	58.18	1.17	0.70	1.68	2.81
Race/ethnicity (with multiple): White	RACE=1	75.09	0.91	0.61	1.49	2.21
Age, as of 12/31/2018	B3age (mean)	35.82	0.17	0.10	1.69	2.86
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	464.58	14.26	10.53	1.35	1.83
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	87.45	0.69	0.47	1.47	2.16
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.62	1.09	0.70	1.56	2.44
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.63	0.41	0.30	1.38	1.91
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.42	0.99	0.63	1.58	2.48
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.17	0.04	0.03	1.48	2.18
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.57	0.47	0.30	1.56	2.42
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	19.82	0.83	0.56	1.47	2.17
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.49	1.74	1.12	1.55	2.42
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.90	0.73	0.52	1.40	1.97
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.06	0.64	0.46	1.39	1.92

See notes at end of table.

**Table L-25. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	38.69	1.08	0.69	1.57	2.47
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.20	0.80	0.58	1.39	1.93
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.03	0.02	1.57	2.48
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	68.50	0.94	0.66	1.43	2.05
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	92.54	0.61	0.37	1.64	2.68
Summary statistics						
Minimum		†	†	†	1.34	1.81
25th percentile		†	†	†	1.41	2.00
Median		†	†	†	1.56	2.43
75th percentile		†	†	†	1.60	2.56
Maximum		†	†	†	1.69	2.86

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-26. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members at private for-profit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	68,832.25	3,511.30	1,941.51	1.81	3.27
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	46.80	3.56	1.93	1.84	3.39
Sex assigned at birth: Female	B3SEX=2	60.33	3.41	1.89	1.80	3.24
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.10	2.87	1.72	1.67	2.79
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	38.02	3.08	1.88	1.64	2.69
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	33.49	3.17	1.83	1.73	3.00
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	36,952.34	2,043.33	1,199.87	1.70	2.90
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	14.00	2.20	1.34	1.64	2.69
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	16.41	2.57	1.43	1.79	3.21
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	96.95	0.98	0.67	1.47	2.16
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.30	1.82	1.18	1.55	2.40
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	57.47	3.55	1.91	1.85	3.43
Race/ethnicity (with multiple): White	RACE=1	54.19	3.80	1.93	1.97	3.88
Age, as of 12/31/2018	B3age (mean)	44.40	0.76	0.37	2.04	4.15
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	480.32	40.69	21.01	1.94	3.75
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	75.06	2.47	1.68	1.48	2.18
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	28.25	3.08	1.74	1.77	3.12
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	14.96	2.13	1.38	1.54	2.37
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.37	2.60	1.71	1.52	2.31
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.45	0.09	0.06	1.48	2.20
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.32	1.57	0.92	1.71	2.93
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.38	2.37	1.61	1.47	2.16
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	100.51	6.00	3.50	1.72	2.94
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	22.73	2.61	1.62	1.61	2.59
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	31.41	3.29	1.80	1.83	3.35

See notes at end of table.

**Table L-26. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for all B&B:08-eligible sample members at private for-profit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	49.76	2.81	1.94	1.45	2.11
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	6.84	1.55	0.98	1.59	2.52
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.96	0.07	0.05	1.50	2.25
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	56.74	2.93	1.92	1.53	2.34
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.02	1.13	0.84	1.34	1.79
Summary statistics						
Minimum		†	†	†	1.34	1.79
25th percentile		†	†	†	1.52	2.31
Median		†	†	†	1.66	2.74
75th percentile		†	†	†	1.80	3.24
Maximum		†	†	†	2.04	4.15

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-27. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for White B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	74,831.75	844.33	568.42	1.49	2.21
NPSAS institution control: Public	CONTROL=1	63.15	0.40	0.49	0.82	0.67
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	21.93	0.45	0.42	1.09	1.18
Sex assigned at birth: Female	B3SEX=2	56.19	0.44	0.50	0.89	0.79
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	76.02	0.63	0.43	1.47	2.17
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	52.46	0.70	0.50	1.40	1.96
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	44.42	0.77	0.50	1.55	2.40
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,515.62	569.04	397.43	1.43	2.05
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	26.30	0.64	0.44	1.43	2.06
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	28.79	0.69	0.46	1.52	2.32
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	85.60	0.42	0.35	1.20	1.44
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	13.89	0.49	0.35	1.42	2.01
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	66.07	0.75	0.48	1.56	2.45
Age, as of 12/31/2018	B3age (mean)	35.63	0.11	0.07	1.62	2.63
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	431.71	9.26	7.20	1.29	1.66
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	88.94	0.42	0.32	1.33	1.78
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	43.63	0.68	0.50	1.37	1.87
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	4.01	0.28	0.20	1.43	2.05
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	74.15	0.63	0.44	1.43	2.04
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.15	0.03	0.02	1.36	1.85
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.19	0.31	0.20	1.55	2.40
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	20.67	0.58	0.41	1.43	2.05
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	51.66	1.14	0.79	1.44	2.09
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	13.33	0.47	0.34	1.38	1.89
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	8.63	0.41	0.28	1.45	2.10

See notes at end of table.



**Table L-27. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for White B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	31.08	0.65	0.47	1.40	1.96
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.48	0.51	0.41	1.23	1.51
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.95	0.02	0.01	1.47	2.17
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.94	0.66	0.45	1.47	2.15
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.00	0.35	0.24	1.48	2.19
Summary statistics						
Minimum		†	†	†	0.82	0.67
25th percentile		†	†	†	1.36	1.85
Median		†	†	†	1.43	2.05
75th percentile		†	†	†	1.47	2.17
Maximum		†	†	†	1.62	2.63

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-28. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Black B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	59,787.12	1,752.55	1,111.05	1.58	2.49
NPSAS institution control: Public	CONTROL=1	60.33	2.23	1.39	1.61	2.58
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	34.62	1.82	1.35	1.35	1.81
Sex assigned at birth: Female	B3SEX=2	66.58	2.37	1.34	1.77	3.13
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	67.92	1.86	1.33	1.41	1.98
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	65.33	2.20	1.35	1.63	2.65
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	25.32	2.02	1.23	1.64	2.68
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	49,119.16	1,953.45	1,566.23	1.25	1.56
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	30.23	1.72	1.30	1.32	1.74
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	15.69	1.68	1.03	1.63	2.65
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	89.78	1.24	0.86	1.44	2.06
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	9.87	1.36	0.85	1.61	2.59
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	44.83	2.30	1.41	1.63	2.64
Age, as of 12/31/2018	B3age (mean)	39.44	0.44	0.27	1.67	2.80
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	438.04	30.32	19.47	1.56	2.43
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	70.74	2.01	1.29	1.55	2.42
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	28.33	2.03	1.28	1.59	2.52
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	7.29	1.21	0.74	1.64	2.68
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	70.29	1.73	1.30	1.33	1.77
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.84	0.09	0.05	1.79	3.20
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	82.00	1.03	0.66	1.55	2.41
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	31.62	2.04	1.32	1.54	2.38
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	112.17	3.46	2.20	1.58	2.48
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	30.85	2.08	1.31	1.59	2.52
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	30.25	2.05	1.30	1.57	2.47

See notes at end of table.

**Table L-28. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Black B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	41.62	2.24	1.40	1.60	2.56
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	19.34	1.83	1.12	1.63	2.65
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.05	0.03	1.53	2.34
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	48.91	2.22	1.42	1.56	2.45
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.37	0.81	0.60	1.35	1.82
Summary statistics						
Minimum		†	†	†	1.25	1.56
25th percentile		†	†	†	1.53	2.34
Median		†	†	†	1.58	2.48
75th percentile		†	†	†	1.63	2.65
Maximum		†	†	†	1.79	3.20

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-29. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Hispanic B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	62,953.57	1,727.51	1,194.17	1.45	2.09
NPSAS institution control: Public	CONTROL=1	61.21	2.03	1.38	1.47	2.18
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	22.46	1.76	1.18	1.49	2.21
Sex assigned at birth: Female	B3SEX=2	63.89	2.17	1.36	1.60	2.55
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	69.49	1.91	1.30	1.47	2.16
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	57.46	2.15	1.40	1.54	2.36
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	35.27	2.06	1.35	1.52	2.32
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,641.43	1,816.25	1,245.60	1.46	2.13
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	24.13	1.64	1.21	1.35	1.82
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	18.88	1.64	1.11	1.48	2.20
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	85.17	1.32	1.01	1.31	1.72
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	11.14	1.36	0.89	1.53	2.35
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	51.69	2.40	1.41	1.70	2.89
Age, as of 12/31/2018	B3age (mean)	36.63	0.29	0.18	1.59	2.54
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	381.97	30.95	18.82	1.64	2.71
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	81.98	1.83	1.09	1.68	2.82
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	31.19	1.99	1.31	1.52	2.31
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	4.49	0.86	0.59	1.46	2.13
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.47	1.90	1.30	1.46	2.13
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.92	0.08	0.05	1.49	2.21
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	81.00	1.04	0.67	1.56	2.44
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.41	1.67	1.16	1.44	2.07
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	77.88	3.45	2.30	1.50	2.25
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.17	1.55	1.07	1.45	2.11
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	19.23	1.62	1.12	1.45	2.10

See notes at end of table.

