2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17)

Data File Documentation

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Executive Summary

The 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), conducted by the National Center for Education Statistics (NCES) at the U.S. Department of Education, is the first follow-up of baccalaureate degree recipients who completed their degree in the 2015–16 academic year. B&B:16/17 draws from the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) to create a nationally representative sample of baccalaureate degree recipients. The data collected in this first follow-up are intended to provide researchers and policymakers with key information on student debt and repayment and postbaccalaureate enrollment and employment outcomes one year after completion of a 2015–16 baccalaureate degree.

Sampling Design

The target population the B&B:16/17 full-scale collection consisted of all students who completed a baccalaureate degree during the 2015–16 academic year at any postsecondary institution in the United States that was eligible for inclusion in NPSAS:16 (institutions that were eligible to provide Title IV support to student). The participating institutions and several administrative data sources provided data to aid in identifying potential graduates within the NPSAS:16 sampling frame. NPSAS:16 purposefully oversampled these students in order to provide a sufficient pool of students from which to draw the B&B:16 cohort.

The sample for B&B:16/17 consisted of two groups according to their base-year response status: NPSAS:16 study members who completed the student survey and identified themselves as a baccalaureate recipient during the 2015–16 academic year; and a subsample of NPSAS:16 sample members who did not respond to the NPSAS:16 student survey but were identified as potential baccalaureate recipients on enrollment lists from institutions. The final sample comprised approximately 28,800 sample members. The weighted response rate was 71 percent.

Student Interview Design and Data Collection

As part of a longitudinal study, the B&B:16/17 student survey included many long-standing B&B data elements such as postbaccalaureate enrollment, financial aid and borrowing, and employment history. The B&B:16/17 survey was broken down into six key content areas—undergraduate education, postbaccalaureate education and training, financial aid, postbaccalaureate employment, teaching, and background.

Data collection for the B&B:16/17 survey consisted of five operational phases: an early completion phase, a production phase I, a production phase II, a nonresponse conversion phase, and an extension phase. Forty-eight percent of all completed surveys were completed during the early completion phase, 24 percent during production phase I, 11 percent during production phase II, 6 percent during the nonresponse conversion phase, and 11 percent during the extension phase. Throughout the entire data collection, sample members could complete the survey via telephone or web (nonmobile and mobile); the two were identical in terms of content. Quality control procedures used during data collection included frequent monitoring of recorded interviews, a help desk to assist sample members, quality circle meetings to facilitate communication among staff members, and debriefing meetings.

Of the total sample, 26,260 students were located and 19,490 (76 percent of the eligible sample) completed a full, abbreviated, or partial survey. About 11,940 (61 percent) of the surveys were completed by web on a nonmobile device; 5,480 (28 percent) were completed by web on a mobile device; and 2,080 (11 percent) were completed by telephone.

Administrative Data Sources

In addition to the student interview, a portion of the student data for B&B:16/17 came from administrative databases. The B&B:16 cohort was matched to the Central Processing System (CPS) and the National Student Loan Data System (NSLDS). Additional data sources included the National Student Clearinghouse (NSC) and the Veterans Benefits Administration. CPS offers information collected on students' Free Application for Federal Student Aid form; this information was available for 20 percent of those who had data available for matching in the 2016–17 financial aid year and 16 percent in the 2017–18 financial aid year. NSLDS provided student-level data on the nature and amount of Pell Grants and federal student loans. Of those who had an SSN available to facilitate the match to NSLDS, 74 percent were identified as having a federal student loan, and 58 percent were identified as having received a Pell Grant. The NSC StudentTracker service provided information on postsecondary enrollment, degree, and certificate records on behalf of participating postsecondary institutions; information was identified from at least one institution for all academic years through the 2016–17 academic year for 96 percent of the sample.

Data File Processing and Preparation

Staff processed the B&B:16/17 data using procedures developed and implemented for previous studies sponsored by NCES, including the base-year study. Following data collection, the data collected in the student instrument were subjected to various quality control check procedures. For example, staff confirmed that the data reflected appropriate skip patterns. These procedures also involved examination of all variables with missing data and substitution of specific values to indicate the reason for the missing data.

After disclosure risk avoidance procedures and imputation, analysts created the main study derived variables by examining the data available from the various data sources, prioritizing the data sources on an item-by-item basis, and reconciling discrepancies within and between sources. Details about the creation of each variable appear in the variable descriptions contained in the documentation and codebooks for the restricted files available through the NCES online application PowerStats.[1]

Weighting and Variance Estimation

Because B&B:16/17 sample members are a subset of the NPSAS:16 sample, statisticians derived the weights for analyzing the B&B:16/17 data from the NPSAS:16 student design weights. NPSAS:16 student design weights for B&B:16/17 sample members were adjusted to account for subsampling and nonresponse; and were also calibrated to weighted estimates obtained from NPSAS:16 and population estimates obtained from the Integrated Postsecondary Education Data System (IPEDS:2015–16) completions file (C2016_a).

To protect the confidentiality of study member information and to minimize disclosure risks, B&B:16/17 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. An extensive data quality check was carried out to assess and limit the impact of swapping.

After swapping, missing data were imputed for all variables included in the restricted-use derived file and in the public-use data available through PowerStats. After filling in missing data for cases where values could be deduced with certainty based upon logical or mathematical relationships among observed variables, the weighted sequential hot deck method was used to replace missing data by imputing

[1] PowerStats can be accessed at https://nces.ed.gov/datalab/.

plausible values from statistically selected donor cases (Cox 1980; Iannacchione 1982). Apparent anomalies were resolved as the data were examined.

Acknowledgments

We are greatly indebted to the respondents who generously participated in the survey. Their willingness to take the time to share their information and experiences made the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) a success.

We also extend special thanks to members of the Technical Review Panel who provided their expertise to help shape B&B:16/17.

Contents

PAGE

Executive Summary iii

Acknowledgments vii

List of Tables xi

List of Figures xv

Chapter 1. Overview of B&B:16/17 1
- 1.1 Background and Purpose 2
- 1.2 Overview of B&B:16/17 Design and Data Collection 2
- 1.3 Schedule and Products 3

Chapter 2. Sampling Design 5
- 2.1 NPSAS:16 Institution and Student Universe 5
  - 2.1.1 NPSAS:16 Institution Universe 5
  - 2.1.2 NPSAS:16 Student Universe 6
- 2.2 NPSAS:16 Institution and Student Samples 7
  - 2.2.1 NPSAS:16 Institution Sample 7
  - 2.2.2 NPSAS:16 Student Sample 9
  - 2.2.3 NPSAS:16 Study Member 12
- 2.3 B&B:16/17 First Follow-up Study Sampling Design 13
  - 2.3.1 Identification of B&B:16/17 Student Eligibility 14
  - 2.3.2 B&B:16/17 Sampling Design 14

Chapter 3. Survey Design, Data Collection, and Outcomes 18
- 3.1 Survey Design and Systems 18
  - 3.1.1 Survey Mode Administration 22
  - 3.1.2 Coding Systems 22
  - 3.1.3 Survey Design System 24
- 3.2 Survey Data Collection 26
  - 3.2.1 Study Website and Help Desk 26
  - 3.2.2 Training of Interview Data Collection Staff 28
  - 3.2.3 Locating, Tracing, and Contacting Sample Members 29
  - 3.2.4 Confidentiality Pledge Experiment 36
  - 3.2.5 Survey Data Collection Phases and Contacting Methods 39
  - 3.2.6 Résumé Collection 43

PAGE

3.2.7 Survey Data Collection Results ... 46
3.3 Survey Quality Control ... 49
3.3.1 Interview Monitoring ... 49
3.3.2 Quality Circle Meetings ... 49
3.3.3 Survey Timing Burden ... 50
3.3.4 Data Collection Interviewer Hours and Number of Calls ... 56
3.3.5 Debriefing ... 58
3.3.6 Refusal Conversion ... 59
3.3.7 Responsive Design ... 60
3.4 Evaluation of Survey Items ... 67
3.4.1 Coder System Usability ... 67
3.4.2 Help Text ... 68
3.4.3 Conversion Text ... 71
3.4.4 Item-Level Nonresponse ... 76

Chapter 4. Administrative Records Matching ... 80
4.1 Administrative Records Matching Processes and Outcomes ... 80
4.1.1 Central Processing System (CPS) ... 80
4.1.2 National Student Loan Data System (NSLDS) ... 81
4.1.3 National Student Clearinghouse (NSC) ... 82
4.1.4 Veterans Benefits Administration (VBA) ... 83
4.2 Administrative Records Matching Quality Control ... 83

Chapter 5. Data File Processing and Preparation ... 85
5.1 Overview of the B&B:16/17 Study Files ... 85
5.2 Post-Data Collection Editing ... 88
5.2.1 Recoding ... 91
5.2.2 Upcoding ... 92
5.3 Composite and Derived Variable Construction ... 93

Chapter 6. Weighting and Variance Estimation ... 94
6.1 Analysis Weights ... 94
6.1.1 Base Weight for B&B:16/17 ... 96
6.1.2 Nonresponse Adjustments (BB17AWT1 and BB17AWT2) ... 96
6.1.3 Poststratification Adjustment (BB17AWT3) ... 106
6.1.4 Weighting Adjustment Summary and Evaluation ... 109
6.2 Nonresponse Bias Analysis ... 111
6.2.1 Nonresponse Bias Analysis: Student Level ... 113
6.2.2 Nonresponse Bias Analysis: Item Level ... 116
6.3 Variance Estimation ... 118

PAGE

6.3.1 Taylor Series 119
6.3.2 Bootstrap Replicate Weights 120
6.3.3 Software Use for Variance Estimation 123
6.3.4 Variance Approximation 125
6.4 Imputations 126
6.5 Disclosure Risk Analysis and Avoidance 128

References 129

Appendixes

Appendix A. Acronyms and Abbreviations A-1
Appendix B. B&B:16/17 Field Test B-1
Appendix C. Technical Review Panel (TRP) Members C-1
Appendix D. Data Elements for Full-scale Survey D-1
Appendix E. Facsimile of Full-scale Instrument E-1
Appendix F. Training Topics and Agenda for Interviewers F-1
Appendix G. Notification Materials for Survey Data Collection G-1
Appendix H. Analysis Variables H-1
Appendix I. Nonresponse Bias Analysis I-1
Appendix J. Design Effects J-1
Appendix K. Item Response Rates and Imputation Results K-1

List of Tables

TABLE PAGE

1. Chronology of B&B: 1993–2017 2
2. Schedule for the major activities of the B&B:16/17 full-scale study: 2016–19 3
3. Size of NPSAS:16 institution universe, institution sampling rates and number of institutions sampled, by institution stratum: 2015–16 8
4. Number of sampled and eligible institutions and number and percentage of institutions providing enrollment lists, by control and level of institution: 2015–16 9
5. Number of sampled and eligible students and percentages of study membership, by control and level of institution: 2015–16 13
6. Distribution of the potential B&B:16 cohort, by eligibility source: 2017 14
7. Distribution of the B&B:16/17 sample, by NPSAS:16 study member and survey response status: 2017 16
8. Sample size, number of eligible sample members, and unweighted and weighted response rates, by institution control: 2017 17
9. Training of B&B:16/17 data collection staff: 2017 28
10. Batch processing record match rates, by tracing source: 2017 30
11. Cases requiring intensive tracing procedures, by base-year response status and data collection group: 2017 33
12. Located, located eligible, and surveyed status, by base-year response status and data collection group: 2017 35
13. Estimated coefficients, standard errors, and test statistics for pledge wording and placement effects on participation and response rates (main effects only), by pledge experiment conditions: 2017 38
14. Joint and marginal effects for pledge wording and placement effects on participation and response rates, by pledge experiment conditions: 2017 38
15. Abbreviated survey offers and completions, by base-year response status and data collection group: 2017 41
16. Number and percentage of résumés uploaded, by survey type: 2017 43

TABLE PAGE

17. Number and percentage of résumés uploaded, by file type: 2017 44

18. Number and percentage of résumés uploaded, by up-to-date status: 2017 44

19. Number and percentage of résumés uploaded, by résumé type: 2017 45

20. Number and percentage of résumés uploaded, by employers on résumé vs. employers provided in survey: 2017..... 46

21. Distribution of survey respondents, by mode of administration: 2017..... 46

22. Survey completeness, by survey type and base-year response status: 2017 47

23. Survey completeness, by data collection group and survey type: 2017 47

24. Survey completion rates, by eligibility screener completion: 2017..... 49

25. Number and percentage of surveys included and excluded from the timing report, by survey type: 2017..... 51

26. Average time in minutes to complete the full and abbreviated surveys, by mode of administration: 2017..... 52

27. Average time, in minutes, to complete the full survey, by mode of administration and teacher status 2017 53

28. Average time, in minutes, to complete the postbaccalaureate employment section, by mode of administration and teacher status: 2017 53

29. Average time, in minutes, to complete the postbaccalaureate employment section, by mode of administration and number of employers: 2017 54

30. Forms with the highest average survey times in seconds, by form and form type: 2017..... 55

31. Average number of calls, by response status and mode of administration: 2017..... 57

32. Average number of calls, by base-year response status and data collection group: 2017..... 58

33. Refusal and refusal conversion rates, by base-year response status and data collection group: 2017 60

TABLE PAGE

34. Final response rates at the end of each phase, by data collection group: 2017 65

35. Average, median, and maximum absolute relative nonresponse bias, and percentage of significant deviations, by data collection group: 2017 65

36. Average, median, and maximum absolute relative nonresponse bias, and percentage of significant deviations, by data collection group: 2017 66

37. Summary of coding success rate, by mode of administration and coding system: 2017 68

38. Forms with more than 2 percent help text access rates, by mode of administration: 2017 70

39. Conversion rates for forms with critical questions, by mode of administration: 2017 73

40. Conversion rates for forms with critical questions and a hidden "Don't Know" response option, by mode of administration: 2017 75

41. Item nonresponse for items with more than 10 percent of data missing: 2017 77

42. Results of Central Processing System (CPS) matching, by academic year: 2016-18 81

43. Results of National Student Loan Data System (NSLDS) matching, by federal student loan and Pell Grant matching: 2017 82

44. Results of National Student Clearinghouse (NSC) matching: 2017 83

45. Results of Veterans Benefits Administration (VBA) matching: 2017 83

46. B&B:16/17 restricted-use files, description, and file path: 2018 86

47. Missing data codes and descriptions: 2017–18 89

48. Percentage of recoding values, by mode of administration and coding system: 2017 92

49. Summary of upcoding rates, by mode of administration and coding system: 2017 93

50. Weight adjustment factors for not located adjustment: 2017 99

51. Weight adjustment factors for other nonresponse adjustment: 2017 103

52. Weight adjustment factors for poststratification: 2017 108

TABLE PAGE

53. Student weight distribution and unequal weighting effects: 2017 110

54. Summary of student-level nonresponse bias analysis, by control of institution: 2017 115

55. Summary of student-level differences between means, by control of institution: 2017 116

56. Use of analysis weight, replicate weights, and variance estimation strata and primary sampling unit (PSU) variables available from B&B:16/17 in selected survey data analysis software: 2017 124

List of Figures

FIGURE PAGE

1. B&B:16/17 full-scale survey by content area and data elements: 2017 21
2. Home page for B&B:16/17 study website: 2017 27
3. Overall number of located and surveyed sample members: 2017 33
4. Data collection phases: 2017 40
5. Survey completions, by data collection phase: 2017 48
6. Data collection group assignments, by protocol and data collection phase: 2017 62
7. Overall response rates, by data collection group: 2017 64
8. Receiver Operating Characteristic (ROC) curve for overall student response propensity: 2017 111

Chapter 1. Overview of B&B:16/17

This report documents the methods used and procedures followed for the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) conducted by RTI International for the U.S. Department of Education's National Center for Education Statistics (NCES) under ED-IES-13-C-0070. It is the first follow-up survey of a panel of baccalaureate degree recipients originally identified during the 2015–16 National Postsecondary Student Aid Study (NPSAS:16). A second follow up, B&B:16/20, is planned to begin in 2020, with a third follow-up tentatively planned for 2026. This document mainly provides information specific to the first follow-up data collection. Users should refer to the NPSAS:16 Full-scale Data File Documentation for more information about the base-year data collection (https://nces.ed.gov/pubs2018/2018482.pdf).

Chapter 1 of this report describes the background, study design, and schedule. Chapter 2 presents details on the institution and student samples for NPSAS:16 and the subsequent sample for the B&B:16 cohort. Chapter 3 describes the development of the sample member survey, the data collection processes and results, and provides analysis of survey data quality. Chapter 4 describes administrative data collection processes and outcomes. Chapter 5 summarizes the file preparation processes of the survey data. Chapter 6 provides weighting and variance estimation procedures. Materials used during data collection and additional analysis tables are appended to the report and cited in the text where appropriate. Appendix A provides a list of acronyms and abbreviations used throughout the report.

Tables and figures throughout this report present relevant analyses from the full-scale study. Unless otherwise indicated, a probability level of .05 was used for all tests of significance conducted for the B&B:16/17 evaluations. Reported numbers of sample institutions and sample members have been rounded to protect the confidentiality of sampled and participating institutions and individuals. As a result, row and column entries in many of the tables may not sum to their respective totals and reported percentages may differ slightly from those that would result from these rounded numbers.

1.1 Background and Purpose

NCES conducts several studies to respond to the need for nationally representative data related to postsecondary education. These studies include items which address issues such as access, choice, enrollment, persistence, attainment, continuing education in graduate and/or professional schools, and the pecuniary and nonpecuniary benefits of postsecondary education to both individuals and society. B&B is one of several studies sponsored by NCES to address these issues and, specifically, collects information on bachelor's degree recipients and their education and work experiences over time, with a special focus the experiences of elementary and secondary teachers.

NCES is authorized to conduct B&B by the following legislation:

- the Education Sciences Reform Act of 2002, 20 U.S.C. § 9543 and
- the Family Educational Rights and Privacy Act (FERPA, 34 CFR § 99.31 (a)(3)(iii)) and 99.35.

NPSAS studies traditionally serve as the base-year data collection for one of two longitudinal studies, the Beginning Postsecondary Students Longitudinal Study (BPS) or B&B. NPSAS:16 is the base-year data collection for a cohort of bachelor's degree recipients with three planned follow-up collections—in 2017 (B&B:16/17), in 2020 (B&B:16/20), and in 2026 (B&B:16/26). Consequently, subsets of questions in the NPSAS:16 student survey focused on the experience of B&B-eligible students in their last year of postsecondary education and included items on student debt accrual and repayment status, applying to graduate school, and the transition from college to employment. Table 1 shows the chronology of B&B.

Table 1. Chronology of B&B: 1993–2017

B&B cohort	Base year study	First follow-up	Second follow-up	Third follow-up
B&B:93	NPSAS:93	B&B:93/94	B&B:93/97	B&B:93/03
B&B:00	NPSAS:00	B&B:00/01		
B&B:08	NPSAS:08	B&B:08/09	B&B:08/12	B&B:08/18
B&B:16	NPSAS:16	B&B:16/17	B&B:16/20	B&B:16/26 (anticipated)

NOTE: NPSAS = National Postsecondary Student Aid Study.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

1.2 Overview of B&B:16/17 Design and Data Collection

Data collection efforts for B&B:16/17 consisted of a survey and administrative record matching, and included a responsive design, described in section 3.3.7. The

respondent universe for the B&B:16/17 data collection included all individuals who completed requirements for their first bachelor's degree during the 2015–16 academic year and received their degree by June 30, 2017.[1] Full-scale data from sample members were collected via an online eligibility screener with an address update, and a main survey with a request for résumé upload online or through a web-based Computer-Assisted Telephone Interview (CATI). A field test study was conducted in 2016. See appendix B for more information about the B&B:16/17 field test.

In addition to survey data, the full-scale sample was matched with several administrative data sources, including: the National Student Loan Data System (NSLDS), containing federal loan and grant files; the Central Processing System (CPS), which houses and processes data contained in the Free Application for Federal Student Aid (FAFSA) forms; the National Student Clearinghouse (NSC), which provides enrollment and degree verification; and the Veterans Benefits Administration (VBA), which identifies veterans and federal veterans education benefit amounts. A full description of administrative records matching processes and outcomes is provided in chapter 4.

1.3 Schedule and Products

Table 2 shows the schedule for the major activities of the B&B:16/17 full-scale study.

Table 2. Schedule for the major activities of the B&B:16/17 full-scale study: 2016–19

Full-scale activity	Start date	End date
Select sample	Nov. 15, 2016	Apr. 27, 2017
Eligibility screener with address update	July 24, 2017	Aug. 28, 2017
Self-administered web-based data collection	July 24, 2017	June 30, 2018
Conduct telephone interviews	July 24, 2017	June 30, 2018
Re-introduce eligibility screener to all remaining nonrespondents	July 1, 2018	July 22, 2018
Process data, construct data files	July 24, 2017	Dec. 21, 2018
Prepare and update reports	Jan. 8, 2018	Nov. 1, 2019

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

[1] The 2015–16 academic year was from July 1, 2015 – June 30, 2016. The respondent universe includes those who completed all degree program requirements for their bachelor's degree between July 1, 2015 and June 30, 2016 and met all additional requirements for graduation, such as applying for graduation and paying any fines, in time to receive their bachelor's degree by June 30, 2017.

The following reports and web tables will be available on the NCES website at https://nces.ed.gov/surveys/b&b/:

- 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17): A First Look at Recent College Graduates
- 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Data File Documentation
- Web Tables – Profile of 2015–16 First-Time Bachelor's Degree Recipients in 2017
- Early PreK to 12th Grade Teaching Experiences of 2015–16 First-Time Bachelor's Degree Recipients

B&B sample member 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 (e.g., QuickStats, PowerStats, and TrendStats), found at https://nces.ed.gov/datalab, to access and analyze B&B:16/17 restricted-use data without a restricted-use license. These tools permit analysis without disclosing data file contents to the user and suppress or flag any estimates that fail to meet reporting standards. QuickStats is an intuitive graphical tool that allows novice users to generate simple tables and graphs. PowerStats offers greater analytic capabilities and can produce complex tables or estimate simple regression models. TrendStats allows users to produce averages, medians, and percentages for variables repeated across studies and over time. TrendStats also contains the Tables Library which houses thousands of published analysis tables sortable by topic, publication, and source.

Chapter 2. Sampling Design

This chapter describes the institution and student universe, sampling design, and sampling methods for the base-year study, NPSAS:16, and the first follow-up study, B&B:16/17. Identification of the B&B:16/17 sample required a multistage process that began with selection of the NPSAS:16 sample of institutions and was followed by selection of students within these institutions. A third stage confirmed that sample members who, as of NPSAS:16, were expected to complete a bachelor's degree in the 2015–16 academic year or were indeed baccalaureate recipients during that academic year and, therefore, were eligible to be sampled for the B&B:16 cohort. A description of the procedures used for identifying B&B-eligible cohort members is included. All documented procedures and methods were developed and then refined in consultation with a Technical Review Panel (TRP) composed of nationally-recognized experts in higher education, staff from NCES, and representatives from other federal agencies.[2]

2.1 NPSAS:16 Institution and Student Universe

To be eligible for inclusion in the B&B:16 cohort, students must have been part of the student universe at an institution included in the NPSAS:16 institution universe. The definitions of the NPSAS:16 institution and student universes are presented below.

2.1.1 *NPSAS:16 Institution Universe*

The institutions eligible for the NPSAS:16 study were required to meet all criteria for distributing federal Title IV aid during the 2015–16 academic year, including:

- offered an educational program designed for persons who had 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 administered the institution;

[2] See appendix C for a complete list of TRP participants.

- been located in the 50 states, the District of Columbia, or Puerto Rico;
- not been a U. S. service academy institution; and
- have signed the Title IV participation agreement with the U. S. Department of Education.[3]

Institutions providing only avocational, recreational, or remedial courses or only in-house courses for their own employees or members were ineligible. 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/tuition base.

The institution eligibility conditions for NPSAS:16 were consistent with the most recent iterations of NPSAS. The requirement that an institution must be eligible to distribute federal Title IV student aid was first implemented with NPSAS:2000. In NPSAS:2000 it was determined that there was sufficient comparability in survey design to ensure that important comparisons with data from previous NPSAS cycles could be made (Riccobono et al. 2002). Institutions that offered only correspondence courses, provided these same institutions were also eligible to distribute federal Title IV student aid, were first included in NPSAS:04. Finally, while institutions in Puerto Rico were not included in NPSAS:87 and NPSAS:12, they are included in NPSAS:16 and all other administrations of NPSAS.

2.1.2 NPSAS:16 Student Universe

A student was eligible for NPSAS:16 if they were enrolled at any time between July 1, 2015 and June 30, 2016[4] at eligible postsecondary institutions in the United States and who were

- enrolled in *either* (1) an academic program; (2) at least one course for credit that could be applied toward fulfilling the requirements for an academic degree; (3) exclusively noncredit remedial coursework but who the institution determined was eligible for Title IV aid; *or* (4) 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;

[3] 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.
[4] So as to not delay data collection, enrollment lists covered the period of July 1, 2015 through April 30, 2016. The date of April 30 was selected to include virtually all students enrolled prior to the summer term.

- not currently enrolled in high school; and
- not solely enrolled in a high school completion program.

The requirements for NPSAS student eligibility have largely remained constant over time.

2.2 NPSAS:16 Institution and Student Samples

NPSAS:16 used a two-stage sampling design. The first stage involved the selection of institutions and the second stage involved the selection of students from within the sampled institutions. The sampling design for NPSAS:16 is presented below.

2.2.1 NPSAS:16 Institution Sample

The first stage of the NPSAS:16 sample design was a selection of institutions, with a sampling frame derived from various Integrated Postsecondary Education Data Systems (IPEDS) files.[5] NPSAS statisticians selected 2,000 institutions using a variation of probability proportional to size (PPS) sampling called sequential probability minimum replacement (PMR) sampling (Chromy 1979). A composite size measure (Folsom, Potter, and Williams 1987) was used to help achieve self-weighting samples[6] for student-by-institution strata and to allow flexibility to change sampling rates in selected strata without losing the self-weighting attribute of the sampling method. PMR sampling generally allows for institutions to be selected multiple times. Instead of allowing this, NPSAS statisticians ensured that all institutions with a probability of being selected more than once were instead included in the sample one time with certainty. Institution composite measures of size were determined using enrollment data from the 2013–14 12-month Enrollment and Completions files from IPEDS. Table 3 shows the NPSAS:16 institution sampling rate and the number of institutions sampled, by institution stratum.[7]

[5] The IPEDS files used to construct the NPSAS:16 institution frame were formed from the IPEDS 2014–15 Institutional Characteristics Header, 2014–15 Institutional Characteristics, 2013–14 Completions, and 2013–14 12-month Enrollment files.
[6] Self-weighting samples have equal weights within sampling domains.
[7] Unless otherwise indicated, references to "institution type," "institution stratum," or "institution characteristics" are hereafter interchangeable with control and level of institution. Control and level of institution are based on information from the sampling frame, which was formed from the IPEDS 2014–15 Institutional Characteristics Header, 2014–15 Institutional Characteristics, 2013–14 Completions, and 2013–14 12-month Enrollment files.

Table 3. Size of NPSAS:16 institution universe, institution sampling rates and number of institutions sampled, by institution stratum: 2015–16

Institution stratum[1]	Size of universe[2]	Institution sampling rate	Number of institutions sampled
Total	**6,920**	**28.9**	**2,000**
Public			
Less-than-2-year	240	9.3	20
2-year	1,010	37.1	380
4-year, non-doctorate-granting, primarily subbaccalaureate	110	65.4	70
4-year, non-doctorate-granting, primarily baccalaureate	180	53.9	100
4-year, doctorate-granting	350	100.0	350
Private nonprofit			
Less-than-4-year	260	7.6	20
4-year, non-doctorate-granting	890	36.5	330
4-year, doctorate-granting	640	41.7	270
Private for-profit			
Less-than-2-year	1,630	4.3	70
2-year	910	13.2	120
4-year	690	40.7	280

[1] Institution stratum reflects institution categorization as determined from the 2014–15 Institutional Characteristics Header, 2014–15 Institutional Characteristics, 2013–14 Completions, and 2013–14 12-month Enrollment files from IPEDS; some changes in this classification were identified when using more recent IPEDS files for weighting.
[2] Based on the 2014–15 IPEDS data.
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, 2015–16 National Postsecondary Student Aid Study (NPSAS:16).

Table 4 shows the counts of sampled, eligible, and participating institutions, as well as the weighted and unweighted participation rates by control and level of institution. Almost all the 2,000 sampled institutions met the eligibility requirements. Of those 2,000, 1,750 provided enrollment lists. Overall, the NPSAS:16 institution response rate was commensurate with that of previous rounds of NPSAS.

Table 4. Number of sampled and eligible institutions and number and percentage of institutions providing enrollment lists, by control and level of institution: 2015–16

Control and level of institution[1]	Sampled institutions	Eligible institutions	Institutions providing lists		
			Number	Unweighted percent	Weighted percent[2]
Total	**2,000**	**1,990**	**1,750**	**88.0**	**89.6**
Control of institution					
Public	920	920	830	90.2	90.2
Private nonprofit	610	600	530	87.9	88.2
Private for-profit	480	470	400	83.7	88.1
Level of institution					
Less-than-2-year	100	90	70	75.5	75.2
2-year	510	510	450	87.3	88.2
4-year, non-doctorate-granting	730	730	630	86.8	89.9
4-year, doctorate-granting	660	660	610	91.5	91.3
Control and level of institution					
Public less-than-2-year	20	20	20	77.3	77.9
Public 2-year	380	380	330	88.0	88.5
Public 4-year, non-doctorate granting, primarily sub-baccalaureate	70	70	70	92.9	95.3
Public 4-year, non-doctorate granting, primarily baccalaureate	100	100	90	90.6	89.7
Public 4-year, doctorate-granting	350	350	330	92.6	92.0
Private nonprofit, 2-year or less	20	20	20	94.4	94.2
Private nonprofit, 4-year, non-doctorate-granting	330	330	280	86.8	88.2
Private nonprofit, 4-year, doctorate-granting	270	270	240	89.2	88.2
Private for-profit, less-than-2-year	70	70	50	74.3	74.3
Private for-profit, 2-year	120	120	100	83.9	83.1
Private for-profit, 4-year	280	280	240	85.5	92.2

[1] Control and level of institution are based on data from the sampling frame, which was formed from the IPEDS 2014–15 Institutional Characteristics Header file.
[2] The weight used for this column is a base weight. A base weight is one that adjusts for the probability of selection.
NOTE: Percentages are based on the unrounded count of eligible institutions within the row under consideration. 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, 2015–16 National Postsecondary Student Aid Study (NPSAS:16).

2.2.2 NPSAS:16 Student Sample

The second stage of the NPSAS:16 sample design was the selection of a stratified sample of students from the sampled institutions. Each sampled institution verified as NPSAS eligible was asked to provide a complete list of students who satisfied all NPSAS eligibility conditions. These lists included information needed to identify students for matching to administrative records, classify students to create sampling strata, and locate students to conduct the student survey. The student sample was randomly selected via stratified systematic sampling from lists of students enrolled between July 1, 2015 and April 30, 2016 at the sampled institutions. The following

data items were requested from each sampled institution to form the student sampling frame:

- name;
- Social Security number (SSN);
- student ID number (if different from SSN);
- student level (undergraduate, masters, doctoral-research/scholarship/other, doctoral-professional practice, other graduate);
- class level of undergraduates (first year, second year, etc.);
- date of birth (DOB);
- Classification of Instructional Programs (CIP) or major;
- undergraduate degree program;
- high school/completion program completion date (month and year);
- baccalaureate recipient indicator (for students who have already received their bachelor's degree at the NPSAS institution since July 1, 2015);[8]
- potential baccalaureate recipient indicator (for students who are expected to receive their bachelor's degree at the NPSAS institution by June 30, 2016);[8]
- enrollment in high school (or completion program);
- date of first enrollment (at the postsecondary level);
- veteran status;
- grade point average (GPA);
- number of credits accumulated;
- account overdue (student owes fee that would prevent bachelor's degree award);
- race;
- ethnicity;
- sex;
- first-time graduate student at the NPSAS institution indicator; and

[8] Splitting baccalaureate receipt into two items is based on the field test. It made providing baccalaureate information easier for institutions that could not identify the potential baccalaureate recipients and helped with QC checks against IPEDS counts for institutions that could not identify the potential baccalaureate recipients.

- contact information (local and permanent street address and phone number and school and home e-mail address).

The 17 student strata were as follows:

1. potential baccalaureate recipients who are veterans;
2. potential baccalaureate recipients from science, technology, engineering, and mathematics (STEM) programs;
3. potential baccalaureate recipients from teacher education programs;
4. potential baccalaureate recipients from business programs;
5. potential baccalaureate recipients from other programs;
6. other undergraduate students who are veterans;[9]
7. other undergraduate students;[9]
8. graduate students who are veterans;
9. first-time graduate students;
10. master's degree students in STEM programs;
11. master's degree students in education and business programs;
12. master's degree students in other programs;
13. doctoral-research/scholarship/other students in STEM programs;
14. doctoral-research/scholarship/other students in education and business programs;
15. doctoral-research/scholarship/other students in other programs;
16. doctoral-professional practice students; and
17. other graduate students.[10]

Because of the high number of business majors across institutions, potential baccalaureate recipients majoring in business were placed in a separate stratum and selected at a lower sampling rate than potential baccalaureate recipients in other majors. Potential baccalaureate recipients in other majors (e.g., STEM or teacher education programs), and potential baccalaureate recipients who are veterans were oversampled to allow for sufficient sample sizes for analysis. Within each student stratum, enrollment lists were sampled at a rate designed to provide an

[9] *Other undergraduate students* are defined as any undergraduate student not classified as a potential baccalaureate recipient.
[10] *Other graduate students* are those who are not enrolled in a degree program, such as students just taking graduate courses.

approximately equal student-level probability of sampling within institution strata. To help achieve the desired overall NPSAS:16 sample size, student sampling rates were revised after sufficient lists of students who satisfy all NPSAS eligibility conditions had been received. For more detailed information regarding the institution and student sample designs see section 2.3 of the NPSAS:16 Data File Documentation (Wine, Siegel, and Stollberg 2018).

2.2.3 NPSAS:16 Study Member

The NPSAS:16 sampling procedures resulted in the selection of 122,030 students of which 2,500 students were determined ineligible. Upon completion of data collection, 112,820 (94 percent) of the NPSAS-eligible students were determined to have sufficient key data to meet the definition of a respondent. That is, a study member was defined as any eligible sample member for whom, at a minimum, the following data were available from certain combinations of student records, student survey, and administrative, federal, and private databases such as CPS, NSLDS, VBA, ACT, and SAT:

- student type (undergraduate or graduate);
- DOB (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;
  - months enrolled;
  - tuition;
  - received federal aid;
  - received nonfederal aid;
  - student budget;
  - race; and
  - parent education.