**Table L-29. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Hispanic B&B:08-eligible sample members: 2018—Continued**

Variable	Defined as	Percent estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	34.06	2.02	1.34	1.51	2.27
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	23.02	1.57	1.19	1.32	1.74
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.86	0.05	0.03	1.58	2.49
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	60.24	1.98	1.38	1.43	2.05
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.27	1.08	0.71	1.53	2.34
Summary statistics						
Minimum		†	†	†	1.31	1.72
25th percentile		†	†	†	1.45	2.11
Median		†	†	†	1.49	2.21
75th percentile		†	†	†	1.54	2.36
Maximum		†	†	†	1.70	2.89

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-30. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Asian B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	92,859.55	4,742.47	2,796.62	1.70	2.88
NPSAS institution control: Public	CONTROL=1	68.53	2.47	1.58	1.56	2.45
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	24.16	2.56	1.46	1.76	3.09
Sex assigned at birth: Female	B3SEX=2	50.02	2.69	1.70	1.58	2.50
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.51	2.49	1.46	1.70	2.89
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	59.21	2.61	1.67	1.56	2.44
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	31.53	2.68	1.58	1.70	2.88
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,380.72	2,178.90	1,677.47	1.30	1.69
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	25.59	2.20	1.48	1.48	2.20
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	25.97	2.60	1.49	1.74	3.03
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	93.89	1.12	0.82	1.37	1.89
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	11.82	1.81	1.10	1.65	2.71
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	50.97	2.63	1.70	1.55	2.39
Age, as of 12/31/2018	B3age (mean)	33.87	0.17	0.11	1.63	2.65
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	491.13	40.46	29.90	1.35	1.83
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	90.02	1.88	1.02	1.85	3.41
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	42.87	3.00	1.68	1.78	3.17
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	1.52	0.67	0.42	1.60	2.57
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	74.12	2.47	1.49	1.66	2.75
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.90	0.08	0.06	1.43	2.04
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	77.46	1.39	0.80	1.73	3.00
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	15.49	2.00	1.23	1.63	2.64
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	40.16	4.01	2.38	1.68	2.83
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	10.19	1.62	1.03	1.58	2.49
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	4.34	1.03	0.69	1.49	2.23

See notes at end of table.

**Table L-30. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Asian B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	26.41	2.26	1.50	1.50	2.26
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	12.32	1.60	1.12	1.43	2.05
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.52	0.05	0.03	1.63	2.66
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.70	2.57	1.52	1.70	2.88
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.12	1.49	0.80	1.86	3.48
Summary statistics						
Minimum		†	†	†	1.30	1.69
25th percentile		†	†	†	1.50	2.26
Median		†	†	†	1.63	2.65
75th percentile		†	†	†	1.70	2.88
Maximum		†	†	†	1.86	3.48

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-31. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for B&B:08-eligible sample members of another race: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	70,528.67	3,487.73	2,543.49	1.37	1.88
NPSAS institution control: Public	CONTROL=1	56.59	3.42	2.34	1.46	2.14
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	24.89	3.24	2.04	1.59	2.52
Sex assigned at birth: Female	B3SEX=2	58.59	3.87	2.32	1.67	2.77
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	71.40	3.41	2.13	1.60	2.56
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	61.69	4.03	2.29	1.76	3.08
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.85	3.45	2.32	1.49	2.22
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,714.11	2,256.22	1,974.69	1.14	1.31
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	26.40	3.28	2.08	1.58	2.48
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	26.16	3.21	2.07	1.55	2.40
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	88.23	2.18	1.52	1.44	2.06
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	6.58	1.74	1.17	1.49	2.22
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	56.60	3.50	2.34	1.50	2.24
Age, as of 12/31/2018	B3age (mean)	36.38	0.47	0.33	1.44	2.09
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	399.00	52.40	37.28	1.41	1.98
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.32	2.47	1.72	1.44	2.07
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	37.76	3.64	2.29	1.59	2.54
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	7.58	1.75	1.25	1.40	1.97
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.23	3.18	2.11	1.50	2.26
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.18	0.12	0.08	1.41	2.00
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.58	1.38	0.99	1.39	1.92
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	24.77	3.21	2.04	1.58	2.48
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	53.35	5.32	3.44	1.54	2.38
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	19.89	2.59	1.88	1.38	1.90
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	18.27	2.52	1.82	1.38	1.91

See notes at end of table.



**Table L-31. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for B&B:08-eligible sample members of another race: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.90	3.34	2.23	1.50	2.24
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.39	2.86	1.90	1.51	2.27
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.09	0.06	1.66	2.74
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	67.93	2.86	2.20	1.30	1.69
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	90.40	2.22	1.39	1.60	2.56
Summary statistics						
Minimum		†	†	†	1.14	1.31
25th percentile		†	†	†	1.41	1.98
Median		†	†	†	1.49	2.23
75th percentile		†	†	†	1.58	2.48
Maximum		†	†	†	1.76	3.08

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian. BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-32. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Male B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	86,094.08	1,165.05	833.71	1.40	1.95
NPSAS institution control: Public	CONTROL=1	65.01	0.72	0.64	1.13	1.27
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	27.94	0.73	0.60	1.22	1.50
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	82.81	0.74	0.50	1.47	2.16
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	51.33	1.08	0.67	1.62	2.62
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.13	1.01	0.65	1.55	2.40
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,511.16	771.59	582.04	1.33	1.76
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	24.37	0.86	0.57	1.51	2.28
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	28.04	1.05	0.60	1.75	3.07
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	91.57	0.53	0.37	1.44	2.06
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	16.34	0.69	0.49	1.39	1.94
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	60.97	0.94	0.65	1.45	2.11
Race/ethnicity (with multiple): White	RACE=1	75.27	0.98	0.58	1.71	2.93
Age, as of 12/31/2018	B3age (mean)	35.86	0.13	0.08	1.50	2.26
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	442.44	15.46	10.60	1.46	2.13
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.97	0.63	0.40	1.57	2.47
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	44.82	0.94	0.66	1.42	2.01
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	7.59	0.49	0.35	1.39	1.94
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	78.91	0.83	0.54	1.53	2.34
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.97	0.04	0.02	1.61	2.60
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.15	0.42	0.26	1.62	2.63
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	17.15	0.74	0.50	1.47	2.16
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.55	1.51	1.06	1.42	2.02
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	11.86	0.60	0.43	1.39	1.93
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	9.91	0.54	0.40	1.35	1.82

See notes at end of table.

**Table L-32. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Male B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	30.02	0.86	0.61	1.40	1.97
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	14.57	0.65	0.47	1.39	1.93
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.85	0.02	0.02	1.41	2.00
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	74.02	0.86	0.58	1.47	2.16
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.41	0.49	0.31	1.60	2.55
Summary statistics						
Minimum		†	†	†	1.13	1.27
25th percentile		†	†	†	1.39	1.94
Median		†	†	†	1.46	2.12
75th percentile		†	†	†	1.55	2.40
Maximum		†	†	†	1.75	3.07

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-33. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Female B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	63,579.30	864.28	537.71	1.61	2.58
NPSAS institution control: Public	CONTROL=1	61.27	0.53	0.54	0.98	0.95
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	19.81	0.58	0.44	1.31	1.72
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.46	0.77	0.52	1.48	2.18
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	57.21	0.79	0.55	1.43	2.06
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.79	0.87	0.55	1.58	2.50
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,814.52	620.87	465.85	1.33	1.78
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	27.88	0.68	0.50	1.36	1.85
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	25.41	0.67	0.49	1.38	1.92
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	82.76	0.55	0.42	1.31	1.71
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	10.42	0.52	0.34	1.52	2.32
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	62.32	0.84	0.54	1.56	2.42
Race/ethnicity (with multiple): White	RACE=1	71.47	0.83	0.50	1.65	2.71
Age, as of 12/31/2018	B3age (mean)	36.02	0.13	0.08	1.70	2.88
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	419.91	9.57	7.56	1.27	1.60
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.29	0.54	0.41	1.34	1.79
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	38.14	0.79	0.54	1.45	2.11
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	1.85	0.22	0.15	1.49	2.21
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.21	0.71	0.51	1.39	1.92
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.18	0.03	0.02	1.30	1.69
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.70	0.38	0.24	1.58	2.49
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	24.66	0.63	0.48	1.30	1.69
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	64.59	1.39	0.91	1.53	2.34
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.61	0.62	0.42	1.46	2.14
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.59	0.57	0.37	1.53	2.35

See notes at end of table.