Table 5 shows the number of students sampled, the number of eligible students, and the unweighted and weighted rates of study membership, by institution control and level.

Table 5. Number of sampled and eligible students and percentages of study membership, by control and level of institution: 2015–16

Control and level of institution[2]	Sampled students	Eligible students[3]	Study membership[1] Unweighted percent	Study membership[1] Weighted percent[4]
Total	**122,030**	**119,550**	**94.4**	**93.1**
Control of institution				
Public	58,370	56,850	92.7	92.4
Private nonprofit	25,510	25,170	96.6	95.4
Private for-profit	38,150	37,530	95.4	92.8
Level of institution				
Less-than-2-year	3,170	3,050	95.9	96.4
2-year	25,570	24,510	92.1	91.7
4-year, non-doctorate-granting	43,500	42,730	95.1	94.2
4-year, doctorate-granting	49,790	49,260	94.8	93.3
Control and level of institution				
Public less-than-2-year	400	370	97.0	97.5
Public 2-year	18,210	17,350	90.4	91.3
Public 4-year, non-doctorate-granting, primarily subbaccalaureate	5,850	5,610	92.1	91.8
Public 4-year, non-doctorate-granting, primarily baccalaureate	7,090	6,950	93.6	94.0
Public 4-year, doctorate-granting	26,830	26,570	94.2	93.2
Private nonprofit, 2-year or less	990	960	96.7	99.0
Private nonprofit, 4-year, non-doctorate-granting	11,300	11,140	96.5	96.5
Private nonprofit, 4-year, doctorate-granting	14,080	13,910	96.6	94.7
Private for-profit, less-than-2-year	2,610	2,520	96.3	96.4
Private for-profit, 2-year	6,540	6,360	96.0	96.7
Private for-profit, 4-year	28,140	27,810	95.1	90.9

[1] A study member is defined as any eligible sample member for whom sufficient key data were obtained from one or more sources, including the student survey, student records, and the U.S. Department of Education's Central Processing System.
[2] Institution characteristics are based on data from the sampling frame, which was formed from the 2013–14 Integrated Postsecondary Education Data System.
[3] Sample member eligibility was determined during the student survey or from student records in the absence of a student survey.
[4] The weight described in this column is a base weight. A base weight is one that adjusts for the probability of selection.
NOTE: Percentages are based on the unrounded count of eligible institutions within the row under consideration. 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, 2015–16 National Postsecondary Student Aid Study (NPSAS:16).

2.3 B&B:16/17 First Follow-up Study Sampling Design

The third stage of sampling occurs for the selection of the B&B:16/17 sample. Identification of the cohort and the subsequent sampling are presented below.

2.3.1 Identification of B&B:16/17 Student Eligibility

To be included in the B&B:16 cohort, NPSAS:16 sample members were identified through two mechanisms: (1) the student identified themselves as a baccalaureate recipient during the 2015–16 academic year in the NPSAS:16 student survey; or (2) the institution identified the student as a potential baccalaureate recipient on the enrollment list. There were 33,700 NPSAS:16 sample members who were identified via these mechanisms. Table 6 shows the number and distribution of the potential B&B:16 cohort, by eligibility source.

Table 6. Distribution of the potential B&B:16 cohort, by eligibility source: 2017

Eligibility source	Number	Percent
Total	**33,700**	**100.0**
Bachelor's degree confirmed in NPSAS:16 survey	22,580	67.0
Listed as potential bachelor's degree recipient	11,120	33.0

NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

2.3.2 B&B:16/17 Sampling Design

The timing of the NPSAS:16 data collection is such that NPSAS:16 sample members may not have completed the requirements for their bachelor's degree at the time the NPSAS institution provided enrollment lists or even at the time the NPSAS:16 sample member completed the NPSAS:16 student survey. Therefore, the B&B:16/17 sample design's primary goal was to maximize the likelihood of selecting baccalaureate recipients from the 2015–16 academic year.

B&B statisticians utilized results from concordance analysis using student records provided by the sampled NPSAS institution, the NSC data on degree completion, and the NSLDS data on enrollment status and exit counseling, that was conducted with the B&B:16/17 field test data (See appendix B for more details). This analysis showed that NPSAS:16 field test sample members who were identified as baccalaureate recipients from these data sources were more likely to have confirmed baccalaureate receipt in the B&B:16/17 field test student survey than sample members not identified as graduates through these sources. B&B statisticians also compared B&B:16/17 field test eligibility to NPSAS:16 field test response status. This analysis showed that 95 percent of NPSAS:16 field test sample members who confirmed B&B:16/17 eligibility in the NPSAS:16 field test student survey also confirmed eligibility in the B&B:16/17 field test student survey. However, only 24 percent of NPSAS:16 field test sample members who were NPSAS:16 field test

student survey nonrespondents were confirmed ineligible in the B&B:16/17 field test student survey.

These results were the rationale for stratifying the potentially eligible baccalaureates into three strata with different sampling rates for inclusion into the B&B:16/17 full-scale sample. The three strata are based on NPSAS response status: (1) NPSAS:16 study members who responded to the NPSAS:16 student survey, (2) NPSAS:16 study members who did not respond to the NPSAS:16 student survey but had sufficient administrative data, and (3) NPSAS:16 nonstudy members (i.e., sample members lacking the information from the NPSAS survey or administrative data to qualify them as NPSAS study members). Stratum 1 was sampled with certainty, stratum 2 was subsampled at 50 percent, and stratum 3 was sampled with certainty.

Stratum 1. The NPSAS:16 student survey respondents who explicitly answered questions indicating their potential B&B:16 eligibility were included in the B&B:16/17 sample with certainty. The concordance analysis discussed above indicates that only 4 percent of NPSAS:16 survey respondents were later found to be B&B:16 cohort ineligible.

Stratum 2. The NPSAS:16 student survey nonrespondents were further explicitly stratified for the B&B:16/17 sampling design by their "located in NPSAS" flag[11] (refer to section 3.2.3 for information about locating), and then implicitly stratified based on student records indicating degree completion and NSLDS on enrollment status.[12] Additionally, these two substrata were implicitly stratified by institution control and level and by the NPSAS:16 sampling weight to ensure representation of the sample. Sample sizes for the explicit substrata were determined proportional to the sum of the NPSAS:16 sampling weights associated with each substratum. The subsample was drawn with probabilities proportional to the NPSAS:16 sampling weight. This subsample helped alleviate the unequal weighting that existed in the prior B&B cohorts, which selected 10 percent of NPSAS survey nonrespondents. With this new approach, the design weight associated with these sample members approximately doubled, which minimized the probability of extreme weights. Section 6.1.4 shows the unequal weighting effects (UWEs) by institution control associated with the B&B:16/17 sampling weight.

Stratum 3. The NPSAS:16 nonstudy members were included in the B&B:16/17 sample with certainty, which was a change from previous cohorts. Historically, NPSAS-based longitudinal studies, such as B&B, included a small percentage of

[11] Stratifying by the "located in NPSAS" flag allows for different data collection protocols that are dependent on whether a sample member has been located or not.
[12] Updated NSC data on degree completions were not available at the time of B&B:16/17 sampling.

sample members who were nonstudy members in NPSAS. Lack of base-year data complicated analysis activities in these follow-up data collections. Additionally, nonresponse bias analysis from B&B:08/12 suggested that there was very little bias associated with this group as a whole; therefore, all NPSAS:16 nonstudy members who are potentially eligible for B&B:16/17 were included in the sample, but not fielded (i.e., not moved to data collection).[13]

The total sample size was 28,800 and the total fielded sample size was 27,440. Table 7 shows the distribution of the B&B:16/17 sample by NPSAS:16 response status.

Table 7. Distribution of the B&B:16/17 sample, by NPSAS:16 study member and survey response status: 2017

Study member and survey response status	Count	Percent
Total	**28,800**	**100.0**
NPSAS:16 nonstudy member[1]	1,350	4.9
NPSAS:16 study member	27,440	95.3
NPSAS:16 survey respondent	22,540	82.1
NPSAS:16 survey nonrespondent	4,910	17.9

[1] Nonstudy members were not fielded in B&B:16/17 and were categorized as B&B:16/17 nonrespondents.
NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

The questions associated with B&B:16/17 eligibility were asked again in the B&B:16/17 survey and eligibility screener because students may not have completed their baccalaureate requirements before completing the NPSAS:16 survey. NPSAS:16 survey nonrespondents and NPSAS:16 nonstudy members began eligibility screening at the start of the data collection.[14] If deemed eligible by answering in the affirmative to the screener questions, the B&B:16/17 sample members who were NPSAS:16 study members were routed into student survey data collection after a brief (1 to 2 weeks) suspension of activities.[15] NPSAS:16 nonstudy members were excluded from student survey data collection irrespective of eligibility. Ineligible NPSAS:16 nonstudy members were removed completely from the B&B:16 cohort.

[13] By including nonstudy members in the sample, the weights or representation of these students can be redistributed to responding sample members.
[14] For more information on the data collection schedule, see chapter 3.
[15] This break in activities enabled project staff to finalize eligibility status and prepare mailout materials before releasing these sample members into the main interview.

In addition to the survey and eligibility screener, data from student records provided by the NPSAS institution and data from updated matches to NSC and NSLDS were re-analyzed. Specifically, B&B:16/17 staff were able to utilize these data to confirm or revise a B&B:16/17 sample member's eligibility. For student records, eligibility was considered confirmed if the record was received after the student's graduation date and the graduation date occurred in the 2015–16 academic year. NSC and NSLDS data, respectively, was used to confirm eligibility for students with a graduation date in the 2015–16 academic year. Finally, CPS data was used to confirm eligibility for students who received their degree by June 30, 2016. If a student's eligibility status was not confirmed by one of these four sources, NSC data were used to identify students whose eligibility status should be revised to ineligible. The nonrespondents' eligibility status was changed to ineligible if: (a) they were still enrolled for a bachelor's degree at the NPSAS institution after June 30, 2016; (b) their latest enrollment status at the NPSAS institution was withdraw, deceased, or leave of absence; or, (c) their bachelor's degree graduation date at the NPSAS institution was after June 30, 2017. All B&B:16/17 nonrespondents who were not confirmed eligible or revised to ineligible remain eligible.

The weighted response rate was 71 percent. Table 8 shows the sample size, the number of eligible sample members, and unweighted and weighted response rates, by institution control using the B&B:16/17 base weight.[16]

Table 8. Sample size, number of eligible sample members, and unweighted and weighted response rates, by institution control: 2017

			Response rate	
Institution control	**Sampled**	**Eligible**	**Unweighted**	**Weighted**
Total	**28,800**	**26,540**	**73.4**	**70.5**
Public	11,960	10,890	71.3	70.2
Private nonprofit	8,490	7,900	74.9	71.9
Private for-profit	8,340	7,750	75.1	67.6

NOTE: NPSAS:16 nonstudy members were not fielded in B&B:16/17 and were categorized as B&B:16/17 nonrespondents. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

[16] See section 6.1.1 for more information on the construction of the B&B:16/17 base weight.

Chapter 3. Survey Design, Data Collection, and Outcomes

The B&B:16/17 survey was designed to provide an exhaustive, month-level education and employment history between the time of bachelor's degree completion and June 30, 2017. All enrollment and employment items were anchored to June 30, 2017, the month before data collection began, so all respondents reported on the same period of time. To collect exhaustive enrollment and employment histories between bachelor's degree completion and June 30, 2017, respondents were asked to report on all institutions they attended and all degree program enrollments at each institution. Similarly, respondents were asked about all employers between bachelor's degree completion and June 30, 2017 and each position held at each employer. Start and end dates, breaks in enrollment, and dates of hour and pay changes for each job were collected to create a detailed, month-by-month snapshot of the first year after completing a bachelor's degree. This section provides an overview of the survey design process and descriptions of the data elements included in each content area of the survey. An introduction to survey features and functionalities is also provided.

3.1 Survey Design and Systems

The data elements included in the B&B:16/17 survey were determined with consideration of past B&B studies, while also incorporating new data elements. Common B&B trend items such as postbaccalaureate enrollment, financial aid sources and repayment, employment and earnings, annual income, monthly expenses, and household and demographic characteristics were maintained. New data elements were identified and developed with TRP member input, cognitive survey feedback from pretesting sections of the survey, and field test results. For a list of TRP members, see appendix C; appendix B describes the development process and results of the survey field test. New data elements in B&B:16/17 added month-level data on childcare expenses, a longitudinal measure of educational

aspirations from the base year, and information on informal work participation[17] and sexual orientation and gender identity.

The survey consisted of seven key content areas: Eligibility, Undergraduate Education, Postbaccalaureate Education and Training, Financial Aid, Postbaccalaureate Employment, Teaching, and Background. For a complete list of data elements in each key area, see appendix D. A brief overview of each area follows.

Eligibility confirmed B&B:16/17 study eligibility based on date of bachelor's degree completion and granting institution. The eligibility section of the survey also collected marital status and household composition to determine later administration of questions related to a spouse or live-in partner.

Undergraduate Education collected bachelor's degree major(s), GPA, and prior certificate, diploma, and associate's degree completion at the bachelor's degree granting institution from which they were sampled in NPSAS. Enrollment information at other postsecondary institutions attended prior to bachelor's degree completion was also collected. This includes enrollment dates and award dates, degree type, major or field of study, and credit transfers to the bachelor's degree institution for each additional postsecondary enrollment. The undergraduate education section also collected information about extracurricular activities and satisfaction with the quality of education received at the bachelor's degree granting institution.

Postbaccalaureate Education and Training collected information on institutions attended after bachelor's degree completion and details on all degree or certificate program enrollments at each post-bachelor's degree institution. Degree and certificate program details included dates of enrollment, degree type, major or field of study, degree completion and award dates, online coursetaking, and financial aid sources. Postbaccalaureate education questions also collected nondegree coursework enrollment, reasons for field of study choice, educational aspirations, and type of graduate or professional exam taken.

Financial Aid collected student loan types used for undergraduate education, including federal student loans, private student loans, and other loans. Subsequent

[17] Informal work, otherwise known as contingent employment, is defined as employment that does not have an explicit or implicit contract for continued employment. For further information about informal, contingent work see: https://www.bls.gov/news.release/pdf/conemp.pdf. For related information about the "gig" or shared economy workforce, see: https://www.bls.gov/opub/mlr/2016/beyond-bls/pdf/awareness-and-usage-of-the-sharing-economy.pdf.

items gathered private student loan information, such as amount borrowed, repayment status, interest rate, and monthly payment as well as whether the respondent received assistance from family or friends to pay back loans.

Postbaccalaureate Employment collected information on all work for pay between bachelor's degree completion and June 2017. This included paid internships, full-time and part-time employment, graduate assistantships, self-employment, and informal work. For each employer reported, primary industry and size of organization were collected. The ways in which the respondent heard of the employer and dates of employment were also collected. For each job at each employer reported, the survey gathered information on benefits, pay and pay changes, average hours worked over time, how closely related the job was to the undergraduate major and undergraduate internships, and job satisfaction. Teachers had an additional set of questions for each teaching position held that collected the school where they taught, the type of teaching position held, and the grades and subjects taught. Postbaccalaureate employment also collected job search activities and important factors when choosing a job.

Teaching identified current, past, and prospective prekindergarten through 12th-grade (preK–12) teachers and asked about preparations and certifications. Questions about TEACH Grant awareness and loan forgiveness programs awareness and participation were also included. Information on factors that influenced the choice to become a teacher, formal induction programs, and preparedness for first teaching job and assistance received in first teaching job was also collected. For past teachers, the date last worked as a teacher and reasons no longer teaching were collected.

Background collected demographic characteristics, such as DOB, citizenship, native language, other known languages, sex, gender identity, sexual orientation, military status, and disability status. Additional questions collected household and family information on the number of dependents and dates of dependency for each dependent; monthly expenses including childcare, home, vehicle, and credit cards; annual income for calendar year 2016; and retirement account contributions. For respondents with a spouse or partner, information on spouse's or partner's employment status, 2016 annual income, level of education, enrollment during the 2016–17 academic year, financial aid amount borrowed and owed, and monthly student loan payment amount were also collected. Additionally, volunteer and voting activity, financial stress, financial literacy, and the effects of the cost of education were collected.

Figure 1 shows the key content areas and data elements of the full-scale survey. For complete B&B:16/17 full-scale survey specifications, see appendix E.

Figure 1. B&B:16/17 full-scale survey by content area and data elements: 2017

Eligibility
- Date awarded 2015-16 bachelor's degree
- Date completed requirements for 2015-16 bachelor's degree
- Confirm 2015-16 bachelor's degree granting institution (NPSAS institution)
- Marital status
- Financial responsibilities shared
- Household composition

Undergraduate Education
- Major(s) or field(s) of study
- Formally changed major
- Continuously enrolled at NPSAS institution
- Earned additional diploma, certificate, or degree at NPSAS institution
- Additional undergraduate institution enrollments (dates of enrollment, degree type, degree earned, credits transferred)
- GPA at NPSAS institution
- Activities at NPSAS institution
- Satisfaction with quality of education at NPSAS institution
- Satisfaction with choice of major at NPSAS institution

Financial Aid
- Types of undergraduate student loans
- Private student loan amount borrowed
- Private student loan repayment status, interest rate, and monthly payment
- Receive help from family or friends to pay back student loans

Postbaccalaureate Education/ Training
- Institutions attended since completing 2015-16 bachelor's degree
- At each institution: degree type, major, dates of enrollment, enrollment intensity, degree completed/date awarded, online course taking, financial sources used to pay for degree
- Nondegree coursework and reasons for nondegree course enrollment
- Main reason for choosing major
- Highest degree ever expected
- Graduate/professional school exam(s)

Employment
- Held active professional certification/license
- Number of employer(s) between completing bachelor's degree and June 2017
- For each employer: employer name, number of jobs, organization type, primary industry, number of employees, months worked, and how heard about employer
- For each job at each employer: job title; professional certification required; if teacher, type of position, school name, grades and subjects taught; start date; benefits received; earnings and pay changes; average hours worked; related to bachelor's degree major; part of career; satisfaction
- Side jobs and pay
- Activities while not working
- Primarily student or employee
- Months actively looked for work between completing bachelor's degree and June 2017
- Job search activities
- Important factors when choosing a job

Teaching
- Identify current and past pre-K-12 teacher type
- Made formal preparations for teaching or considered teaching
- Applying for positions / received offers
- Teacher preparation
- Teaching certification / subject area(s) certified in
- TEACH Grant Program awareness
- Loan forgiveness program: awareness, influence, and participation
- Factors influenced becoming a teacher
- First teaching position experiences
- Left teaching: date and reason(s) left

Background
- Date of birth, country of origin, and citizenship status
- Languages spoken
- Biological sex, gender identity, and sexual orientation
- Military status, civic and volunteer activity
- Number of dependents, date of dependency, and childcare costs
- Housing and vehicle expenses
- Spouse/partner information
- Disability status
- Financial health and literacy

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.1.1 Survey Mode Administration

The B&B:16/17 survey was a multimodal instrument designed for web (nonmobile and mobile) and telephone administration. Respondents advanced through the survey according to skip logic based on information previously reported by the respondent in the base-year NPSAS:16 survey or earlier in the B&B:16/17 survey. The survey instrument consisted of several forms, which are survey screens that typically contained a single question, but sometimes multiple questions; form specific help text; the response options to each question; and navigation buttons, organized by content area. To minimize mode effects, specific methodological features were programmed to provide web and mobile respondents with the assistance normally 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 range or in an incorrect format;
- Conversion text to encourage responses to critical questions when left unanswered; and
- Pop-up messages prompting sample members to provide a response when they left three consecutive forms blank.

In addition to these features, the instrument also included coder forms, which are custom forms in the survey that are linked to an underlying database of standardized responses to the question on the form. For more on instrument coders included in the B&B:16/17 survey, see section 3.1.2. Help text is provided at the form level and is written specifically for the question(s) on-screen. Section 3.4.2 provides analysis of help text usage in the survey. To reduce nonresponse on critical items (e.g., annual income), conversion text appeared when a respondent did not provide a response. The conversion text is written to communicate the importance of the data element and encourages the respondent to reconsider providing a response. For additional information on conversion text, see section 3.4.3.

3.1.2 Coding Systems

The B&B:16/17 full-scale survey used coding systems, or "coders," to provide standardized codes for certain text string responses. Predictive text string coders were used for the following survey items: postsecondary institutions attended in addition to the NPSAS institution, majors or fields of study for undergraduate and postbaccalaureate education, zip code of employers, primary industries of employers, occupations, preK–12 schools at which teacher respondents have taught, and country of origin. For each coder, respondents entered their response as a text string

into a text box. As respondents typed, a keyword search of the underlying database returned a list of possible matches for selection, displayed in a dropdown menu.

See section 5.2 Post-Data Collection Editing for an explanation of how codes were assigned to text strings that had not been successfully coded in the instrument. The following are brief descriptions of the individual coding systems, sometimes used on multiple forms, and the underlying databases for each coding system:

- The **postsecondary institution coder** was linked to the complete set of institutions contained in the 2014–15 IPEDS, developed by NCES (https://nces.ed.gov/ipeds). Any postsecondary institution, other than the NPSAS institution, and any postbaccalaureate institutions attended were coded using this coder. For institutions not listed in the database, the coder saved any initially entered text string, and prompted respondents to provide the control (e.g., public, private nonprofit, or private for profit) and level (e.g., 4-year or 2-year) of the institution, as well as the city and state in which the institution was located.
- The **major/field of study coder** used the 2010 Classification of Instructional Programs (CIP) taxonomy, developed by NCES (https://nces.ed.gov/ipeds/cipcode). For any major or field of study not found in the CIP database, the coder saved any entered text strings, and asked respondents to select a general area of study and a specific discipline within that area.
- The **zip coder** was built from the ZIPList5 Max database (https://zipinfo.com/products/z5max/z5max.htm). The coder predictively searched the database using the numeric (i.e., zip code) or text string (i.e., city and state) entered by the respondent or data collection interviewers (DCI). Entered strings were saved for any zip codes not in the database.
- The **industry coder** used the 2012 North American Industry Classification System, (https://www.census.gov/eos/www/naics/). For industries not listed in the database, the coder saved any entered text strings.
- The **occupation coder** linked respondents' occupation titles to Version 21.2 of the Occupational Information Network (O*NET) database (https://onetonline.org), which uses the 2010 Standard Occupational Classification taxonomy (https://www.bls.gov/soc/home.htm). For any occupations not listed in the database, the coder saved the entered text string and asked respondents to provide a general area, specific area, and finally a detailed classification for the occupations.

- The **preK–12 school coder** contained all schools from the Private School Universe Survey for private K–12 schools (https://nces.ed.gov/surveys/pss), and the Common Core of Data for public K–12 schools (https://nces.ed.gov/ccd). Given B&B's first-time inclusion of preK teachers in the B&B:16/17 sample, the Administration for Children and Families Head Start database (https://eclkc.ohs.acf.hhs.gov/hslc/data/center-data) and the National Association for the Education of Young Children listings of early childhood education programs (https://www.naeyc.org/our-work/for-families)were systematically de-duplicated[18] and added to the preK–12 coder database. For schools not identified within the preK–12 coder, the coder retained the entered text string and asked respondents to supply the school type, district or county name, and the highest and lowest grade levels at the school.
- The **country of origin coder** used the 2014 International Organization for Standardization 3166 Country Codes System (https://www.iso.org/iso/home/standards/country_codes.htm). Entered strings were saved for any countries not listed in the database.

3.1.3 Survey Design System

Many systems were used in B&B:16/17 to develop, run, and support the data collection in an efficient and effective manner. These systems and software, mostly proprietary in nature and tailored to meet the specific needs of the project staff, included a survey development system, an integrated management system (IMS), a control system, CATI case management system (CMS), intensive tracing operations, and quality evaluation system (QUEST).

Survey development system. A relational instrumentation interface system (Hatteras) was used to develop and program all specifications of the survey. Hatteras is a web-based system developed for designing and deploying multimode (web, CATI, field) survey instruments. All specifications of the survey instrument (e.g., question wording, response options, routing logic, validations, etc.) are implemented using the Hatteras system. Hatteras has been used on all NCES postsecondary survey projects since 2006 and has been enhanced over the years to take advantage

[18] The process of de-duplicating early childhood education programs began by identifying any records that matched on school name or school identifier. Then, the available data in each record for a program were compared to the other records for that program. If any data points (e.g., highest and lowest grades, school district) did not match, the program in question was researched to determine the correct data points. Incorrect records were removed. If all records for a program matched on all available data points, the record with the most recent and complete data for the school was kept.

of mobile-first technology and the latest .NET and Model-View-Controller (MVC) framework.

IMS. All aspects of the study were monitored using an IMS, a project management tool designed to give project staff ready access to a repository of reports and critical project information. Daily reports and management information from all the major systems across the study resided in the IMS, accessible via the Web, and protected by SSL encryption and a password-protected login.

Control system. The control system refers to the database of sample members and the integrated set of applications used to control and monitor all activities related to data collection, including tracing and locating of sample members. Through the control system applications, project staff were able to e-mail groups of sample members, prepare lead letters and follow-up mailings, execute batch tracing, review locating information, track case statuses, and view comments from DCIs. The control system was fully integrated with both the CATI system and intensive tracing operations, so that all systems needing sample member-specific data had access to the same data. The survey status was automatically updated in the control system, leading to seamless integration between the data collection systems and the ability to identify problems early and implement solutions effectively.

CATI-CMS. The case management system is an application used to reach the desired sample member via phone so that an interview can be conducted. The scripts within the system guide the DCI to locate the correct sample member or collect new contact information so that the sample member can be reached. Within the CATI-CMS, DCIs had the ability to e-mail login credentials to sample members who wanted to take the survey online and set up SMS text reminders to those who requested this service.

Once the sample member is located and agrees to participate, the survey instrument is launched from within the case management system. After every contact (or attempted contact) with a sample member, the status of the instrument is automatically updated in the case management system. Each sample member's data is stored in a "case" and the CMS maintains a history of the case. This history will include call counts, time stamps, event codes (i.e., what happened on a particular dial), and status codes which indicate the last outcome (e.g., refusal status, contact status, completion status) of the attempted dials. Contact information was maintained in the system and used to make calls.

Intensive tracing operations. Cases that could not be located were set to a "need tracing" status, which made them available immediately for intensive tracing. The

tracing system used during data collection allowed tracers to work with cases where the sample member had not been successfully located. Specifically, the system allowed tracers to examine all case data, including comments left by DCIs in CATI, and use various search methods to try to track down the case. The tracing supervisors managed the tracers' loads and reviewed cases as needed.

QUEST. RTI's monitoring interface and a set of protocols were used for evaluating interviewer performance during the interview, or after the survey had been administered by listening to a recording. QUEST was designed to support all phases of quality monitoring.

For B&B:16/17, QUEST incorporated the following:

- Randomized and specific selection of recorded interviews for monitoring;
- Selection of specific sections of the survey instrument for evaluation;
- Standard criteria for evaluating and scoring interview performance overall and in specific skill areas (e.g., professionalism, question administration, and knowledge of the instrument);
- An evaluation form for documenting supervisor observations and comments and for providing constructive feedback;
- Aggregate reports to facilitate analysis of performance across interviewers and identify any instrument or performance issues; and
- Project staff access to interview recordings.

3.2 Survey Data Collection

The B&B:16/17 survey data collection provided a study website and help desk for information and support to sample members. Sample members could complete the survey independently on the Web, or interviewers trained in CATI methods were available to help sample members complete the survey.

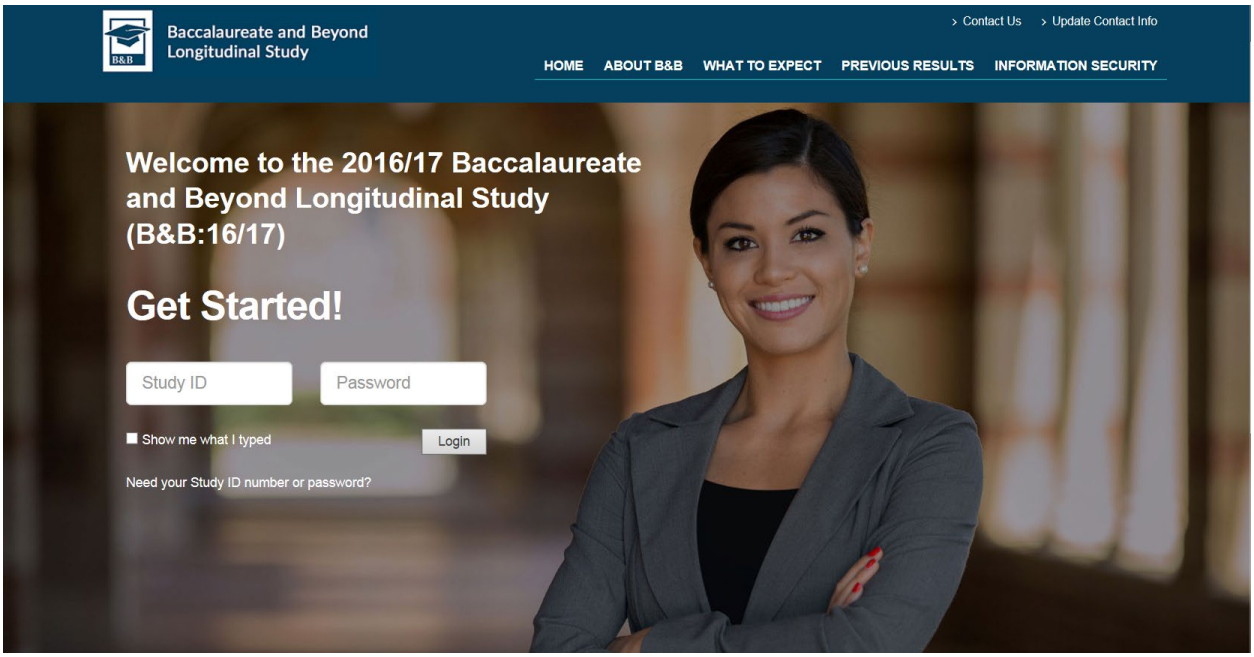
3.2.1 Study Website and Help Desk

Communications with sample members included a link to the B&B:16/17 data collection website, which provided general information about the study, including 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 studies. The website included contact information for the study help desk and project staff at RTI, and links to the general NCES and RTI websites. Sample

members were able to log in to the secure section of the website to update contact information and to complete the survey.

The study website—designed according to NCES web policies—used a three-tier security approach to protect all collected data. The first tier of security included secure log-ins, with a unique Study ID and a unique strong password that was provided to sample members prior to the start of data collection. The second tier of security protected any data entered on the website with SSL technology, allowing only encrypted data to be transmitted over the Internet. The third tier of security stored collected data in a secured SQL Server database housed on a machine that was physically separate from the Web server. A screenshot of the B&B:16/17 study website home page is shown in figure 2.

Figure 2. Home page for B&B:16/17 study website: 2017



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

B&B:16/17 DCIs served as help desk staff to respond to sample members' questions via the study help desk number and provided support for technical issues related to completing the Web survey. 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 the Symphony Case Tools application, which was accessible via the CATI-CMS. If technical difficulties prevented sample members from completing the Web survey, DCIs were available to assist sample members to

complete a telephone interview instead. Two common types of help desk incidents were requests to retrieve log-in credentials and requests to complete the survey over the telephone. To minimize the need for telephone assistance, a "Forgot Password?" feature was included on the study website. After sample members entered a few pieces of identifying information, their log-in credentials were automatically provided to them via e-mail.

3.2.2 Training of Interview Data Collection Staff

Prior to B&B:16/17-specific training, all data collection staff completed a general training program that covered call center procedures, an overview of the systems used to conduct their work, confidentiality procedures and sample member rights, and proper interviewing techniques (e.g., proper enunciation and pace of speech). The training schedule and number of data collection staff trained for each role are shown in table 9.

Table 9. Training of B&B:16/17 data collection staff: 2017

Staff trained	Time period	Total number of staff trained
Data collection interviewers (DCIs), quality control supervisors (QCSs), and quality experts (QEs)	August 8–10; November 7–9; December 18–22	62
Tracing staff	August 21; September 11; January 30	16

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

DCIs were the primary point of contact with sample members and also functioned as help desk agents. Their responsibilities included conducting telephone interviews, responding to sample member concerns, providing technical assistance for logging in to the Web survey, as well as gaining cooperation with sample members and averting or converting refusals by using strategies outlined during training and in the training manual. The DCI training lasted 12 hours and included an overview of B&B:16/17 and its purpose, confidentiality procedures, case management procedures, a review of answers to sample members' most FAQs, a review of the survey instrument including training and practice specific to each coder, hands-on mock interviews, practice with case management systems, guidance on providing technical support to sample members, and professional interviewing techniques. Training materials included a DCI manual, guidelines for survey administration and professional interviewing, and FAQs. (See appendix F for DCI training topics). Project staff certified DCIs by observing a mock interview and ensuring that staff could provide appropriate and accurate responses to B&B:16/17 FAQs.

Quality control supervisors (QCSs) monitored DCI performance and production, provided guidance to interviewers, and helped troubleshoot problems. The QCSs also attended DCI trainings to equip them to assist DCIs and help facilitate the trainings.

Quality experts (QEs) monitored live and recorded interviews and provided constructive feedback and coaching to interviewers. QEs attended interviewer training to learn survey basics and interviewing conventions. In addition, they were trained for general monitoring responsibilities, including the use of RTI's monitoring interface, QUEST. QEs were provided with an interviewing manual and a file of screens and text in CATI and the survey, including help text.

Tracing staff completed a 16-hour program on tracing procedures led by tracing managers within RTI's Call Center Services. Tracers then had an additional 2 hours of project-specific training, including an overview of B&B:16/17, review of B&B:16/17 FAQs, and tracing techniques most appropriate for locating B&B:16/17 sample members.

Concepts from DCI training sessions were reinforced in weekly Quality Circle (QC) meetings, where project staff reminded DCIs of proper administration of the survey and other topics as needed. DCIs were encouraged to ask questions, which helped identify needs for training topics for subsequent QC meetings. Selected staff received additional trainings on specific topics, including refusal aversion techniques and case review.

3.2.3 Locating, Tracing, and Contacting Sample Members

A variety of locating and tracing methods were used to locate sample members. A multistep process for locating, tracing, and contacting sample members was used. Prior to the start of data collection, several batch locating databases were used to update or confirm the contact information on file for sample members. At the start of data collection, a mailing and an e-mail were sent to sample members. Once outbound telephone efforts began, additional batch tracing, and intensive tracing, if needed, was initiated for sample members who could not be located by telephone. Once project staff located sample members, they contacted them and invited them to complete the survey.

Cases with at least one valid address were sent to LexisNexis (formerly FirstData) to access the U.S. Postal Service (USPS) National Change of Address database (NCOA) for matching. The NCOA database contains change-of-address records submitted to USPS. The NCOA maintains data for 3 years. Records returned from NCOA were

compared to existing data, and new or updated addresses for sample members were loaded into the locating information database.