**Table L-33. Design effects for selected variable values using analysis weight WTI000 (B&B:08/18 and transcript response) for Female B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.53	0.75	0.53	1.43	2.03
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	25.49	0.68	0.49	1.40	1.95
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.02	0.01	1.53	2.34
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	66.33	0.71	0.53	1.36	1.84
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.59	0.40	0.27	1.45	2.10
Summary statistics						
Minimum		†	†	†	0.98	0.95
25th percentile		†	†	†	1.34	1.79
Median		†	†	†	1.44	2.08
75th percentile		†	†	†	1.53	2.34
Maximum		†	†	†	1.70	2.88

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-34. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	73,047.89	786.43	504.69	1.56	2.43
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	23.38	0.33	0.38	0.86	0.74
Sex assigned at birth: Female	B3SEX=2	57.47	0.24	0.44	0.55	0.30
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.18	0.62	0.39	1.58	2.50
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	54.65	0.67	0.45	1.49	2.22
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.97	0.71	0.44	1.61	2.61
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,971.17	488.14	381.84	1.28	1.63
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.94	0.52	0.40	1.31	1.70
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	26.77	0.67	0.40	1.69	2.87
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	86.93	0.36	0.30	1.20	1.44
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.73	0.42	0.30	1.41	2.00
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	62.43	0.72	0.44	1.66	2.75
Race/ethnicity (with multiple): White	RACE=1	73.16	0.69	0.40	1.72	2.96
Age, as of 12/31/2018	B3age (mean)	35.98	0.10	0.06	1.62	2.62
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	425.15	8.29	6.36	1.30	1.70
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.91	0.43	0.30	1.43	2.04
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.05	0.64	0.44	1.45	2.10
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.24	0.26	0.18	1.45	2.10
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.01	0.57	0.40	1.42	2.03
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.24	0.03	0.02	1.54	2.37
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	84.83	0.30	0.19	1.62	2.62
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.65	0.50	0.37	1.34	1.80
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	60.05	1.07	0.73	1.46	2.12
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.22	0.45	0.32	1.40	1.97
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	11.65	0.41	0.29	1.41	2.00

See notes at end of table.

**Table L-34. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	31.94	0.56	0.42	1.33	1.78
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.23	0.45	0.36	1.24	1.55
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.89	0.02	0.01	1.47	2.17
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	69.76	0.56	0.41	1.35	1.83
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.98	0.31	0.21	1.47	2.15
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.31	1.70
Median		†	†	†	1.43	2.04
75th percentile		†	†	†	1.56	2.43
Maximum		†	†	†	1.72	2.96

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&B:08/18).

**Table L-35. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members at public institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	71,551.46	1,032.15	633.70	1.63	2.65
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	20.44	0.55	0.47	1.17	1.37
Sex assigned at birth: Female	B3SEX=2	56.14	0.58	0.58	1.00	1.01
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.66	0.78	0.51	1.52	2.31
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	54.87	0.88	0.58	1.51	2.28
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	43.16	0.94	0.58	1.62	2.62
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,423.48	638.78	496.83	1.29	1.65
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	27.13	0.72	0.52	1.37	1.88
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	28.34	0.82	0.53	1.55	2.39
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.75	0.49	0.41	1.19	1.41
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.39	0.57	0.39	1.46	2.14
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	64.27	0.85	0.56	1.50	2.26
Race/ethnicity (with multiple): White	RACE=1	73.43	0.89	0.52	1.71	2.92
Age, as of 12/31/2018	B3age (mean)	35.38	0.11	0.07	1.57	2.47
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	392.69	10.89	8.31	1.31	1.72
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	87.23	0.59	0.39	1.51	2.27
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.82	0.80	0.58	1.38	1.90
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	3.17	0.31	0.21	1.52	2.31
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.31	0.72	0.52	1.39	1.94
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.23	0.03	0.02	1.51	2.29
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.45	0.36	0.24	1.50	2.24
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.43	0.62	0.49	1.26	1.58
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	59.81	1.49	0.93	1.60	2.56
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	14.37	0.54	0.41	1.31	1.72
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	9.66	0.48	0.35	1.39	1.95

See notes at end of table.



**Table L-35. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members at public institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	27.46	0.73	0.52	1.40	1.95
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.25	0.63	0.48	1.32	1.73
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.91	0.02	0.01	1.48	2.19
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	71.35	0.70	0.53	1.32	1.75
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.44	0.37	0.27	1.36	1.86
Summary statistics						
Minimum		†	†	†	1.00	1.01
25th percentile		†	†	†	1.32	1.73
Median		†	†	†	1.43	2.05
75th percentile		†	†	†	1.52	2.31
Maximum		†	†	†	1.71	2.92

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-36. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	76,787.46	1,383.44	907.76	1.52	2.32
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	25.67	1.04	0.65	1.60	2.57
Sex assigned at birth: Female	B3SEX=2	59.57	1.00	0.73	1.38	1.89
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.27	1.02	0.66	1.54	2.39
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	56.76	1.22	0.74	1.66	2.74
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	38.04	1.18	0.72	1.63	2.66
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,791.55	930.62	655.51	1.42	2.02
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	28.44	1.03	0.67	1.53	2.35
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	25.38	1.06	0.65	1.64	2.68
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.72	0.68	0.49	1.39	1.92
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	14.03	0.85	0.52	1.64	2.69
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	59.33	1.19	0.73	1.63	2.65
Race/ethnicity (with multiple): White	RACE=1	75.39	0.94	0.64	1.47	2.17
Age, as of 12/31/2018	B3age (mean)	35.93	0.18	0.11	1.66	2.75
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	471.80	15.28	10.97	1.39	1.94
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	88.10	0.69	0.48	1.43	2.04
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.38	1.10	0.73	1.50	2.25
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.85	0.44	0.32	1.37	1.88
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.51	0.96	0.66	1.44	2.08
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.35	0.04	0.03	1.50	2.26
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.77	0.50	0.31	1.59	2.52
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	19.93	0.88	0.59	1.48	2.19
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	53.14	1.88	1.19	1.58	2.50
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.51	0.73	0.54	1.36	1.85
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.31	0.69	0.49	1.42	2.02

See notes at end of table.

**Table L-36. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	38.11	1.09	0.72	1.51	2.29
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.17	0.82	0.60	1.38	1.90
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.03	0.02	1.60	2.58
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	68.34	0.98	0.69	1.42	2.00
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.06	0.59	0.38	1.57	2.46
Summary statistics						
Minimum		†	†	†	1.36	1.85
25th percentile		†	†	†	1.42	2.02
Median		†	†	†	1.51	2.28
75th percentile		†	†	†	1.60	2.57
Maximum		†	†	†	1.66	2.75

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-37. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members at private for-profit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	66,944.67	3,214.46	1,855.63	1.73	3.00
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	47.42	3.63	2.06	1.77	3.12
Sex assigned at birth: Female	B3SEX=2	60.80	2.98	2.01	1.48	2.19
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.09	3.02	1.80	1.67	2.80
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	36.64	3.30	1.98	1.67	2.78
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	31.94	3.04	1.92	1.58	2.50
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	36,253.69	1,741.46	1,206.02	1.44	2.09
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	13.69	2.27	1.42	1.60	2.57
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	15.08	2.54	1.47	1.72	2.96
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	97.49	0.87	0.64	1.35	1.81
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	8.12	1.81	1.12	1.61	2.59
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	59.23	3.84	2.02	1.90	3.60
Race/ethnicity (with multiple): White	RACE=1	53.60	3.88	2.05	1.89	3.56
Age, as of 12/31/2018	B3age (mean)	44.68	0.78	0.40	1.95	3.81
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	458.32	30.75	20.92	1.47	2.16
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	74.21	2.72	1.80	1.51	2.28
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	28.21	3.27	1.85	1.77	3.12
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	14.44	1.94	1.45	1.34	1.80
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.51	3.28	1.84	1.78	3.18
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.56	0.11	0.06	1.65	2.71
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.92	1.86	0.97	1.91	3.65
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	23.22	2.59	1.74	1.49	2.22
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	103.00	6.94	3.79	1.83	3.34
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	24.76	2.70	1.78	1.52	2.31
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	34.25	3.46	1.95	1.77	3.13

See notes at end of table.

**Table L-37. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for all B&B:08-eligible sample members at private for-profit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	49.65	3.11	2.06	1.51	2.28
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	6.62	1.54	1.02	1.51	2.27
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.06	0.05	1.41	1.99
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	57.96	2.96	2.03	1.46	2.12
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.15	1.26	0.97	1.31	1.71
Summary statistics						
Minimum		†	†	†	1.31	1.71
25th percentile		†	†	†	1.48	2.19
Median		†	†	†	1.61	2.58
75th percentile		†	†	†	1.77	3.12
Maximum		†	†	†	1.95	3.81

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-38. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for White B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	74,683.45	903.25	600.09	1.51	2.27
NPSAS institution control: Public	CONTROL=1	63.09	0.42	0.51	0.82	0.67
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	22.07	0.50	0.44	1.15	1.32
Sex assigned at birth: Female	B3SEX=2	56.12	0.50	0.52	0.95	0.89
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.54	0.67	0.45	1.47	2.17
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	52.59	0.76	0.53	1.44	2.06
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	44.14	0.80	0.52	1.53	2.34
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,679.77	597.71	417.54	1.43	2.05
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	26.74	0.63	0.47	1.35	1.82
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	28.94	0.71	0.48	1.48	2.20
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	86.09	0.47	0.37	1.29	1.66
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	13.75	0.50	0.36	1.39	1.93
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	66.82	0.78	0.50	1.57	2.45
Age, as of 12/31/2018	B3age (mean)	35.66	0.12	0.07	1.68	2.83
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	434.75	10.41	7.59	1.37	1.88
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.23	0.45	0.33	1.37	1.88
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	43.99	0.74	0.52	1.40	1.97
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	3.97	0.30	0.21	1.44	2.08
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.88	0.64	0.46	1.39	1.93
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.30	0.03	0.02	1.45	2.10
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.41	0.33	0.21	1.61	2.61
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.08	0.59	0.43	1.38	1.91
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.51	1.18	0.84	1.40	1.97
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	13.39	0.50	0.36	1.40	1.97
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	8.83	0.44	0.30	1.46	2.13

See notes at end of table.

**Table L-38. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for White B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	30.98	0.70	0.49	1.43	2.05
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.05	0.55	0.43	1.28	1.65
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.02	0.01	1.48	2.19
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	73.16	0.62	0.47	1.32	1.75
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.90	0.37	0.25	1.47	2.16
Summary statistics						
Minimum		†	†	†	0.82	0.67
25th percentile		†	†	†	1.37	1.88
Median		†	†	†	1.42	2.01
75th percentile		†	†	†	1.47	2.17
Maximum		†	†	†	1.68	2.83

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-39. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Black B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	58,902.85	1,724.08	1,105.95	1.56	2.43
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	33.84	2.02	1.43	1.42	2.01
Sex assigned at birth: Female	B3SEX=2	67.96	2.48	1.41	1.76	3.10
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	67.73	2.24	1.41	1.59	2.53
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	65.47	2.47	1.43	1.73	2.98
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	26.32	2.15	1.33	1.62	2.61
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	47,817.23	2,083.85	1,622.54	1.28	1.65
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	29.88	1.84	1.38	1.33	1.78
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	16.23	1.84	1.11	1.65	2.73
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	89.93	1.38	0.91	1.52	2.32
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	9.36	1.40	0.88	1.59	2.54
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	44.70	2.40	1.50	1.60	2.57
Age, as of 12/31/2018	B3age (mean)	39.39	0.45	0.28	1.58	2.50
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	424.12	26.01	19.81	1.31	1.72
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	70.26	2.23	1.38	1.62	2.61
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	28.42	2.10	1.36	1.54	2.38
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	7.21	1.32	0.78	1.70	2.88
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.97	1.95	1.38	1.41	1.99
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.01	0.10	0.05	1.79	3.21
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	81.35	1.06	0.72	1.48	2.18
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	31.64	2.03	1.40	1.45	2.10
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	111.19	3.44	2.25	1.53	2.33
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	30.57	2.11	1.39	1.52	2.31
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	31.58	2.10	1.40	1.50	2.24

See notes at end of table.



**Table L-39. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Black B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	42.58	2.38	1.49	1.60	2.56
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	19.49	1.86	1.19	1.56	2.42
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.05	0.03	1.49	2.23
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	49.10	2.33	1.51	1.55	2.39
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.17	0.89	0.65	1.38	1.92
Summary statistics						
Minimum		†	†	†	1.28	1.65
25th percentile		†	†	†	1.48	2.18
Median		†	†	†	1.54	2.38
75th percentile		†	†	†	1.60	2.57
Maximum		†	†	†	1.79	3.21

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-40. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Hispanic B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	61,807.88	1,705.36	1,195.65	1.43	2.03
NPSAS institution control: Public	CONTROL=1	60.88	2.29	1.46	1.57	2.47
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	23.54	1.98	1.27	1.56	2.43
Sex assigned at birth: Female	B3SEX=2	63.67	2.29	1.44	1.60	2.55
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	70.11	1.96	1.37	1.43	2.04
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	55.79	2.37	1.48	1.59	2.54
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	35.49	2.10	1.43	1.47	2.16
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	28,976.05	1,800.31	1,294.32	1.39	1.93
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	25.17	1.81	1.30	1.39	1.94
Highest education attained by either parent:						
Bachelor's degree	B3PAREDUC=6	19.29	1.79	1.18	1.52	2.32
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	85.46	1.45	1.05	1.37	1.88
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	10.87	1.45	0.93	1.56	2.43
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	51.48	2.53	1.49	1.70	2.88
Age, as of 12/31/2018	B3age (mean)	36.61	0.30	0.19	1.55	2.40
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	351.16	22.52	16.80	1.34	1.80
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	81.65	1.88	1.16	1.63	2.65
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	30.63	2.07	1.38	1.50	2.26
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	4.46	0.90	0.62	1.46	2.14
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.10	1.90	1.38	1.38	1.90
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.05	0.08	0.06	1.47	2.16
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	81.18	1.17	0.71	1.63	2.66
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	20.82	1.86	1.21	1.53	2.34
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	75.87	3.71	2.45	1.52	2.30
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.59	1.74	1.14	1.53	2.33
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	19.51	1.84	1.18	1.56	2.43

See notes at end of table.

**Table L-40. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Hispanic B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	34.21	2.12	1.42	1.50	2.24
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.94	1.59	1.22	1.31	1.71
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.05	0.03	1.45	2.11
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	59.49	2.09	1.47	1.43	2.03
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.56	1.11	0.73	1.51	2.28
Summary statistics						
Minimum		†	†	†	1.31	1.71
25th percentile		†	†	†	1.43	2.03
Median		†	†	†	1.51	2.27
75th percentile		†	†	†	1.56	2.43
Maximum		†	†	†	1.70	2.88

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-41. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Asian B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	89,183.05	5,044.73	2,814.29	1.79	3.21
NPSAS institution control: Public	CONTROL=1	69.65	2.56	1.67	1.54	2.36
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	24.31	2.78	1.55	1.79	3.20
Sex assigned at birth: Female	B3SEX=2	49.79	2.85	1.81	1.57	2.47
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.99	2.60	1.57	1.66	2.75
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	58.88	2.82	1.78	1.58	2.50
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	32.34	2.84	1.69	1.67	2.80
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,441.49	2,318.75	1,782.55	1.30	1.69
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	26.70	2.49	1.60	1.55	2.41
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	25.97	2.90	1.59	1.83	3.33
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	94.76	1.11	0.81	1.38	1.89
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	11.03	1.91	1.13	1.68	2.84
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	52.60	3.00	1.81	1.66	2.74
Age, as of 12/31/2018	B3age (mean)	33.93	0.21	0.12	1.76	3.09
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	479.04	36.22	29.13	1.24	1.55
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	90.58	1.98	1.06	1.87	3.49
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.25	3.21	1.78	1.80	3.23
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	0.88	0.43	0.34	1.27	1.61
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.43	2.60	1.60	1.62	2.63
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.06	0.09	0.06	1.42	2.02
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	77.39	1.42	0.84	1.69	2.84
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	14.22	1.96	1.27	1.55	2.41
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	38.46	4.14	2.47	1.68	2.82
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	9.79	1.74	1.08	1.61	2.60
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	3.65	0.99	0.68	1.46	2.14

See notes at end of table.