Cases without a good mailing address after NCOA matching were sent to LexisNexis's Single Best Address search prior to sending the first mailing. While NCOA only provides information for people who registered a change of address with USPS, Single Best Address can provide new addresses, including those not registered with NCOA. Single Best Address uses a name and SSN to search multiple data sources using progressive search logic to return the most current address available.

Because NCOA and Single Best Address only provide address information, survey staff also submitted sample member information to LexisNexis's PhoneAppend telephone number lookup service before data collection began. LexisNexis carries approximately 718.8 million current and historical phone numbers, of which 80 percent are likely cell phones, 15 percent are residential landlines, and 5 percent are business landlines. PhoneAppend returns a telephone number based on a search by name, street address, and zip code.

The match rates for B&B:16/17 sample members by tracing source are shown in table 10.

Table 10. Batch processing record match rates, by tracing source: 2017

Tracing source	Number of cases sent	Number of cases matched	Percent matched
NCOA	27,380	8,380	30.6
Phone Append	27,380	3,380	12.3
Premium Phone	1,210	710	58.1
Experian True Trace	6,580	6,290	95.6
NSLDS	27,440	22,470	81.9
Single Best Address Search	2,280	2,250	98.6
Single Best Phone Search	1,010	760	75.1

NOTE: NCOA = National Change of Address; NSLDS = National Student Loan Data System Sample. Count includes fielded cases. Percent is based on the number of records sent for batch tracing. Since records were sent to multiple tracing sources, multiple record matches were possible. Match rate include instances confirmation of sample member contact information, and the addition of new 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Data collection mailings and e-mails. Using the addresses updated in batch tracing, a notification mailing was sent to all addresses for all sample members. Mailings were sent on a flow basis by USPS as batch tracing procedures provided additional contact information. The mailings contained a lead letter and a study brochure. The lead letter notified sample members of the start of data collection and

the incentive that eligible respondents would receive upon completion of the survey. The letter also included unique login information for the Web survey instrument and encouraged them to participate during the early completion phase. The brochure provided information about the purpose of the study, confidentiality and security concerns, and contact information. B&B:16/17 staff periodically sent sample members additional mailings, including postcards, letters, and a flyer, as reminders to complete the study.

E-mails were also sent to all sample member e-mail addresses collected from institutions and batch tracing procedures. E-mails went out on a flow basis and provided sample members with a link to complete the survey, as well as unique log in information. See appendix G for examples of the mailing and e-mail contact materials sent to sample members.

CATI locating. For sample members who did not complete the survey via the Web, DCIs would attempt to conduct an interview over the telephone. DCIs called the number with the best likelihood of reaching the sample member, as determined by CATI. If the interviewer could not reach the sample member at the number, the interviewer attempted to gather locating information from the contact who answered the call. When this approach was unsuccessful, the interviewer used all other information available about the sample member, including other contacts to locate the sample member. Intensive tracing was initiated once all tracing leads were exhausted.

Intensive tracing. During the data collection period, B&B:16/17 staff used LexisNexis' Premium Phone to search for cases for which all known numbers resulted in no contact with the sample member. Premium Phone is a residential telephone number lookup service that utilizes combinations of address, name, and SSN to match phone numbers with sample members or other contacts.

Then, B&B:16/17 survey staff sent cases that could not be located by other methods to intensive tracing (TOPS). These included cases that had no number to load into CATI, or for whom all known numbers failed. Intensive tracing comprised a two-tier tracing approach, utilizing both public domain and proprietary databases.

The first tier of intensive tracing (TOPS-1) identified sample members in consumer databases (e.g., LexisNexis, Experian, and Accurint) using SSNs. If this search resulted in a new telephone lead, TOPS sent the case back to CATI for follow-up by DCIs. If the search resulted in a new address only, tracers used directory assistance searches to locate a telephone number for the contact. This approach minimized the

effort required to locate cases and the time that cases were in TOPS and therefore unavailable to DCIs.

Cases not located during TOPS-1 were sent to the more intensive second tier of intensive tracing (TOPS-2). Tracing staff conducted a thorough review of each case and determined the appropriate next steps based on the leads developed from prior tracing and contacting activities. Tracers again used consumer databases, such as LexisNexis, Experian, and Accurint's SSN search, as well as additional sources described below, to seek current contact information for a sample member or other contacts that could provide a potential lead to the sample member. On a case-by-case basis, additional online searching methods were performed in order to find up-to-date contact information. If all methods of finding contacting information were exhausted, only then would cases be finalized as unlocatable. Tracing staff finalized cases as unlocatable after exhausting all leads.

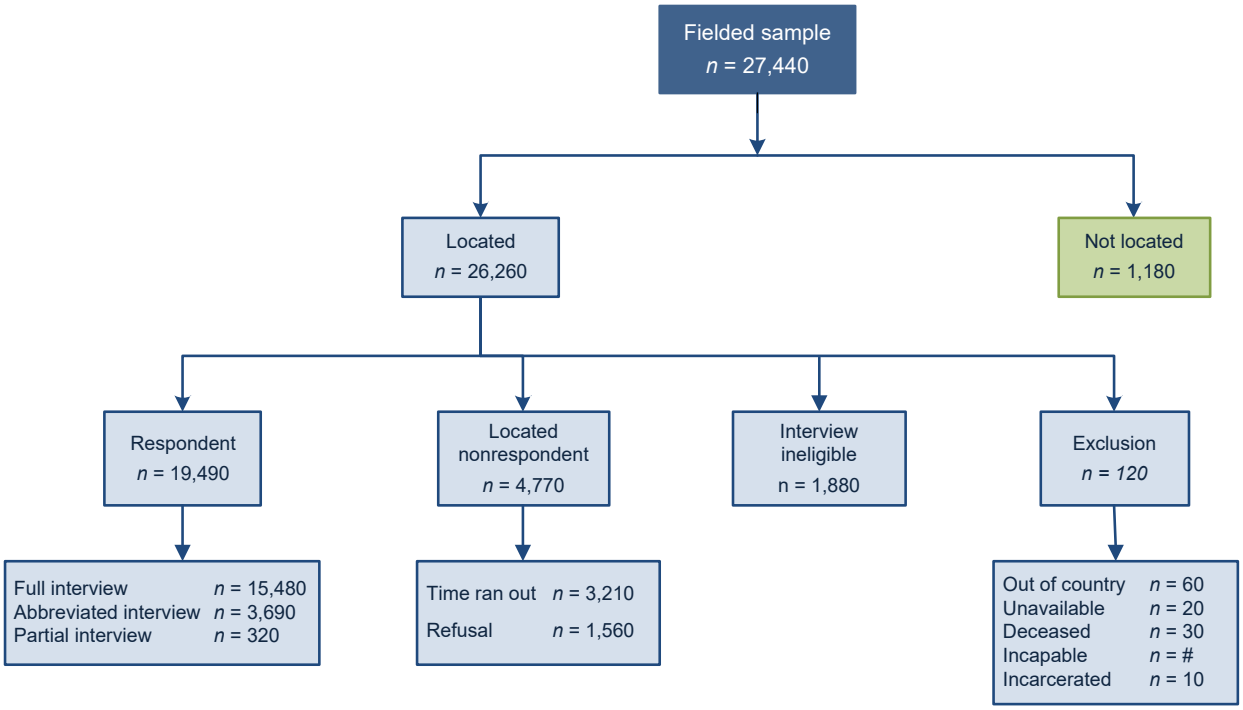
Overall, 4 percent of cases required intensive tracing. Two percent of base-year (NPSAS:16) respondents required intensive tracing, compared to 10 percent of base-year nonrespondents. Nearly 20 percent of Group 1 sample members (nonlocated base-year nonrespondents) required intensive tracing, and 5 percent of Group 2 (located base-year nonrespondents and base-year abbreviated survey respondents). For Groups 3 and 4 (base-year respondents), it was 3 percent and 2 percent, respectively. For more information on group assignments and the treatment of each group during data collection, see section 3.2.5. The cases requiring intensive tracing procedures by base-year response status and data collection group are shown in table 11. Of fielded cases, 96 percent (n = 26,260) were located and of located cases, 74 percent (n = 19,490) responded. A fifth group, Group 0, included the NPSAS:16 nonstudy members who were not fielded. Located and surveyed data are displayed in figure 3.

Table 11. Cases requiring intensive tracing procedures, by base-year response status and data collection group: 2017

Base-year response status and data collection group	Total sample[2]	Cases requiring intensive tracing[1]	
		Number	Percent
Total	**27,440**	**990**	**3.6**
Base-year response status			
NPSAS:16 respondent	22,540	480	2.1
NPSAS:16 nonrespondent	4,910	500	10.3
Data collection group[3]			
Group 1	1,220	240	19.6
Group 2	6,910	350	5.1
Group 3	7,330	210	2.9
Group 4	11,980	190	1.6

[1] Cases requiring intensive tracing excludes cases initiated to intensive tracing that were not traced but includes cases for which intensive tracing work began but work was stopped. Includes only cases that required intensive tracing due to a lack of a good telephone number to call.
[2] Includes fielded cases.
[3] Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Figure 3. Overall number of located and surveyed sample members: 2017



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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

The locating rate for NPSAS:16 respondents was 98 percent, compared to an 87 percent locating rate for NPSAS:16 nonrespondents. The located and survey results by base-year response status and by data collection group are presented in table 12.

Table 12. Located, located eligible, and surveyed status, by base-year response status and data collection group: 2017

Base-year response status and data collection group	Total sample	Eligible sample[3]	Located[1]		Located eligible		Surveyed[2] status			
			Number	Percent of total	Number	Percent of eligible	Number	Percent of located	Percent of located eligible[4]	Percent of eligible
Total	**27,440**	**25,570**	**26,260**	**95.7**	**24,360**	**95.3**	**19,490**	**74.2**	**80.0**	**76.2**
Base-year response status										
NPSAS:16 respondent	22,540	21,070	22,000	97.6	20,510	97.4	17,850	81.1	87.0	84.7
NPSAS:16 nonrespondent	4,910	4,500	4,260	86.9	3,850	85.5	1,640	38.6	42.8	36.5
Data collection group[5]										
Group 1	1,220	1,110	890	73.1	780	70.3	390	43.2	49.5	34.8
Group 2	6,910	6,390	6,500	94.0	5,970	93.3	3,730	57.4	62.4	58.3
Group 3	7,330	6,860	7,100	96.8	6,620	96.5	5,390	75.8	81.4	78.5
Group 4	11,980	11,210	11,780	98.3	11,000	98.1	10,000	84.9	90.9	89.1

[1] Sample members are counted as located if they were ever located at some point during data collection.
[2] Surveyed includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[3] Includes fielded cases.
[4] Percent of located eligible excludes located cases found to be ineligible or deceased.
[5] Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.2.4 Confidentiality Pledge Experiment

In July 2015, the Homeland Security Act of 2002 was amended to require the Department of Homeland Security to monitor federal agency information systems, including survey data transmissions. As a result, the confidentiality pledge cited to sample members in recruitment materials and at the start of each data collection instrument was updated to reflect the change. Project staff conducted an experiment during full-scale data collection to determine the effect of three different versions of the confidentiality pledge on sample members' willingness to initially participate and to complete the survey. Each experimental condition stated the penalty incurred upon violation of the law and introduced the Cybersecurity Enhancement Act. Two of the experimental conditions identified different entities to monitor potential cybersecurity threats.

The full-scale instrument programming code rendered one of the following three confidentiality pledge wording conditions for each sample member based on experimentally preassigned group membership:

- **Control group.** 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).
- **Experimental group 1 ("Homeland Security").** 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). By law, anyone who willfully discloses any identifiable information about you or your school is subject to a jail term of up to 5 years, a fine of up to $250,000, or both. Electronic transmission of your information will be monitored for viruses, malware, and other threats by Homeland Security in accordance with the Cybersecurity Enhancement Act of 2015.
- **Experimental group 2 ("Federal Staff").** 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). By law, anyone who willfully discloses any identifiable information about you or your school is subject to a jail term of up to 5 years, a fine of up to $250,000, or both. Electronic transmission of your information will be monitored for viruses, malware, and other threats by Federal employees and contractors in accordance with the Cybersecurity Enhancement Act of 2015.

In addition, the experiment varied the placement of the confidentiality pledge in the survey between two locations:

- **Login screen.** On the first screen encountered together with the Paperwork Reduction Act statement and the study authorization citation; or
- **Separate pledge screen.** On a second screen with the pledge wording presented by itself.

Prior to the start of data collection sample members were proportionally assigned to the following conditions in a fully-crossed 2 x 2 design:

- Control-Login Screen (n = 18,780);
- Control-Separate Pledge Screen (n = 1,730);
- Homeland Security-Login Screen (n = 1,730);
- Homeland Security-Separate Pledge Screen (n = 1,730);
- Federal Staff-Login Screen (n = 1,730);
- Federal Staff-Separate Pledge Screen (n = 1,730).

Participation rates. Evaluation of participation rates was conducted to determine the willingness of sample members to start the survey after having been shown their respective Confidentiality Pledge either in the study brochure[19] or on the study website. Sample members started the survey either by entering a Study ID and password and clicking the Login button on the study website, or by clicking the next button on the survey Start page—reached through links included in individualized e-mails.

Response rates. Response Rate 2 (RR2) (AAPOR 2016) evaluated the willingness of sample members to continue through to the end of the survey after viewing their respective Confidentiality Pledge. Participation and response rates were compared for pledge wording, placement, and the interaction of pledge wording and placement.[20]

Results. Fully saturated two-way logit models were estimated, accounting for the complex sample design to estimate the effects of pledge wording and pledge placement. All sample members who initially started the survey on the telephone

[19] The pledge wording was also included in the center right panel of the study brochure accompanying the data collection announcement mailing materials. However, it is less clear whether or not individuals opened their mail and paid attention to the contents of the brochure.
[20] The calculation of participation rates includes ineligible sample members as part of the numerator and denominator whereas the response rate calculation does not.

may not have been explicitly exposed to the treatments, and therefore, were excluded from the analyses.

Table 13 shows the estimated coefficients from the weighted main effects logistic regression of participation and response rate on pledge wording and placement. Neither of the main effects were statistically significant, suggesting that neither the wording nor the placement of the pledge affected participation or response rates.[21]

Table 13. Estimated coefficients, standard errors, and test statistics for pledge wording and placement effects on participation and response rates (main effects only), by pledge experiment conditions: 2017

	Participation rate				Response rate			
Pledge experiment conditions	**Co-efficient**	**Standard error**	***t*-statistic**	***p*-value**	**Co-efficient**	**Standard error**	***t*-statistic**	***p*-value**
Pledge wording (ref. Control)								
Homeland Security	−0.05	0.079	−0.69	.4883	0.02	0.075	0.27	.7886
Federal staff	0.07	0.085	0.86	.3885	0.11	0.086	1.21	.2284
Pledge placement (ref. Login)								
Separate pledge screen	−0.03	0.063	−0.48	.6317	−0.04	0.066	−0.67	.5029
Intercept	1.20***	0.031	38.08	.0000	0.91***	0.029	30.75	.0000

* $p < .05$
** $p < .01$
*** $p < .001$
NOTE: The analysis excludes sample members who initially participated via computer-assisted telephone interviewing (CATI).
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

The joint distribution in table 14 shows the "Federal staff" wording on the login screen condition achieved the highest participation and response rates, and the "Homeland Security" wording on a separate screen condition achieved the lowest participation and response rates. However, neither of these rates were statistically significant. These results were consistent with regression results shown in table 13.

Table 14. Joint and marginal effects for pledge wording and placement effects on participation and response rates, by pledge experiment conditions: 2017

	Participation rate			Response rate		
Pledge experiment conditions	**Login**	**Separate page**	**Overall**	**Login**	**Separate page**	**Overall**
Overall	**76.9**	**76.4**	**76.8**	**71.4**	**71.2**	**71.4**
Control	76.7	78.0	76.8	71.0	72.8	71.2
Homeland Security	76.1	75.0	75.6	72.5	69.9	71.2
Federal staff	79.5	76.2	77.9	74.9	70.8	72.9

NOTE: The analysis excludes sample members who initially participated via computer-assisted telephone interviewing (CATI).
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

[21] Additional models not presented here investigated the presence of interaction effects. Neither of the interaction effects was statistically significant.

3.2.5 Survey Data Collection Phases and Contacting Methods

Data collection for the B&B:16/17 full-scale survey consisted of five phases: the early completion phase, production phase I, production phase II, nonresponse conversion phase, and the extension phase. Sample members had access to both the Web and telephone versions of the survey throughout data collection. The Web and telephone versions of the survey were identical except that the telephone version included administration instructions for the DCI.

An eligibility screener and address update were administered to all base-year (NPSAS:16) nonrespondents and base-year (NPSAS:16) nonstudy members for 6 weeks prior to start of survey data collection. The purpose was to screen out ineligible sample members at an early stage, facilitate locating efforts, and help focus data collection efforts on hard-to-reach and potentially-eligible sample members. Sample members who completed the screener were offered a $10 incentive.