**Table L-41. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Asian B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	25.67	2.60	1.58	1.64	2.70
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	9.54	1.41	1.06	1.33	1.76
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.52	0.05	0.03	1.65	2.73
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.76	2.82	1.61	1.75	3.06
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.57	1.54	0.82	1.88	3.54
Summary statistics						
Minimum		†	†	†	1.24	1.55
25th percentile		†	†	†	1.54	2.36
Median		†	†	†	1.65	2.71
75th percentile		†	†	†	1.75	3.06
Maximum		†	†	†	1.88	3.54

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-42. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for B&B:08-eligible sample members of another race: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	70,890.84	3,732.10	2,532.52	1.47	2.17
NPSAS institution control: Public	CONTROL=1	57.64	3.65	2.44	1.50	2.25
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	23.47	3.36	2.09	1.61	2.58
Sex assigned at birth: Female	B3SEX=2	57.34	4.31	2.44	1.77	3.12
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	70.36	3.63	2.25	1.61	2.59
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	61.75	4.21	2.40	1.76	3.08
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	39.44	3.67	2.41	1.52	2.31
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,614.76	2,437.70	2,104.38	1.16	1.34
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	29.01	3.49	2.24	1.56	2.43
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	27.91	3.58	2.21	1.62	2.61
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.61	2.47	1.62	1.52	2.31
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	6.72	1.90	1.24	1.54	2.38
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	59.00	3.64	2.43	1.50	2.25
Age, as of 12/31/2018	B3age (mean)	36.55	0.53	0.34	1.54	2.38
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	410.56	62.88	41.36	1.52	2.31
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.16	2.29	1.70	1.34	1.80
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	36.81	3.68	2.38	1.55	2.39
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	8.09	2.03	1.34	1.51	2.27
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	71.53	3.43	2.23	1.54	2.37
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.28	0.12	0.09	1.42	2.03
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	82.65	1.60	1.08	1.49	2.21
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	24.63	3.36	2.13	1.58	2.50
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	50.67	5.50	3.57	1.54	2.37
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	19.86	2.71	1.97	1.38	1.89
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	15.91	2.53	1.80	1.40	1.97

See notes at end of table.

**Table L-42. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for B&B:08-eligible sample members of another race: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	31.17	3.50	2.28	1.53	2.34
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.65	3.17	2.03	1.56	2.44
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.85	0.09	0.05	1.67	2.79
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	70.32	3.10	2.25	1.37	1.89
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	92.72	1.92	1.28	1.49	2.23
Summary statistics						
Minimum		†	†	†	1.16	1.34
25th percentile		†	†	†	1.49	2.21
Median		†	†	†	1.53	2.33
75th percentile		†	†	†	1.56	2.44
Maximum		†	†	†	1.77	3.12

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian. BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-43. Design effects for selected variables using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Male B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	85,765.89	1,233.74	885.33	1.39	1.94
NPSAS institution control: Public	CONTROL=1	64.83	0.75	0.67	1.12	1.25
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	27.96	0.80	0.63	1.27	1.62
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	82.12	0.80	0.54	1.49	2.23
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	51.11	1.14	0.70	1.62	2.61
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.11	1.10	0.69	1.59	2.53
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,691.50	827.43	615.51	1.34	1.81
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	24.89	0.91	0.61	1.49	2.22
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	28.84	1.12	0.64	1.76	3.10
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	91.37	0.59	0.40	1.50	2.24
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	16.38	0.71	0.52	1.36	1.86
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	61.45	1.06	0.68	1.54	2.38
Race/ethnicity (with multiple): White	RACE=1	75.48	1.07	0.61	1.77	3.14
Age, as of 12/31/2018	B3age (mean)	35.85	0.14	0.09	1.55	2.41
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	444.49	15.70	11.24	1.40	1.95
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	90.42	0.70	0.41	1.68	2.82
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	45.08	0.99	0.70	1.41	1.99
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	7.39	0.50	0.37	1.35	1.83
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	78.32	0.90	0.58	1.55	2.41
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.12	0.04	0.03	1.71	2.92
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.18	0.46	0.27	1.69	2.85
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	16.97	0.81	0.53	1.52	2.33
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	51.83	1.59	1.11	1.43	2.06
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	11.95	0.67	0.46	1.48	2.18
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	9.94	0.58	0.42	1.38	1.91

See notes at end of table.



**Table L-43. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Male B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	29.67	0.90	0.64	1.41	1.98
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	14.28	0.68	0.49	1.37	1.88
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.83	0.02	0.02	1.50	2.25
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	74.25	0.87	0.62	1.42	2.02
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.19	0.53	0.33	1.60	2.56
Summary statistics						
Minimum		†	†	†	1.12	1.25
25th percentile		†	†	†	1.39	1.94
Median		†	†	†	1.49	2.23
75th percentile		†	†	†	1.59	2.53
Maximum		†	†	†	1.77	3.14

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-44. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Female B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	62,926.58	908.40	544.18	1.67	2.79
NPSAS institution control: Public	CONTROL=1	61.40	0.56	0.57	0.98	0.96
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	20.00	0.65	0.47	1.39	1.94
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.31	0.84	0.54	1.55	2.39
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	57.27	0.87	0.58	1.50	2.26
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.61	0.91	0.58	1.58	2.50
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,658.10	618.97	484.18	1.28	1.63
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	28.45	0.71	0.53	1.35	1.82
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	25.24	0.70	0.51	1.38	1.91
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	83.65	0.55	0.43	1.27	1.62
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	10.03	0.53	0.35	1.52	2.30
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	63.16	0.89	0.56	1.57	2.47
Race/ethnicity (with multiple): White	RACE=1	71.44	0.85	0.53	1.60	2.57
Age, as of 12/31/2018	B3age (mean)	36.08	0.14	0.08	1.71	2.93
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	413.84	9.79	7.65	1.28	1.64
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.32	0.55	0.42	1.29	1.67
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	38.07	0.84	0.57	1.48	2.20
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	1.90	0.24	0.16	1.53	2.35
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.09	0.74	0.54	1.37	1.87
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.32	0.03	0.02	1.27	1.60
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	83.83	0.41	0.26	1.60	2.56
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	25.11	0.67	0.51	1.33	1.77
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	65.55	1.42	0.96	1.48	2.18
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.63	0.65	0.45	1.46	2.12
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.92	0.61	0.39	1.56	2.43

See notes at end of table.

**Table L-44. Design effects for selected variable values using analysis weight WTJ000 (B&B:08/18, B&B:08/12, and transcript response) for Female B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.63	0.82	0.55	1.48	2.18
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	24.63	0.68	0.50	1.36	1.84
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.02	0.01	1.54	2.37
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	66.43	0.75	0.55	1.35	1.84
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.82	0.39	0.28	1.40	1.97
Summary statistics						
Minimum		†	†	†	0.98	0.96
25th percentile		†	†	†	1.35	1.82
Median		†	†	†	1.47	2.15
75th percentile		†	†	†	1.55	2.39
Maximum		†	†	†	1.71	2.93

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-45. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	73,143.21	824.06	522.66	1.58	2.49
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	23.49	0.35	0.39	0.89	0.79
Sex assigned at birth: Female	B3SEX=2	57.49	0.27	0.46	0.58	0.33
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.35	0.63	0.41	1.55	2.40
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	55.13	0.69	0.46	1.49	2.23
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.33	0.76	0.46	1.66	2.75
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,675.09	508.51	387.06	1.31	1.73
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.71	0.56	0.41	1.35	1.83
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	26.64	0.69	0.41	1.67	2.80
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.00	0.39	0.31	1.25	1.56
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.77	0.44	0.31	1.42	2.02
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	62.98	0.72	0.45	1.60	2.57
Race/ethnicity (with multiple): White	RACE=1	73.39	0.73	0.41	1.77	3.13
Age, as of 12/31/2018	B3age (mean)	36.00	0.10	0.06	1.55	2.42
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	424.82	8.86	6.60	1.34	1.81
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	86.85	0.46	0.31	1.47	2.16
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.39	0.70	0.46	1.53	2.35
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.33	0.29	0.19	1.53	2.33
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.40	0.61	0.41	1.49	2.23
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.25	0.03	0.02	1.50	2.25
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.18	0.30	0.19	1.58	2.49
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.55	0.52	0.38	1.37	1.87
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	60.52	1.21	0.77	1.58	2.50
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.15	0.46	0.33	1.39	1.92
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	11.64	0.43	0.30	1.45	2.12

See notes at end of table.

**Table L-45. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	31.82	0.59	0.43	1.35	1.83
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.00	0.45	0.37	1.22	1.49
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.90	0.02	0.01	1.51	2.29
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	69.63	0.57	0.43	1.34	1.79
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.07	0.32	0.22	1.47	2.15
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.34	1.81
Median		†	†	†	1.47	2.16
75th percentile		†	†	†	1.55	2.42
Maximum		†	†	†	1.77	3.13

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-46. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members at public institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	71,458.75	1,030.49	653.63	1.58	2.49
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	20.43	0.62	0.49	1.26	1.60
Sex assigned at birth: Female	B3SEX=2	55.99	0.60	0.60	1.00	1.00
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	74.80	0.76	0.53	1.43	2.06
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	55.40	0.93	0.60	1.54	2.39
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	43.88	1.01	0.60	1.67	2.80
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,166.29	671.26	506.96	1.32	1.75
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	26.81	0.76	0.54	1.41	1.98
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	28.23	0.85	0.55	1.55	2.40
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.78	0.52	0.42	1.23	1.51
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	12.40	0.59	0.40	1.47	2.16
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	64.92	0.89	0.58	1.54	2.37
Race/ethnicity (with multiple): White	RACE=1	73.55	0.88	0.54	1.63	2.67
Age, as of 12/31/2018	B3age (mean)	35.40	0.11	0.07	1.53	2.35
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	400.34	12.12	8.84	1.37	1.88
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	87.07	0.62	0.41	1.53	2.33
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	42.27	0.88	0.60	1.46	2.14
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	3.34	0.34	0.22	1.57	2.46
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	73.79	0.75	0.53	1.41	1.99
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.24	0.04	0.02	1.51	2.28
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.68	0.37	0.25	1.50	2.24
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	22.34	0.65	0.51	1.28	1.64
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	60.67	1.67	0.98	1.71	2.94
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	14.24	0.55	0.42	1.30	1.69
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	9.89	0.49	0.36	1.34	1.80

See notes at end of table.

**Table L-46. Design effects for selected variables using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members at public institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	27.45	0.77	0.54	1.42	2.00
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.04	0.66	0.50	1.33	1.76
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.93	0.02	0.01	1.50	2.24
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	71.34	0.69	0.55	1.26	1.60
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.53	0.37	0.28	1.34	1.79
Summary statistics						
Minimum		†	†	†	1.00	1.00
25th percentile		†	†	†	1.33	1.76
Median		†	†	†	1.45	2.10
75th percentile		†	†	†	1.54	2.37
Maximum		†	†	†	1.71	2.94

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-47. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	77,107.44	1,484.71	943.63	1.57	2.48
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	25.93	1.09	0.67	1.61	2.61
Sex assigned at birth: Female	B3SEX=2	59.99	1.03	0.75	1.37	1.87
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.60	1.04	0.68	1.54	2.37
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	57.19	1.22	0.76	1.61	2.58
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	37.45	1.18	0.74	1.58	2.51
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,346.66	956.55	654.65	1.46	2.13
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	28.21	1.03	0.69	1.49	2.23
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	25.38	1.06	0.67	1.59	2.52
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	87.89	0.71	0.50	1.42	2.02
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	14.13	0.85	0.53	1.59	2.53
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	59.47	1.16	0.75	1.55	2.39
Race/ethnicity (with multiple): White	RACE=1	75.79	1.02	0.66	1.55	2.40
Age, as of 12/31/2018	B3age (mean)	35.95	0.19	0.11	1.69	2.85
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	458.58	15.43	10.92	1.41	2.00
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	88.05	0.73	0.50	1.47	2.15
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.16	1.18	0.76	1.56	2.44
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	4.95	0.47	0.33	1.42	2.01
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.86	1.05	0.68	1.53	2.35
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.36	0.04	0.03	1.46	2.13
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	84.20	0.49	0.32	1.53	2.33
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	19.77	0.93	0.61	1.52	2.30
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	53.87	1.83	1.25	1.47	2.16
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	15.77	0.74	0.56	1.32	1.75
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.51	0.75	0.51	1.47	2.17

See notes at end of table.



**Table L-47. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members at private nonprofit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	37.72	1.18	0.74	1.58	2.49
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	19.78	0.82	0.61	1.34	1.81
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.03	0.02	1.55	2.40
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	68.26	0.97	0.71	1.36	1.84
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.15	0.62	0.39	1.59	2.52
Summary statistics						
Minimum		†	†	†	1.32	1.75
25th percentile		†	†	†	1.46	2.13
Median		†	†	†	1.53	2.34
75th percentile		†	†	†	1.58	2.49
Maximum		†	†	†	1.69	2.85

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-48. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members at private for-profit institutions: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	67,915.35	3,453.56	1,957.29	1.76	3.11
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	48.15	3.72	2.14	1.74	3.02
Sex assigned at birth: Female	B3SEX=2	60.44	2.93	2.10	1.40	1.95
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	73.55	3.33	1.89	1.76	3.10
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	36.71	3.45	2.07	1.67	2.79
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	33.85	3.25	2.03	1.60	2.56
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	36,480.21	1,730.27	1,268.08	1.36	1.86
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	14.69	2.56	1.52	1.69	2.85
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	13.71	2.70	1.47	1.83	3.36
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	97.40	1.07	0.68	1.57	2.47
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	8.28	1.98	1.18	1.68	2.81
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	61.13	3.97	2.09	1.90	3.61
Race/ethnicity (with multiple): White	RACE=1	54.28	4.48	2.14	2.10	4.40
Age, as of 12/31/2018	B3age (mean)	44.40	0.80	0.42	1.91	3.64
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	458.94	35.14	22.72	1.55	2.39
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	75.49	2.86	1.84	1.55	2.41
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	30.82	3.40	1.98	1.72	2.94
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	13.55	2.05	1.47	1.39	1.94
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	71.95	3.34	1.93	1.73	3.01
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	2.58	0.12	0.07	1.78	3.17
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	85.39	1.71	0.98	1.74	3.02
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	23.41	2.80	1.82	1.54	2.37
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	97.64	7.03	3.94	1.78	3.18
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	23.14	2.73	1.81	1.51	2.28
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	29.59	3.28	1.96	1.68	2.81

See notes at end of table.

**Table L-48. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for all B&B:08-eligible sample members at private for-profit institutions: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	49.74	3.37	2.14	1.57	2.48
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	7.33	1.86	1.12	1.66	2.76
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.95	0.07	0.05	1.45	2.11
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	55.84	3.51	2.13	1.65	2.72
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.36	1.35	0.99	1.36	1.85
Summary statistics						
Minimum		†	†	†	1.36	1.85
25th percentile		†	†	†	1.55	2.39
Median		†	†	†	1.67	2.80
75th percentile		†	†	†	1.76	3.10
Maximum		†	†	†	2.10	4.40

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-49. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for White B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	74,903.39	953.58	619.50	1.54	2.37
NPSAS institution control: Public	CONTROL=1	62.99	0.42	0.53	0.79	0.63
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	22.38	0.53	0.45	1.18	1.38
Sex assigned at birth: Female	B3SEX=2	55.96	0.50	0.54	0.93	0.86
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.85	0.68	0.47	1.45	2.10
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	52.98	0.80	0.54	1.48	2.18
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	44.40	0.85	0.54	1.57	2.46
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,404.72	601.99	424.00	1.42	2.02
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	26.69	0.66	0.48	1.36	1.85
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	28.78	0.74	0.49	1.49	2.22
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	86.19	0.50	0.38	1.34	1.79
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	13.81	0.53	0.38	1.42	2.02
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	67.51	0.77	0.51	1.52	2.30
Age, as of 12/31/2018	B3age (mean)	35.67	0.12	0.07	1.65	2.71
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	438.98	11.15	7.93	1.41	1.98
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	89.25	0.49	0.34	1.44	2.06
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	44.43	0.78	0.54	1.43	2.05
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	4.06	0.30	0.22	1.40	1.95
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	74.37	0.71	0.48	1.49	2.23
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.31	0.03	0.02	1.42	2.02
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.80	0.33	0.21	1.59	2.54
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	21.04	0.63	0.44	1.41	1.99
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	52.74	1.39	0.88	1.58	2.50
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	13.40	0.50	0.37	1.35	1.82
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	8.80	0.42	0.31	1.35	1.83

See notes at end of table.