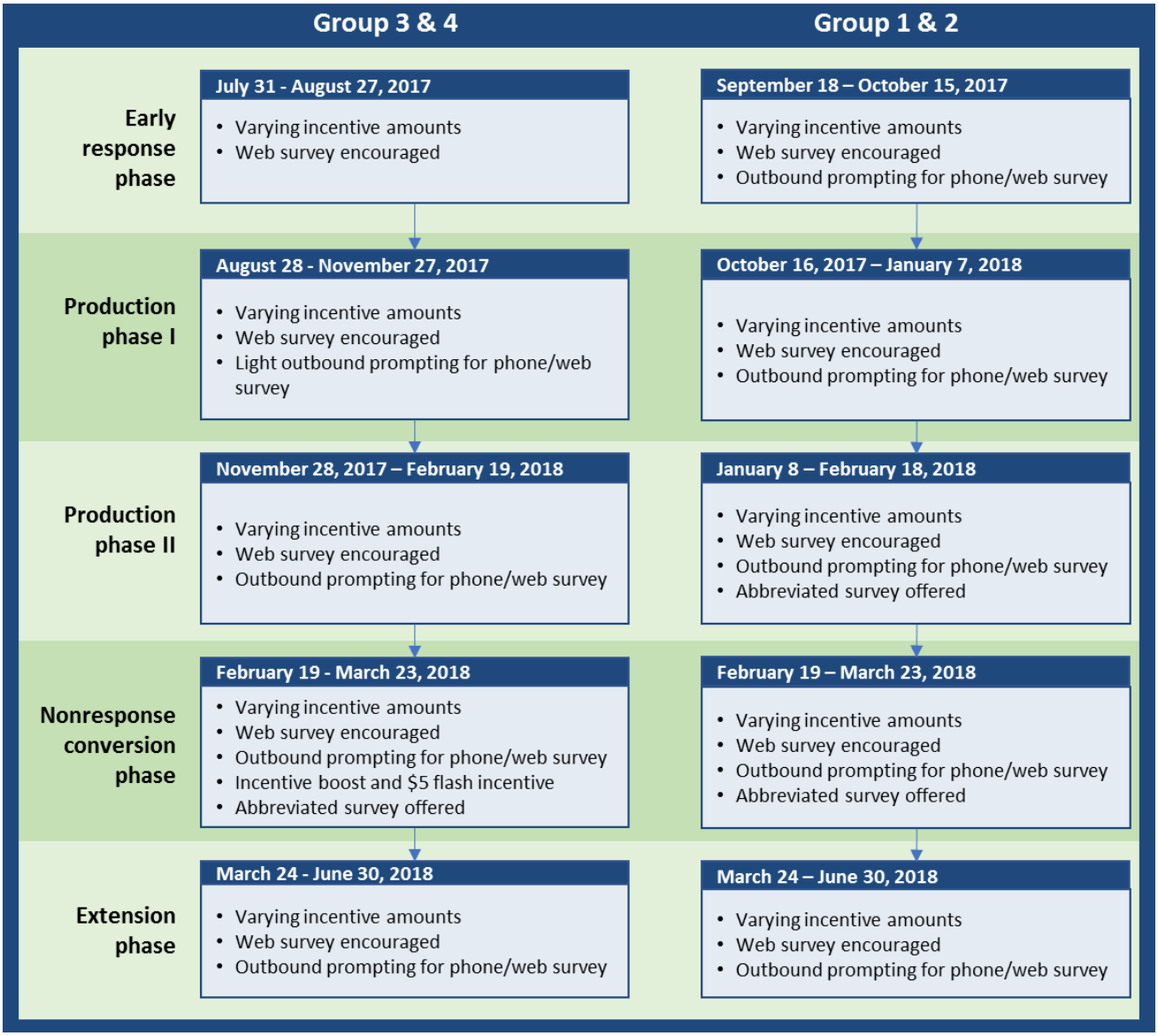
Both early and late base-year respondents who completed the survey were offered a $30 incentive. Early respondents are sample members who participated in NPSAS:16 prior to the beginning of outbound calling. Late respondents are sample members who participated in NPSAS:16 after outbound calling began. Located base-year NPSAS:16 nonrespondents and abbreviated respondents who completed the survey were offered a $50 incentive. Nonlocated base-year NPSAS:16 nonrespondents who completed the survey were offered a $55 incentive.

Early completion phase. The early completion phase began in July 2017 for base-year respondents and in September 2017 for base-year nonrespondents. A mailing and an e-mail were sent to sample members encouraging them to complete the B&B:16/17 survey over the Web. Sample members could opt to call the help desk to complete the interview over the telephone with DCIs. The early completion phase lasted four weeks. An additional $5 early-bird incentive was offered to late base-year respondents, located base-year nonrespondents, and base-year abbreviated survey respondents if they completed the survey within the first three weeks of data collection. The schedule for the B&B:16/17 data collection phases is shown in figure 4. The four data collection groups are defined as follows:

- **Group 1: Nonlocated NPSAS:16 survey nonrespondents** received the aggressive protocol;
- **Group 2: Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents** received the aggressive protocol;
- **Group 3: NPSAS:16 late survey respondents** received the default protocol; and

- **Group 4: NPSAS:16 early survey respondents** (who responded in the first 3 weeks of the NPSAS:16 survey data collection effort) received the relaxed protocol.

Figure 4. Data collection phases: 2017



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Production phase I. The first phase of data collection began approximately 4 weeks after the start of the early completion phase depending on the sample member's response to the base-year study. During production phase I, DCIs called all sample members to encourage them to complete the survey by web or telephone. Sample

members continued to be offered the same incentive amounts as were offered during the early completion phase except for the additional early-bird incentive.

Production phase II. This phase began approximately 17 weeks after the start of the early completion phase depending on the sample member's response to the base-year study. During production phase II, DCIs continued to call sample members to encourage them to complete the survey by web or by telephone. Incentive offers did not change. In January 2018, an abbreviated version of the survey was offered to all base-year nonrespondents who had not yet participated in B&B:16/17. The abbreviated surveys included fewer questions and therefore required less time to complete—approximately 10 minutes. The abbreviated surveys contained questions that provided key data that could classify a sample member as a B&B:16/17 respondent.

Nonresponse conversion phase. The nonresponse conversion phase of data collection began in February 2018. During the nonresponse conversion phase, DCIs continued to call sample members to encourage them to complete the survey by web or by telephone. Sample members were offered the same incentive amount as they were during both production phases. In February 2018, the abbreviated survey was offered to all base-year respondents who had not yet participated in B&B:16/17. The abbreviated survey was offered to 9,860 sample members. Of those, 38 percent completed a survey (table 15).

Table 15. Abbreviated survey offers and completions, by base-year response status and data collection group: 2017

Institution characteristics and student type	Eligible sample[2]	Abbreviated survey offers		Abbreviated survey completions[1]	
		Number	Percent of eligible sample	Number	Percent of offered abbreviated surveys
Total	25,570	9,860	38.6	3,780	38.4
Base-year response status					
NPSAS:16 respondent	21,070	6,100	29.0	2,880	47.2
NPSAS:16 nonrespondent	4,500	3,760	83.5	900	24.0
Data collection group[3]					
Group 1	1,110	930	84.0	210	22.4
Group 2	6,390	4,050	63.4	1,390	34.2
Group 3	6,860	2,500	36.4	1,030	41.1
Group 4	11,210	2,380	21.2	1,160	48.8

[1] Abbreviated survey respondent count includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[2] Count includes all fielded cases who were offered the abbreviated version of the survey in all phases.
[3] Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Extension phase. The extension phase of data collection began in late March 2018. During the extension phase, DCIs continued to call sample members to encourage them to complete the survey by Web or by telephone. Both early and late base-year respondents who completed the survey were offered a $40 incentive with the opportunity to earn $5 more, for a total of $45, if they completed during the first 3 weeks of this phase. Located base-year nonrespondents and abbreviated respondents who completed the survey were offered a $50 incentive. Nonlocated base-year respondents who completed the survey were offered a $55 incentive.

The eligibility screener was reintroduced on July 1, 2018, to all remaining B&B:16/17 nonrespondents for a period of 3 weeks as a final attempt to identify cases that are not eligible for B&B:16/17. Sample members who completed this screener were offered a $10 incentive. Any cases deemed ineligible during B&B:16/17 will be excluded from fielded cases in the next follow up with this cohort (B&B:16/20).

Interviewing. The availability of the Web survey was announced to sample members through mail and e-mail, which included the URL and the sample members' log-in credentials. E-mails to sample members also included a direct link to the survey for their convenience. The Web survey was available 24 hours a day, 7 days a week throughout the entire data collection. Although the telephone interview was available throughout the entire data collection, the e-mail, letters, and text messages encouraged sample members to complete the Web survey, particularly during the early completion phase.

Once outbound calling began, DCIs were tasked with attempting to locate sample members, gaining their cooperation, answering questions about the study, and conducting interviews. When they successfully reached sample members, interviewers encouraged them to complete the interview immediately over the telephone. Alternatively, an interviewer could e-mail secure log-in credentials to the Web survey for sample members who preferred to participate on the Web. Interviewers followed up with sample members by telephone 8 days after they selected the Web option if they had not yet completed the survey.

The automated call scheduler assigned cases to interviewers by type and priority, best day and time to call, and scheduled appointments. The scheduler organized cases into queues based on a variety of factors, including prior contact status (e.g., cases that had been recently contacted, or had never been contacted), refusal status, and appointments set during a prior contact attempt. The scheduler also automatically ordered numbers to call by prioritizing lines most likely to result in contacting and interviewing the sample member. Staff added new numbers continuously, based on telephone contacts and tracing efforts, as well as updates received through mailings,

e-mails, or help desk call-ins. The call scheduler reprioritized telephone numbers based on new information as it came in.

3.2.6 Résumé Collection

The full-scale study collected résumés from sample members who agreed to upload a résumé document to a secure NCES server. This data collection was used to assess respondent willingness to provide résumés and to evaluate its utility as a data quality indicator (e.g., identifying disagreements between survey responses and employment information). Résumé collection also has the potential to aid in imputations by providing additional information about respondents' employment and education histories. As an alternative data source, résumés may also increase efficiency and reduce participant burden in future B&B:16 cohort data collections. Compared to the B&B:08/18 field test résumé collection, which was incentivized (see B&B:08/18 field test; OMB#1850-0729), the résumé collection in B&B:16/17 full-scale data collection was not incentivized. Consequently, fewer résumés, in terms of respondent percentage, were uploaded.

Out of all B&B:16/17 survey respondents, 1,960 (10 percent) uploaded a résumé. Table 16 shows the distribution of résumé uploads by survey type (i.e., full or abbreviated). Of respondents who completed the full survey, 11 percent uploaded résumé; whereas 6 percent of respondents who completed the abbreviated survey uploaded a résumé.

Table 16. Number and percentage of résumés uploaded, by survey type: 2017

	Surveys		Résumé uploaded		Percent résumé
Survey type	Number	Percent	Number	Percent	uploaded
Total	**19,170**	**100.0**	**1,960**	**100.0**	**10.2**
Full complete	15,480	80.7	1,750	89.0	11.3
Abbreviated	3,690	19.3	210	10.5	5.6

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table 17 shows the distribution of résumé upload file types. Most uploads, 59 percent, were uploaded as Microsoft Word documents. Thirty-nine percent were uploaded as PDF documents and 1 percent were uploaded as images. Less than 1 percent of résumés were uploaded as plain text or another file type.

Table 17. Number and percentage of résumés uploaded, by file type: 2017

File type	Number of cases	Percent
Total	**1,960**	**100.0**
Microsoft Word document	1,160	59.1
PDF	770	39.1
Image	30	1.4
Plain text or another file type	10	0.4

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

After uploading a résumé, respondents were asked to describe how up to date their résumés were by indicating one of the following statuses: (1) up to date and accurately reflected employment history, (2) mostly up to date and generally reflected employment history, or (3) not up to date or excluded several employers. Sixty-five percent of respondents indicated their résumés were up to date, 32 percent indicated their résumés were mostly up to date, and, 3 percent of résumés were not up to date. Table 18 shows the number and percentage of résumés uploaded, by description of résumé.

Table 18. Number and percentage of résumés uploaded, by up-to-date status: 2017

Up-to-date status	Number of cases	Percent
Total	**1,960**	**100.0**
Up to date	1,280	65.3
Mostly up to date	620	31.6
Not up to date	60	2.9
Missing	#	0.2

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Résumé coding process. All résumés were manually coded by project staff. To improve intercoder reliability, a coding guide was developed for staff to follow. The coding guide specified the operationalization and valid values for each data element coded from the résumés. Additionally, twenty-four percent of all résumés were coded twice, and the data were compared to ensure accurate data entry. Overall, there was a 95 percent agreement rate across all variables. A third independent review of all instances of disagreement was then conducted to resolve any inconsistencies in the coding of a résumé.

Data elements coded from résumés included résumé respondent information, undergraduate enrollment, postbaccalaureate enrollment, employment history, and

teaching experiences, when applicable. Institutions attended, major or fields of study, and degrees or certificates completed were captured for each enrollment. GPAs, when available, were also coded for undergraduate education. Employment history data that were coded included employer information, dates of employment, and job titles held at each employer. For résumés that listed teaching, grades taught and subjects taught were also coded when available.

During the résumé coding process, all résumé uploads were deemed as either "codeable" and useable résumés, or "uncodeable" and unusable résumés. Examples of uncodeable résumés include pictures or course papers that were uploaded in place of a résumé. Of the uploaded files, less than 1 percent were deemed uncodeable (table 19). All résumés deemed codeable were classified as a traditional résumé, nontraditional résumé, or academic curriculum vitae (CV). Both traditional and nontraditional résumés had similar content, such as education and work history and skills and accomplishments, but nontraditional résumés were written in paragraph format or included samples of an individual's work, like graphic designs or photography. CVs were defined as having a scholarly focus by listing professional presentations, publications, or research grants and awards.

Table 19. Number and percentage of résumés uploaded, by résumé type: 2017

Résumé type	Number of cases	Percent
Codeable and useable résumé	1,950	99.5
Traditional résumé	1,890	96.5
Nontraditional résumé	20	1.2
Academic curriculum vitae (CV)	40	1.8
Uncodeable and unuseable résumé	10	0.5

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Résumé data results. To better understand the data quality and comprehensiveness available in résumés, agreement rates between employment history reported on résumés versus employment history reported in the survey were analyzed. The number of employers reported in each data source, the survey and résumé, was used as a point of comparison as a data quality check. The survey collected employment history between the month when the respondent completed a 2015–16 bachelor's degree and June 2017. Thus, the number of employers provided on the résumé with employment dates between the date of bachelor's degree completion and June 2017 were counted and compared with the survey data for each respondent who uploaded a résumé. When comparing number of employers since completion of a 2015–16 bachelor's degree from both data sources, 42 percent of respondents provided the

same number of employers on their résumé as they did in the survey, 21 percent of respondents listed more employers on their résumé than reported in the survey, and 37 percent of respondents reported more employers in the survey than on their résumé. Respondents who had more employers on their résumés than they reported in the survey had an average of 1.5 more employers on their résumé than they reported in the survey. Among respondents who reported more employers in the survey than on their résumés, an average of 2.1 more employers were reported in the survey than on their résumés. The agreement rates between employment history reported on the résumé and reported in the survey are shown in table 20.

Table 20. Number and percentage of résumés uploaded, by employers on résumé vs. employers provided in survey: 2017

Employers on résumé vs. employers provided in survey	Number of cases	Percent
Total	**1,960**	**100.0**
Same number of employers	820	41.9
Résumé has more employers	420	21.2
Survey has more employers	720	36.9

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.2.7 Survey Data Collection Results

Completion by mode of administration. B&B:16/17 surveys were completed by web or by telephone. The majority of surveys (61 percent) were completed by web on a nonmobile device. Web completion on a mobile device was also popular among sample members with 5,480 (28 percent) completing by web mobile mode, as shown in table 21. Telephone interviews accounted for 11 percent of all completed surveys.

Table 21. Distribution of survey respondents, by mode of administration: 2017

Mode of administration	Number	Percent
Total	**19,490**	**100.0**
Web surveys	17,420	89.3
Web nonmobile	11,940	61.2
Web mobile	5,480	28.1
Telephone	2,080	10.7

NOTE: Includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Survey completeness by base-year response status. Response and completion rates, and survey completeness, differed by base-year response status. table 22 shows 83 percent of base-year survey respondents completed a full survey, compared to 44 percent of base-year survey nonrespondents. Of base-year respondents, 16 percent completed an abbreviated survey, compared with 53 percent of base-year nonrespondents.

Table 22. Survey completeness, by survey type and base-year response status: 2017

		Base-year response status			
		Respondents		Nonrespondents	
Survey completeness	Total	Number	Percent	Number	Percent
Total	**19,490**	**17,850**	**100.0**	**1,640**	**100.0**
Full	15,480	14,760	82.7	730	44.1
Abbreviated	3,690	2,820	15.8	880	53.3
Partial	320	270	1.5	40	2.6

NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Survey completeness, by survey type and data collection group. Response and completion rates, and survey completeness, differed by each data collection group. table 23 shows 45 percent of Group 1, 62 percent of Group 2, 79 percent of Group 3, and 88 percent of Group 4 completed the full survey. Abbreviated surveys were completed by 53 percent of Group 1, 36 percent of Group 2, 19 percent of Group 3, and 12 percent of Group 4.

Table 23. Survey completeness, by data collection group and survey type: 2017

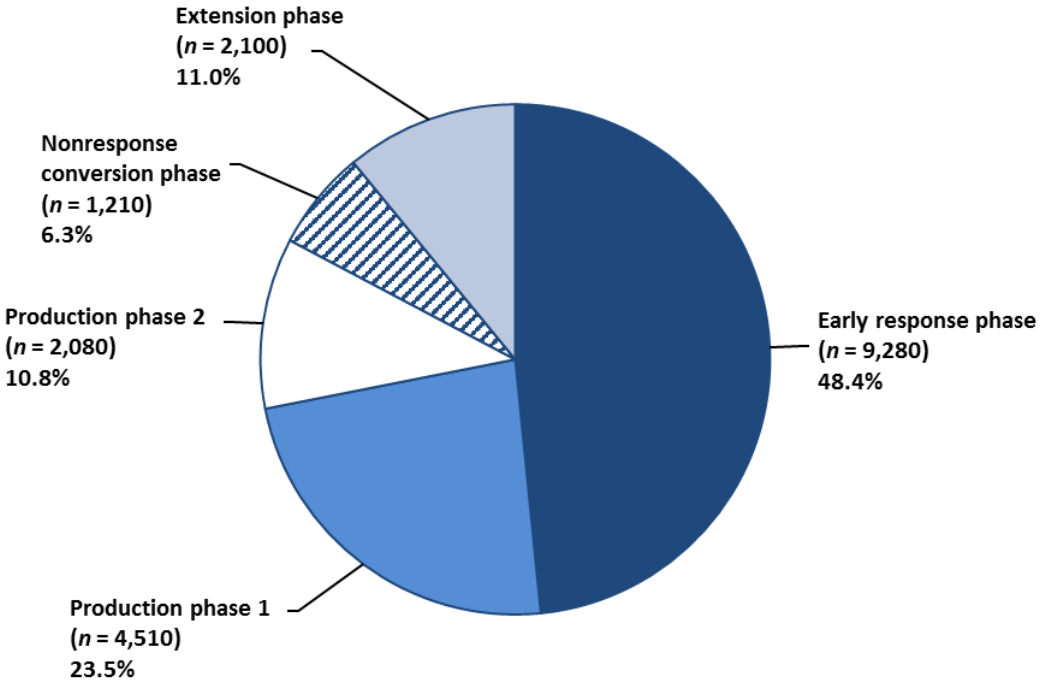
		Data collection group[1]							
		Group 1		Group 2		Group 3		Group 4	
Survey type	Total	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	**19,490**	**390**	**100.0**	**3,730**	**100.0**	**5,390**	**100.0**	**10,000**	**100.0**
Full	15,480	170	45.2	2,290	61.6	4,270	79.3	8,740	87.5
Abbreviated	3,690	200	52.5	1,340	36.0	1,000	18.5	1,150	11.5
Partial	320	10	2.3	90	2.4	120	2.2	100	1.0

[1]Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Completion by data collection phase. The data collection design consisted of five operational phases: an early completion phase, a production phase I, a production

phase II, a nonresponse conversion phase, and an extension phase. Forty-eight percent of all completed surveys were completed during the early completion phase. Twenty-four percent of all completed surveys were completed during production phase I. Eleven percent of all completed surveys were completed during production phase II. Six percent of all completed surveys were completed during the nonresponse conversion phase. Eleven percent of all completed surveys were completed during the extension phase. A chart of survey completions, by data collection phases is presented in figure 5.

Figure 5. Survey completions, by data collection phase: 2017



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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Eligibility screener completion. The B&B:16/17 eligibility screener was offered to all base-year nonrespondents before data collection began and then to all B&B:16/17 nonrespondents after data collection ended. Six percent of these sample members completed the B&B:16/17 eligibility screener (table 24). Screener data collection resulted in 60 ineligible cases and 500 eligible cases.

Table 24. Survey completion rates, by eligibility screener completion: 2017

	Completed screener		Surveyed[1]	
Status of screener completion	Total	Eligible[2]	Number	Percent
Completed	560	500	440	87.3
Did not complete	8,940	8,940	3,670	41.0

[1] Includes eligible students who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[2] Includes fielded sample members invited to complete the eligibility screener.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.3 Survey Quality Control

This section summarizes the training of data collection staff, locating and tracing activities, and the various quality control procedures employed throughout the course of data collection.

3.3.1 Interview Monitoring

Project staff regularly monitored telephone interviews during B&B:16/17 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.

QEs recorded feedback on standardized monitoring forms that covered such topics as interviewer professionalism, question administration, conversational interviewing, and familiarity with the instrument. Interviewers received feedback from monitoring sessions, and QC meetings frequently incorporated issues identified during monitoring to improve the overall quality of telephone interviews. Segments of recorded interviews were also used as training aids during project trainings and QC meetings.

3.3.2 Quality Circle Meetings

QC meetings served as a tool for communication among project staff, call center staff, and DCIs. Some of the topics covered during meetings included:

- clarification of questions and item responses from the survey instrument;

- reinforcement of successful interviewing and refusal conversion techniques;
- guidelines for providing detailed case comments;
- strategies for gaining cooperation from sample members and other contacts;
- data security protocols; and
- study progress.

Project staff prepared notes to summarize meeting discussions, and interviewers were responsible for reviewing all notes. The notes served as a reference for interviewers throughout the course of data collection.

3.3.3 Survey Timing Burden

To assess the burden associated with participating in B&B:16/17, the instrument recorded the elapsed time that respondents took to complete each form. A form is a survey screen in the instrument that contains one or more questions, help text, response options, and the navigation buttons to move to the previous or next forms in the survey. The elapsed times to complete each form were summed to create times for sections and total survey times.

Of special interest was the average time it took respondents to complete the survey based on mode of administration, prior-round respondent status, and survey type (i.e., full or abbreviated survey). Mode of administration typically affects the time to complete a survey; for example, CATI tended to take longer than self-administered web surveys because, in CATI, each question must be read aloud.

The following cases were excluded from the survey time burden analysis: partial surveys, total time outliers, and cases that required imputation of more than two form times due to multiple survey sessions.[22] To detect total time outliers, B&B:16/17 staff grouped cases by survey type (i.e., full and abbreviated) and mode of administration. Before outliers were determined, the distribution of survey times required that the data be normalized using a Box-Cox power transformation (Box and Cox 1964). Cases with total time values smaller than the 25th percentile plus 1.5 times the interquartile range or larger than the 75th percentile plus 1.5 times the interquartile range were deemed outliers and excluded from the subsequent analysis (Turkey 1977). Overall, the outlier detection method led to the exclusion of 230 cases, representing one percent of all completed full and abbreviated surveys. Given

[22] Interviews completed in more than one session were included in the timing analysis when possible. This required imputing the time spent on the first form the respondent saw when he or she began a new session to continue the survey. The median time other respondents spent on the same form was used for imputation. To avoid introducing excessive imputation and uncertainty into the timing estimates, cases that required more than two form imputations per respondent were excluded.

the parameters for including and excluding cases, 16,710 of the 19,560 total surveys (85 percent) were included in the timing analysis. Table 25 shows the number of cases included and excluded in the timing analysis.

Table 25. Number and percentage of surveys included and excluded from the timing report, by survey type: 2017

Survey type	Number of cases	Percent
Total	**19,560**	**100.0**
Total surveys included in timing report	16,710	85.4
Completed full survey	13,320	68.1
Completed abbreviated survey	3,390	17.3
Surveys excluded from timing report	2,860	14.6
Partial surveys	390	2.0
Total survey time outliers	230	1.2
Completed in more than one session	2,240	11.4

NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Partial surveys and time outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

The full-scale survey had a total of nine sections which included: (1) eligibility, (2) undergraduate education, (3) postbaccalaureate education/training, (4) financial aid, (5) postbaccalaureate employment, (6) teaching, (7) background, (8) locating, and (9) incentives. On average, the full survey took 35.1 minutes to complete. Each survey was completed either by CATI or by self-administered web survey. For the purpose of analysis, the self-administered web completion mode was separated into those surveys completed on a mobile device (e.g., smartphone or tablet), referred to hereafter as "web mobile," and those surveys completed on a nonmobile device, referred to hereafter as "web nonmobile."

Table 26 shows the average time to complete the survey, by mode of administration for the full and abbreviated surveys. Web nonmobile surveys took an average of 33.8 minutes to complete, significantly the lowest timing burden of all modes, compared to both telephone interviews ($t = 30.53$, $p < .0001$) and web mobile surveys ($t = 3.08$, $p = .002$). Web mobile surveys, which took an average of 34.7 minutes to complete, took significantly less time than telephone interviews, which took an average of 49.1 minutes to complete ($t = 26.86$, $p < .0001$).[23] The differences in completion times of the survey among modes was expected. A mobile screen and lack of full keyboard increases burden for web mobile respondents and questions in telephone mode are read aloud to respondents, slowing completion time.

[23] Satterthwaite (1946) approximation was used in tests with unequal variances.

The abbreviated survey was a shorter version of the full survey and included the following subset of sections: eligibility, postbaccalaureate employment, locating, and incentives. The abbreviated survey took an average of 13.6 minutes to complete. Web nonmobile abbreviated surveys took an average of 12.0 minutes to complete, which is also significantly less time to complete compared to both telephone abbreviated surveys (t = 14.04, p <. 0001) and web mobile abbreviated surveys (t = 3.10, p = .002). Web mobile abbreviated surveys took an average of 13.2 minutes to complete, significantly less average time than the 16.8 minutes it took to complete the abbreviated telephone interviews (t = 8.50, p < .0001).

Table 26. Average time in minutes to complete the full and abbreviated surveys, by mode of administration: 2017

			Mode of administration					
	Overall		Web nonmobile		Web mobile		Telephone	
Completed surveys	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Full	12,990	35.10	8,470	33.79	3,630	34.70	900	49.12
Abbreviated	3,220	13.59	1,500	12.04	890	13.24	830	16.78

NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Partial surveys and time outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Timing by teacher status. Within the full-scale survey, respondents were classified as either 'teachers' (preK–12) or 'nonteachers'. This classification was based upon what the respondent entered on the occupation coder—a form in the survey that asked respondents to enter a job title and then select, or code, a standardized occupation from a list of options relevant to the job title provided. If a respondent's selected job title was a preK–12 teacher and the respondent also indicated being a regular classroom, support, or long-term substitute teacher, they were classified as a teacher and received more questions about their teaching experiences in both the employment and teaching sections. Given these additional questions, it was expected that surveys completed by teachers would be longer than those of nonteachers. Table 27 shows full survey completion times by teacher status and mode of administration; and table 28 shows the employment section completion times by teacher status and mode of administration.

Teachers took an average of 39.4 minutes to complete the full survey, significantly longer than nonteachers, who took 34.8 minutes (t = -8.41, p < .0001) (table 27). As expected, much of the overall time difference between teachers and nonteachers can be attributed to the employment section of the survey because teachers were asked a set of questions—for each teaching position they reported—that nonteachers did not receive. These extra questions include a school coder, as well as questions related

to subjects and grades taught, type of teaching position, and preparedness. This section was significantly longer for teachers, who spent an average of 16.4 minutes in the employment section; whereas, nonteachers took an of average 12.5 minutes to complete the section ($t = -12.30$, $p < .0001$) (table 28). Teachers who completed the survey via web nonmobile mode had the shortest survey time across all modes for teachers, at 38.1 minutes, and took significantly less time compared to teachers who completed in telephone mode (56.4 minutes), ($t = 7.35$, $p < .0001$) (table 27). Web mobile surveys for teachers also took significantly less time to complete, at 39.4 minutes, compared to telephone surveys with teachers ($t = 6.62$, $p < .0001$). There were no significant differences between the completion time of web surveys by mobile and nonmobile device for teachers ($t = 1.01$, $p = .3135$).

Table 27. Average time, in minutes, to complete the full survey, by mode of administration and teacher status: 2017

			Mode of administration					
	Overall		Web nonmobile		Web mobile		Telephone	
Teacher status	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Total	**12,990**	**35.10**	**8,470**	**33.79**	**3,630**	**34.69**	**900**	**49.12**
Teachers[1]	860	39.38	550	38.12	270	39.27	40	56.44
Nonteachers	12,130	34.79	7,920	33.49	3,360	34.33	850	48.76

[1] Respondents who classified an occupation as a prekindergarten through 12th grade (preK–12) teacher.
NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Partial surveys and time outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table 28. Average time, in minutes, to complete the postbaccalaureate employment section, by mode of administration and teacher status: 2017

			Mode of administration					
	Overall		Web nonmobile		Web mobile		Telephone	
Teacher status	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Total	**12,990**	**12.79**	**8,470**	**12.08**	**3,630**	**12.85**	**900**	**19.31**
Teachers[1]	860	16.44	550	15.64	270	16.71	40	25.24
Nonteachers	12,130	12.53	7,920	11.83	3,360	12.55	850	19.02

[1] Respondents who classified an occupation as a prekindergarten through 12th grade (preK–12) teacher.
NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Partial surveys and time outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Timing by number of employers. The full-scale survey collected the number of employers between bachelor's degree completion and June 2017—the anchored end date for the survey time frame. Respondents were then asked a series of questions about each employer in a loop. Understandably, the more employers a respondent

had, the longer it took them to complete the postbaccalaureate employment section. Table 29 shows the average time to complete the postbaccalaureate employment section by number of employers and across all modes of administration. Any additional employers— thus additional employer loops in the survey—resulted in a significant increase in the overall survey completion time for respondents.[24]

Table 29. Average time, in minutes, to complete the postbaccalaureate employment section, by mode of administration and number of employers: 2017

			Mode of administration					
	All respondents		Web nonmobile		Web mobile		Telephone	
Number of employers	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Total	**12,990**	**12.79**	**8,470**	**12.08**	**3,630**	**12.85**	**900**	**19.31**
No employment	1,440	2.90	910	2.78	430	2.78	90	4.65
One employer	6,370	11.01	4,190	10.32	1,740	11.44	440	15.88
Two employers	3,500	15.74	2,270	14.97	1,000	15.52	230	24.44
Three employers	1,190	20.48	770	19.05	330	20.86	90	30.71
Four employers	340	23.67	220	22.14	90	24.20	30	33.20
Five or more employers	160	27.81	110	27.54	40	25.92	10	36.20

NOTE: Number of employers include those reported in the survey between bachelor's degree completion date and June 2017. Analysis includes only completed cases that have two or fewer forms of imputed timing data. Partial surveys and time outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Longest form times. The average time to administer each individual form within the survey was also analyzed—excluding the front end, locating, and incentives forms. Coder forms, which are linked to an underlying database that provides standardized response options for respondents to select from using a predictive search functionality, represent some of the longest form times, overall, in the survey. This is expected given the more involved process of using the predictive text search functionality of the coders. For this reason, coder forms are analyzed separately from other form types in the form-level timing analysis. See section 3.1.2 for more information about coder functionality, underlying databases, and coding success rates by coder.

The forms with the longest administration times, by form type, are listed in descending average time in table 30, along with the mean and median timing. All 10 coders are listed first, followed by the 10 noncoder forms (i.e., forms not linked to an underlying database of standardized responses) with the highest average times.

[24] Reporting two employers (15.74 minutes) took significantly longer than reporting one employer (11.01 minutes) ($t = -31.98$, $p < .0001$); reporting three employers (20.48 minutes) took significantly longer than reporting two employers ($t = -16.16$, $p < .0001$); reporting four employers (23.67 minutes) took significantly longer than three employers ($t = -5.29$, $p < .0001$); reporting five employers (27.81 minutes) took significantly longer than four employers ($t = -3.53$, $p = .0005$).

Table 30. Forms with the highest average survey times in seconds, by form and form type: 2017

Form	Form description	Form type	Number of cases	Mean time (seconds)	Median time (seconds)
Coder forms					
BB17DOCCEX01	Occupation	Coder	13,590	126.28	83.07
BB17BNPMAJPT	Major/field of study 1 at bachelor's institution	Coder	2,450	57.13	35.05
BB17BSCHPT01	Other undergraduate school	Coder	6,540	56.28	32.58
BB17EJBSPT01	PreK–12 school where taught	Coder	890	53.09	30.09
BB17CPTMAJ01	Postbaccalaureate major/field of study	Coder	1,960	49.53	30.25
BB17DJBZIPEX01	Employer zip code	Coder	11,170	40.95	26.46
BB17DINDTX01	Primary industry of employer	Coder	4,150	38.23	25.20
BB17BNPMJ2PT	Major/field of study 2 at bachelor's institution	Coder	300	31.87	23.02
BB17CSCHPT01	Postbaccalaureate school	Coder	2,060	31.02	16.10
BB17FORIGIN	Country of origin	Coder	1,680	11.56	8.73
Noncoder forms					
BB17DSTDAT01	Job start date	Dropdowns	3,670	57.66	43.19
BB17BBDAT01	Date first enrolled at other postsecondary institution	Dropdowns	6,490	43.86	24.41
BB17DEMPS101	First pay change	Textbox/Radio Buttons	6,950	41.52	28.99
BB17DWKMON01	Months employed	Months form	13,930	40.99	28.28
BB17DEMPSS01	Starting pay	Textbox/Radio Buttons	13,910	38.58	26.03
BB17BODEG01	Other postsecondary institution: degree program	Radio Button	6,410	36.55	25.37
BB17DIMPBEN	Job choice factors	Likert	12,840	34.84	26.00
BB17CENMON01	Dates of postbaccalaureate enrollment	Months form	1,950	33.69	23.76
BB17DJSAT01	Job satisfaction	Likert	11,120	33.52	24.15
BB17ETHNKINFL	Teaching influences	Likert	860	32.54	25.10

NOTE: PreK = prekindergarten. Analysis includes only completed cases that have two or fewer forms of imputed timing data. Partial surveys and time outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Five of the 10 coders took approximately 50 seconds or more, on average, to respond to. The *Occupation* coder (BB17DOCCEX01) had the longest average form time at 126.3 seconds. This form asked respondents to identify and code their occupation title using the 2014 O*NET database. The second longest coder in the survey was *Major/field of study 1 at BA institution* (BB17BNPMAJPT) with an average administration time of 57.1 seconds. This form asked respondents to identify and code their declared major at the bachelor's degree granting institution using an underlying database of the 2010 CIP codes. The average time for *Other undergraduate school* (BB17BSCHPT01) was 56.3 seconds. *PreK–12 school where taught* (BB17EJBSPT01), which was only administered to teachers, took an average of 53.1 seconds, and *Postbaccalaureate major/field of study* took an average of 49.5 seconds.