**Table L-49. Design effects for selected variables using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for White B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	30.77	0.73	0.50	1.44	2.08
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	20.87	0.58	0.44	1.31	1.73
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.95	0.02	0.01	1.52	2.31
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	73.28	0.63	0.48	1.30	1.69
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.90	0.38	0.26	1.45	2.09
Summary statistics						
Minimum		†	†	†	0.79	0.63
25th percentile		†	†	†	1.35	1.83
Median		†	†	†	1.43	2.04
75th percentile		†	†	†	1.49	2.23
Maximum		†	†	†	1.65	2.71

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-50. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Black B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	57,790.84	1,882.56	1,140.56	1.65	2.72
NPSAS institution control: Public	CONTROL=1	60.08	2.37	1.54	1.53	2.35
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	33.40	2.25	1.49	1.51	2.29
Sex assigned at birth: Female	B3SEX=2	68.59	2.53	1.46	1.73	2.98
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.18	2.41	1.47	1.64	2.69
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	67.05	2.44	1.48	1.65	2.71
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	25.42	2.05	1.37	1.49	2.23
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	48,125.44	2,051.56	1,730.85	1.19	1.40
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	30.38	1.90	1.45	1.31	1.72
Highest education attained by either parent: Bachelor's degree	B3PAREDUC=6	15.80	1.85	1.15	1.61	2.58
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	89.42	1.42	0.97	1.46	2.14
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	9.43	1.51	0.92	1.63	2.67
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	43.79	2.48	1.56	1.59	2.52
Age, as of 12/31/2018	B3age (mean)	39.18	0.47	0.29	1.62	2.61
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	405.76	27.87	20.00	1.39	1.94
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	70.36	2.16	1.44	1.50	2.25
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	27.81	2.27	1.41	1.61	2.59
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	6.94	1.40	0.80	1.75	3.05
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.68	2.05	1.45	1.41	2.00
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.03	0.10	0.06	1.81	3.29
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	82.11	1.08	0.75	1.43	2.04
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	32.65	2.18	1.48	1.48	2.18
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	111.70	3.43	2.38	1.44	2.08
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	30.60	2.08	1.45	1.43	2.06
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	31.06	2.29	1.46	1.57	2.46

See notes at end of table.

**Table L-50. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Black B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	42.93	2.55	1.56	1.63	2.67
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	19.44	1.93	1.25	1.54	2.38
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.82	0.05	0.04	1.41	1.98
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	46.99	2.44	1.57	1.55	2.40
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.33	0.92	0.67	1.38	1.90
Summary statistics						
Minimum		†	†	†	1.19	1.40
25th percentile		†	†	†	1.43	2.06
Median		†	†	†	1.54	2.37
75th percentile		†	†	†	1.63	2.67
Maximum		†	†	†	1.81	3.29

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-51. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Hispanic B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview: Annualized salary	B3CJSAL (mean)	61,200.64	1,785.99	1,256.55	1.42	2.02
NPSAS institution control: Public	CONTROL=1	61.21	2.36	1.50	1.57	2.47
Field of study: undergraduate (10 categories): Business	MAJORS4Y=8	23.15	2.22	1.30	1.70	2.90
Sex assigned at birth: Female	B3SEX=2	63.57	2.37	1.49	1.59	2.54
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.44	2.04	1.43	1.42	2.03
Enrolled in any degree programs between BA completion and B&B:08/18 interview: Enrolled since BA	B3PSTGRD=1	55.61	2.42	1.53	1.58	2.49
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	35.98	2.25	1.48	1.52	2.31
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	27,560.25	1,423.26	1,149.23	1.24	1.53
Highest degree completed between BA completion and B&B:08/18 interview: Master's degree	B3HIDEG=5	24.00	2.02	1.32	1.53	2.34
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	18.66	1.84	1.20	1.53	2.35
Regular classroom teacher status between BA completion and B&B:08/18 interview: Never a regular teacher	B3REGTCHST=0	85.06	1.51	1.10	1.37	1.88
Current job, as of B&B:08/18 interview: Business managers	B3CJOCC33=4	10.66	1.49	0.95	1.56	2.45
Housing Status, as of B&B:08/18 interview: Own home	B3HOUSE=1	52.81	2.61	1.54	1.69	2.87
Age, as of 12/31/2018	B3age (mean)	36.72	0.31	0.20	1.54	2.36
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	350.23	25.09	17.69	1.42	2.01
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	81.30	1.96	1.20	1.63	2.64
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	30.82	2.24	1.43	1.57	2.46
Military status, as of B&B:08/18 interview: Veteran	B3VET=1	5.08	1.06	0.68	1.56	2.43
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	67.88	2.10	1.44	1.46	2.13
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.04	0.09	0.06	1.52	2.30
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	81.37	1.24	0.74	1.68	2.82
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	20.16	1.82	1.24	1.47	2.17
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	77.43	3.77	2.53	1.49	2.22
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	16.61	1.73	1.15	1.51	2.28
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	18.79	1.77	1.21	1.47	2.15

See notes at end of table.



**Table L-51. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Hispanic B&B:08-eligible sample members: 2018—Continued**

Variable	Defined as	Percent estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	34.35	2.24	1.47	1.53	2.34
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.09	1.62	1.26	1.28	1.65
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.84	0.05	0.03	1.50	2.24
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	60.37	2.20	1.51	1.46	2.13
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.10	1.03	0.73	1.41	1.99
Summary statistics						
Minimum		†	†	†	1.24	1.53
25th percentile		†	†	†	1.46	2.13
Median		†	†	†	1.52	2.30
75th percentile		†	†	†	1.57	2.46
Maximum		†	†	†	1.70	2.90

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-52. Design effects for selected variables using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Asian B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	89,199.23	5,329.63	2,903.63	1.84	3.37
NPSAS institution control: Public	CONTROL=1	70.54	2.79	1.72	1.62	2.63
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	23.29	2.82	1.59	1.77	3.14
Sex assigned at birth: Female	B3SEX=2	51.52	3.15	1.88	1.67	2.80
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	75.93	2.61	1.61	1.62	2.63
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	58.76	3.06	1.85	1.65	2.73
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	34.14	3.09	1.79	1.73	3.00
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	26,465.36	2,568.26	1,840.33	1.40	1.95
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	25.29	2.55	1.64	1.56	2.42
Highest education attained by either parent:						
Bachelor's degree	B3PAREDUC=6	26.46	2.84	1.66	1.71	2.92
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	95.55	1.04	0.78	1.34	1.81
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	11.07	2.04	1.18	1.72	2.97
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	51.87	3.30	1.88	1.75	3.07
Age, as of 12/31/2018	B3age (mean)	33.88	0.19	0.11	1.75	3.05
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	457.70	39.02	29.51	1.32	1.75
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	90.17	2.11	1.12	1.89	3.56
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	41.75	3.71	1.86	2.00	3.99
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	0.87	0.47	0.35	1.34	1.81
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	75.65	2.47	1.62	1.53	2.33
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.07	0.10	0.07	1.44	2.07
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	76.83	1.39	0.90	1.56	2.42
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	13.35	1.97	1.28	1.53	2.36
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	40.61	4.50	2.67	1.68	2.83
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	10.12	1.87	1.14	1.64	2.70
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	4.34	1.14	0.77	1.48	2.19

See notes at end of table.

**Table L-52. Design effects for selected variables using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Asian B&B:08-eligible sample members: 2018—Continued**

Variable	Defined as	Percent estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	25.24	2.77	1.64	1.69	2.87
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	7.86	1.37	1.01	1.35	1.82
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.55	0.05	0.03	1.63	2.65
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	72.03	2.98	1.69	1.76	3.11
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	95.14	1.38	0.81	1.71	2.91
Summary statistics						
Minimum		†	†	†	1.32	1.75
25th percentile		†	†	†	1.53	2.33
Median		†	†	†	1.65	2.71
75th percentile		†	†	†	1.73	3.00
Maximum		†	†	†	2.00	3.99

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-53. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for B&B:08-eligible sample members of another race: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	72,361.07	4,020.52	2,719.96	1.48	2.18
NPSAS institution control: Public	CONTROL=1	57.32	4.01	2.56	1.56	2.44
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	24.77	4.13	2.24	1.84	3.40
Sex assigned at birth: Female	B3SEX=2	57.62	4.11	2.56	1.60	2.57
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	69.80	3.73	2.38	1.57	2.46
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	65.18	4.15	2.47	1.68	2.82
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.85	3.80	2.55	1.49	2.22
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,319.68	2,825.02	2,292.70	1.23	1.52
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	28.02	3.41	2.33	1.47	2.15
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	28.76	3.69	2.35	1.57	2.47
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	89.01	2.37	1.62	1.46	2.14
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	6.75	1.97	1.30	1.51	2.29
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	58.56	3.79	2.55	1.48	2.20
Age, as of 12/31/2018	B3age (mean)	36.97	0.59	0.39	1.53	2.35
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	409.89	69.15	41.58	1.66	2.77
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.30	2.56	1.89	1.36	1.84
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	36.36	3.94	2.49	1.58	2.50
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	8.13	2.15	1.42	1.52	2.31
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	72.26	3.51	2.32	1.51	2.28
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.29	0.14	0.09	1.52	2.30
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	82.59	1.74	1.14	1.53	2.33
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	23.92	3.40	2.21	1.54	2.36
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	55.18	5.70	3.80	1.50	2.25
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	20.44	2.77	2.09	1.33	1.76
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	19.81	3.02	2.07	1.46	2.14

See notes at end of table.

**Table L-53. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for B&B:08-eligible sample members of another race: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	31.97	3.38	2.42	1.40	1.95
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	21.13	3.23	2.12	1.53	2.33
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.87	0.09	0.06	1.65	2.73
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	66.52	3.37	2.45	1.38	1.89
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	92.62	2.00	1.36	1.48	2.18
Summary statistics						
Minimum		†	†	†	1.23	1.52
25th percentile		†	†	†	1.47	2.15
Median		†	†	†	1.52	2.30
75th percentile		†	†	†	1.57	2.46
Maximum		†	†	†	1.84	3.40

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian. BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-54. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Male B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	85,756.65	1,332.90	916.56	1.45	2.11
NPSAS institution control: Public	CONTROL=1	65.09	0.76	0.69	1.09	1.19
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	27.85	0.92	0.65	1.40	1.97
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	82.32	0.86	0.56	1.54	2.39
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	51.57	1.20	0.73	1.64	2.71
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	40.59	1.19	0.72	1.67	2.78
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	25,417.15	883.41	625.17	1.41	2.00
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	24.43	0.93	0.63	1.49	2.22
Highest education attained by either parent:						
Bachelor's degree	B3PAREduc=6	28.91	1.14	0.66	1.73	2.98
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	91.41	0.61	0.41	1.48	2.20
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	16.28	0.75	0.54	1.39	1.93
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	62.02	1.10	0.71	1.55	2.41
Race/ethnicity (with multiple): White	RACE=1	76.04	1.09	0.62	1.75	3.07
Age, as of 12/31/2018	B3age (mean)	35.90	0.14	0.09	1.51	2.27
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	446.62	17.70	11.95	1.48	2.19
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	90.13	0.77	0.43	1.77	3.13
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	45.49	1.08	0.73	1.49	2.22
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	7.71	0.54	0.39	1.40	1.96
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	78.74	0.92	0.60	1.55	2.39
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.12	0.04	0.03	1.56	2.44
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	86.39	0.50	0.28	1.77	3.14
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	16.90	0.85	0.55	1.55	2.40
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	53.45	1.79	1.17	1.53	2.35
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	11.84	0.67	0.47	1.43	2.05
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	10.50	0.67	0.45	1.50	2.24

See notes at end of table.

**Table L-54. Design effects for selected variables using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Male B&B:08-eligible sample members: 2018—Continued**

Variable	Defined as	Percent estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	29.31	0.94	0.66	1.41	1.99
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	14.03	0.67	0.51	1.32	1.76
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.86	0.03	0.02	1.54	2.38
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	73.71	0.96	0.64	1.50	2.25
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	94.63	0.51	0.33	1.55	2.40
Summary statistics						
Minimum		†	†	†	1.09	1.19
25th percentile		†	†	†	1.43	2.05
Median		†	†	†	1.50	2.26
75th percentile		†	†	†	1.55	2.41
Maximum		†	†	†	1.77	3.14

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007-08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).

**Table L-55. Design effects for selected variables using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Female B&B:08-eligible sample members: 2018**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Current job, as of B&B:08/18 interview:						
Annualized salary	B3CJSAL (mean)	63,102.91	934.54	564.73	1.65	2.74
NPSAS institution control: Public	CONTROL=1	61.21	0.56	0.59	0.95	0.91
Field of study: undergraduate (10 categories):						
Business	MAJORS4Y=8	20.27	0.68	0.49	1.39	1.93
Employment status considering current job in 2018: Employed full time	B3EMPSTAT=1	68.46	0.86	0.56	1.53	2.33
Enrolled in any degree programs between BA completion and B&B:08/18 interview:						
Enrolled since BA	B3PSTGRD=1	57.75	0.86	0.60	1.45	2.09
Family status (child dependents only), as of B&B:08/18 interview: Married with dependent children	B3MARCHA=4	41.87	0.95	0.60	1.59	2.52
Cumulative amount borrowed in federal student loans, as of 2018	B3FEDCUM3 (mean)	29,344.36	625.24	490.01	1.28	1.63
Highest degree completed between BA completion and B&B:08/18 interview:						
Master's degree	B3HIDEG=5	28.40	0.76	0.55	1.39	1.93
Highest education attained by either parent: Bachelor's degree	B3PAREduc=6	24.95	0.75	0.52	1.43	2.04
Regular classroom teacher status between BA completion and B&B:08/18 interview:						
Never a regular teacher	B3REGTCHST=0	83.74	0.57	0.45	1.27	1.62
Current job, as of B&B:08/18 interview:						
Business managers	B3CJOCC33=4	10.18	0.55	0.37	1.49	2.23
Housing Status, as of B&B:08/18 interview:						
Own home	B3HOUSE=1	63.68	0.91	0.58	1.57	2.45
Race/ethnicity (with multiple): White	RACE=1	71.44	0.90	0.55	1.64	2.69
Age, as of 12/31/2018	B3age (mean)	36.06	0.15	0.09	1.70	2.88
Current monthly payment on student loans, as of 2018	B3LNPAY (mean)	412.19	10.32	7.80	1.32	1.75
Did not meet essential expenses in past 12 months, as of B&B:08/18 interview	B3STRESS=0	84.44	0.56	0.44	1.29	1.65
Had retirement account, as of B&B:08/18 interview: Had both employer-based and non-employer-based retirement accounts	B3RETIRE=3	38.35	0.87	0.59	1.48	2.19
Military status, as of B&B:08/18 interview:						
Veteran	B3VET=1	1.83	0.26	0.16	1.62	2.61
Current job, as of B&B:08/18 interview: Health insurance offered	B3CJHINS=1	69.45	0.78	0.56	1.40	1.97
Number of unique employers between BA completion and B&B:08/18 interview	B3TOTEMP (mean)	3.34	0.03	0.02	1.31	1.72
Percent of time employed between BA completion and B&B:08/18 interview	B3PCEMP (mean)	84.29	0.40	0.26	1.53	2.35
Enrolled in an entirely online degree program between BA completion and B&B:08/18 interview	B3ONLIN=1	25.00	0.71	0.52	1.36	1.86
Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 2018	B3FEDOWEPCT (mean)	65.26	1.66	1.00	1.66	2.74
Currently enrolled in an IDR plan for federal student loans, as of 2018	B3FEDPAYPLAN_INC=1	17.59	0.69	0.46	1.49	2.22
Ever defaulted on student loans, as of 2018	B3EVRDEF=1	12.49	0.61	0.40	1.53	2.35

See notes at end of table.



**Table L-55. Design effects for selected variable values using analysis weight WTK000 (B&B:08/18, B&B:08/12, B&B:08/09, and transcript response) for Female B&B:08-eligible sample members: 2018—Continued**

Variable value	Calculation	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Ever received private student loans, as of B&B:08/18 interview	B3PRIVLN=1	33.67	0.86	0.57	1.50	2.26
Taught at K-12 level between BA completion and B&B:08/18 interview	B3EVRTCH=1	24.41	0.68	0.52	1.32	1.74
Number of dependent children, as of B&B:08/18 interview	B3DEP2 (mean)	0.94	0.02	0.01	1.60	2.57
Result of sale of all major possessions, as of B&B:08/18 interview: Have something left over	B3SELLPO=1	66.61	0.77	0.57	1.35	1.83
Sexual orientation, as of B&B:08/18 interview: Straight	B3LGBTQ=2	93.66	0.44	0.29	1.50	2.26
Summary statistics						
Minimum		†	†	†	0.95	0.91
25th percentile		†	†	†	1.35	1.83
Median		†	†	†	1.49	2.21
75th percentile		†	†	†	1.57	2.45
Maximum		†	†	†	1.70	2.88

† Not applicable.

<sup>1</sup> DEFT is the square root of DEFF and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF is the survey design effect for a statistic and is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size (if that were practical).

NOTE: BA = bachelor's degree. IDR = income-driven repayment. K-12 = kindergarten through 12th grade. The universe for the B&amp;B:08 cohort is composed of the subset of the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) student universe who completed a bachelor's degree between July 1, 2007, and June 30, 2008.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2018/08 Baccalaureate and Beyond Longitudinal Study (B&amp;B:08/18).