Relative to other survey forms, longer timing on three noncoder forms was expected due in part to form type, which displays several items and scaled response options in a grid. On average, *Job choice factors* (BB17DIMPBEN) took 34.8 seconds, *Job*

satisfaction (BB17DJSAT01) took 33.5 seconds, and *Teaching influences* (BB17ETHNKINFL) took 32.5 seconds. In addition to the form type, these forms required respondents to think critically about the influence and impact of different postbaccalaureate decisions, which was more cognitively burdensome on respondents, and is reflected in the timing.

The remaining noncoder forms that were the longest to answer were more cognitively burdensome than other forms in the survey. These forms relied on the respondents' recall of detailed information that may have taken place months prior to completing the survey. For example, the form, *Job start date* (BB17DSTDAT01) averaged 57.7 seconds. This form required respondents to provide the date they started a specific job with an employer when they indicated having more than one job with that employer. *First pay change* (BB17DEMPS101) averaged 41.5 seconds, and *Starting pay* (BB17DEMPSS01) averaged 38.6 seconds. These forms asked respondents to report their earnings amount at two different points in time. BB17DEMPS101 also asks for the date the new amount began.

3.3.4 Data Collection Interviewer Hours and Number of Calls

Throughout data collection, DCIs logged roughly 15,380 hours, and completed 2,000 telephone interviews. DCI hours were spent on case management activities, including locating and contacting sample members, prompting sample members to complete surveys, reviewing case events, scheduling appointments for callbacks, recording events in the case management system, and responding to incoming calls to the help desk. During B&B:16/17, DCIs responded to 803 inbound calls and 137 voicemail messages for the help desk.

On average, interviewers made 10 calls per sample member during the data collection period. Average call counts for completed cases varied by survey completion mode (table 31).

Table 31. Average number of calls, by response status and mode of administration: 2017

Response status and mode of administration	Number of eligible cases[1]	Number of calls	Average number of calls
Total	**25,570**	**265,950**	**10.4**
Respondent[2]	19,490	105,990	5.4
Web surveys	17,420	79,250	4.6
Web surveys, after outbound calls	6,460	79,250	12.3
Telephone interviews	2,080	26,730	12.9
Nonrespondent and exclusions	6,080	159,960	26.3

[1] Includes fielded cases.
[2] Includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Respondents who completed an interview by telephone required 13 calls on average, compared to 5 calls on average to cases who completed the survey by web with telephone prompting ($t = 2.21$, $p < .03$). The majority of web survey respondents did not receive any calls because they completed the survey before telephone efforts began. Additionally, whether sample members previously participated in NPSAS:16 impacted how many calls were needed before they completed the survey. Respondents who completed the base-year survey required fewer calls (eight on average) than respondents who did not complete the base-year survey (21 on average) ($t = 53.3$, $p < .001$). Table 32 shows the average number of calls by base-year response status and data collection group.

Table 32. Average number of calls, by base-year response status and data collection group: 2017

Response status and data collection group	Number of eligible cases[1]	Number of calls	Average number of calls
Total	**25,570**	**265,950**	**10.4**
Base-year response status			
NPSAS:16 respondent[2]	21,070	172,880	8.2
NPSAS:16 nonrespondent	4,500	93,070	20.7
Data collection group[3]			
Group 1	1,110	23,740	21.5
Group 2	6,390	98,960	15.5
Group 3	6,860	74,030	10.8
Group 4	11,210	69,220	6.2

[1] Includes fielded cases.
[2] Includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[3] Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.3.5 Debriefing

At the end of data collection, project staff conducted a debriefing of DCIs regarding their experiences during the study. Feedback was collected from DCIs, quality control supervisors, and QEs, through an anonymous online survey and in-person meetings. Topics of the debriefing discussions included DCI training, DCI support and monitoring, systems for locating and contacting sample members, gaining sample member cooperation, and B&B:16/17 survey design and administration. Feedback from DCIs and supervisory staff will be used to inform the planning and implementation of future B&B studies.

With regard to training, interviewers were appreciative of "hands-on" training with respect to practicing interviews. In response to feedback from prior studies, B&B:16/17 training included more "hands-on" activities for interviewers to gain experience with the case management and contacting systems and the survey instrument, and also featured recordings of interviewers successfully administering portions of similar interviews. Based on interactions with sample members and other contacts, interviewers also emphasized the utility of reviewing refusal aversion strategies and the answers to FAQs as strategies to gain cooperation from reluctant sample members and "gatekeepers" (e.g., roommates or family members) who may prevent DCIs from reaching 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. They also reported that recorded interviews used during monitoring feedback sessions and Quality Circle meetings were helpful in improving their interviewing techniques. Finally, interviewers provided feedback on how the flow of the abbreviated survey may be improved for future studies.

3.3.6 Refusal Conversion

"Refusal" cases are defined as sample members who refused to participate or had someone refuse on their behalf. B&B:16/17 staff integrated refusal conversion techniques into DCI training and reinforced them throughout data collection in Quality Circle meetings. Interviewers shared their experiences avoiding refusals and sought guidance from the group about particularly difficult cases. Sample members who ever refused, or had a gatekeeper refuse on their behalf, were placed in a separate queue that was worked by a subset of interviewers who were trained in specialized refusal conversion techniques. Overall, 11 percent of eligible sample members refused or had someone refuse on their behalf; of those, 24 percent of cases subsequently completed the survey.

Of the base-year respondents, 8 percent were refusals; of those, 31 percent subsequently completed the survey. Of the base-year nonrespondents, 24 percent were refusals; of those, 12 percent subsequently completed the survey. Table 33 shows the refusal and refusal conversion rates by base-year response status and data collection group.

Table 33. Refusal and refusal conversion rates, by base-year response status and data collection group: 2017

Base-year response status and data collection group	Total eligible[2]	Ever refused survey[1]		Surveyed, given refusal		
		Number	Percent of total eligible	Number	Percent of refused	Percent of total eligible
Total	**25,570**	**2,780**	**10.9**	**650**	**23.5**	**2.5**
Base-year response status						
NPSAS:16 respondent	21,070	1,680	8.0	520	31.3	2.5
NPSAS:16 nonrespondent	4,500	1,100	24.4	130	11.6	2.8
Data collection group[3]						
Group 1	1,110	150	13.7	20	15.2	2.1
Group 2	6,390	1,170	18.3	180	14.9	2.7
Group 3	6,860	760	11.1	220	28.7	3.2
Group 4	11,210	690	6.2	240	34.0	2.1

[1] Includes eligible students who ever refused or had a gatekeeper (parent or other contact) refuse on their behalf.
[2] Includes fielded eligible students who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[3] Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: NPSAS = National Postsecondary Student Aid Study. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.3.7 Responsive Design

Given the success of different data collection protocols—that is, aggressive, default and relaxed—used in the B&B:16/17 field test, the B&B-eligible full-scale sample was split into five groups based on response behavior during the NPSAS:16 full-scale survey.[25] For details on the field test protocol results, see appendix B.

Overall, five full-scale data collection groups were identified for implementing separate responsive design protocols. The five groups included the NPSAS:16 nonstudy members who were not fielded (Group 0). Groups 1 and 2 received an aggressive data collection protocol. Group 1 consisted of nonlocated base-year NPSAS:16 survey nonrespondents while located base-year NPSAS:16 nonrespondents and respondents who completed the abbreviated NPSAS:16 survey were in Group 2. Group 3, which consisted of base-year NPSAS:16 late survey respondents, received the default data collection protocol. Group 4 consisted of base-year NPAS:16 early survey respondents and received the relaxed data collection protocol. To summarize, the data collection groups and protocols were as follows:

- **Group 0: NPSAS:16 nonstudy members** were not fielded and were excluded from the subsequent analyses;

[25] NPSAS:16 nonstudy members were not fielded and compose a fifth group.

- **Group 1: Nonlocated NPSAS:16 survey nonrespondents** received the aggressive protocol;
- **Group 2: Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents** received the aggressive protocol;
- **Group 3: NPSAS:16 late survey respondents** (who responded after the first three weeks of NPSAS:16 survey data collection) received the default protocol; and
- **Group 4: NPSAS:16 early survey respondents** (who responded in the first three weeks of the NPSAS:16 survey data collection effort) received the relaxed protocol.

With the exception of Group 0, each full-scale data collection group received a targeted survey design, that is, a data collection protocol that varied by intensity, to increase response rates and decrease the potential for nonresponse bias (e.g., Lynn 2017). Specifically, the treatments applied, include (1) the offer for a promised eligibility screener incentive, (2) the early bird incentive, (3) mode tailoring, that is, contacting sample members in their NPSAS:16 completion mode (4) outbound calling prompting efforts, (5) an abbreviated survey, and (6) the incentive boost with the "flash" incentive, differed according to the assigned data collection group and protocol (i.e., aggressive, default, or relaxed). All fielded groups received an initial e-mail and letter, and reminder e-mails and postcards to complete the survey throughout data collection.

An overview of the differences in the full scale data collection protocols is shown in figure 6 (for details see OMB # 1850-0926 v.7).

Figure 6. Data collection group assignments, by protocol and data collection phase: 2017

Data collection phase	Data collection group assignments			
	Protocol			
	Aggressive		Default	Relaxed
	Nonlocated NPSAS:16 survey nonrespondents **Group 1; *n* = 1,220**	**Located NPSAS:16 survey nonrespondents and abbreviated respondents** **Group 2; *n* = 6,910**	**Late NPSAS:16 survey respondents** **Group 3; *n* = 7,330**	**Early NPSAS:16 survey respondents** **Group 4; *n* = 11,980**
Eligibility screener & address update – First 6 weeks, prior to main data collection	$10 postpaid incentive	$10 postpaid incentive	†	†
Early completion phase – First 4 weeks of main data collection	Data collection announcement letter and e-mail	Data collection announcement letter and e-mail offering additional $5 "Early Bird" incentive		Data collection announcement letter and e-mail thanking for prior participation
	CATI starts 2 weeks after mail outs – continues through all phases		Mode tailoring in NPSAS:16 completion mode	Mode tailoring in NPSAS:16 completion mode
Production phase I – Next ≤3 months	Postcard reminders		"Light" CATI Outbound begins	"Light" CATI Outbound begins *2 weeks after* start of phase
Production phase II – Next 3 months	Abbreviated survey offered Postcard reminders		Postcard reminders	
Nonresponse Conversion Phase – Final months	Abbreviated survey offered – offered to Groups 3 & 4 pending cases on February 19			
Extension phase	Incentive offer remains the same		Additional $10 incentive boost + 3-week $5 "flash" incentive	

† Not applicable.
NOTE: NPSAS = National Postsecondary Student Aid Study; CATI = computer-assisted telephone interviewing. In addition to contacts, all groups received regular e-mail and, with permission, text message reminders. Sample sizes correspond to assignment prior to data collection.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

As described in section 3.2.5, the main data collection consisted of five phases: the early completion phase, production phase I and II, the nonresponse conversion phase, and the extension phase. Due to the relative nature of the length of the phases, the exact date when a phase began differed by group. For example, the main data collection began after the 6-week screener period for base year nonrespondents in Group 1 and Group 2. Because main data collection ended at the same time for all groups, the duration of production phase I was adjusted for base-year nonrespondents to ensure production phase II and the nonresponse conversion phase have sufficient time. Due to lower than anticipated response rates, main data collection was extended by an additional 3 months with an additional incentive offer for Groups 3 and 4, and a post-data collection eligibility screener for all groups (see

B&B:16/17 full-scale; OMB # 1850-0926 v.7). The eligibility screener was warranted since ineligibility rates were too low compared to B&B:16/17 field test data collection, and what was observed during construction of the B&B:08/09 full-scale sampling frame (Wine et al. 2013).

Data collection results provide insight regarding the effectiveness of the various interventions in each of the protocols used in the different groups in terms of unweighted response rates (RR2) and representativeness. B&B:16/17 staff conducted nonresponse bias analyses to assess representativeness among the data collection groups. To estimate nonresponse bias, data on characteristics for respondents and nonrespondents are required that are related to the response mechanism and the survey outcome of interest. Since survey characteristics are not known for nonrespondents, a set of proxy variables derived from administrative records is used instead.[26] The following proxy variables, available from either the NPSAS:16 enrollment list, IPEDS header file, and/or CPS and NSLDS data, were examined:

- institution control (categorical);
- institution enrollment from IPEDS file (categorical);
- Pell Grant receipt (yes/no);
- Pell Grant amount (categorical);
- Direct Loan receipt (yes/no);
- Direct Loan amount (categorical);
- Parent Loan for Undergraduate Students (PLUS) amount (categorical);
- federal aid receipt (yes/no);
- institutional aid receipt (yes/no);
- state aid receipt (yes/no);
- any aid receipt (yes/no);
- sex (categorical);
- age group (categorical); and
- successful match to CPS (yes/no).

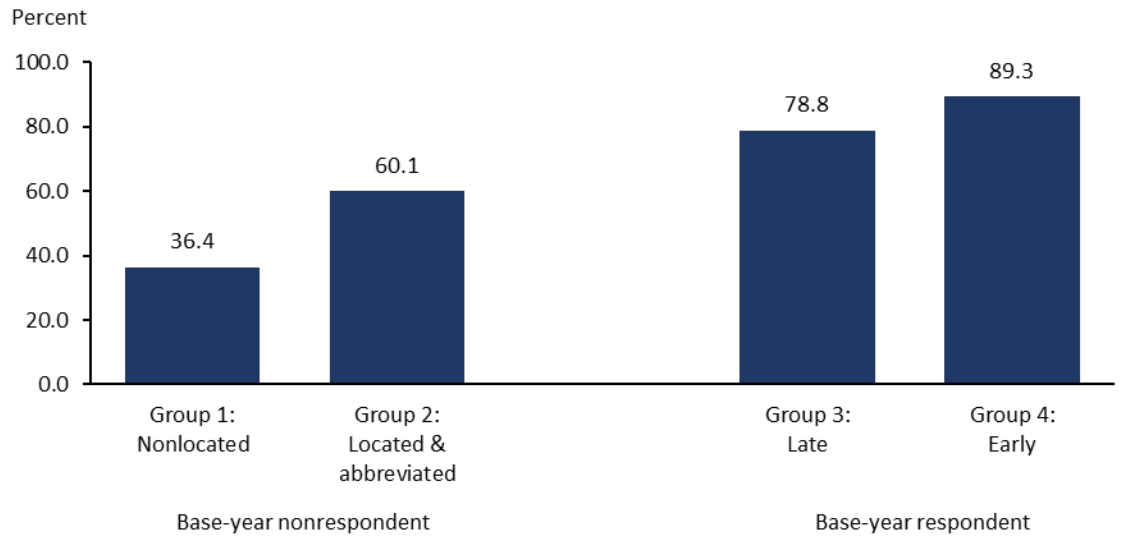
For the remainder of this section all analyses include respondents who completed the full survey, including partial surveys that provided sufficient information to be

[26] See section 6.2 Nonresponse Bias Analysis for more detail.

included,[27] or the abbreviated survey respondents. Not fielded, nonstudy members were excluded from the analyses.

Response rates. Figure 7 shows final response rates by data collection groups. Fielded cases had the highest response rate among base-year early respondents, at 89 percent, and lowest among base-year nonlocated nonrespondents, at a 36 percent response rate.

Figure 7. Overall response rates, by data collection group: 2017



NOTE: Results exclude not fielded, nonstudy members.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Among base-year respondents (Groups 3 & 4), the overall combined response rate is 85 percent. Base-year nonrespondents and abbreviated survey respondents (Groups 1 & 2) have a combined response rate of 57 percent.

Table 34 shows final response rates by data collection group at the end of each data collection phase. Despite the increased data collection efforts among the base-year nonrespondents, response rates are consistently lower in all data collection phases compared to the base-year respondents. As expected, sample members in Group 4 tended to complete the survey earlier and at higher rates compared to respondents in the remaining groups.

[27] The completion date for these cases is the last day of data collection.

Table 34. Final response rates at the end of each phase, by data collection group: 2017

	Data collection group[1]			
	Base-year nonrespondent		Base-year respondent	
	Aggressive		Default	Relaxed
Data collection phase	Group 1: Nonlocated *n* = 1,060	Group 2: Located & abbreviated *n* = 6,200	Group 3: Late *n* = 6,830	Group 4: Early *n* = 11,200
Early completion phase—4 weeks	7.8	23.3	32.6	49.3
Production phase I—3 months	15.8	36.3	51.6	70.1
Production phase II—3 months[2]	21.8	44.8	61.6	77.2
Nonresponse conversion phase—5 weeks	26.0	49.6	67.3	81.5
Extension phase—3 months	34.4	60.1	78.8	89.3

[1]Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
[2]This period is only 6 weeks for Groups 1 and 2 due to the later start of data collection.
NOTE: Results exclude nonstudy members and ineligible cases. The exact date for each phase differs by data collection group.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Representativeness. Unit nonresponse bias analysis based upon the approach described above demonstrates that the number of significantly biased indicators is smaller among the early and late base-year respondent—that is, 3 to 24 percent of the proxy variables exhibit significant bias compared to 38 percent among the nonlocated base-year nonrespondents and abbreviated respondents. Furthermore, the magnitude is generally smaller for the early and late base-year respondents compared to the nonlocated base-year nonrespondents and abbreviated respondents. The magnitude of relative nonresponse bias is largest in Group 1 compared to the other data collection groups. A summary of the nonresponse bias estimates by data collection group is displayed in table 35.

Table 35. Average, median, and maximum absolute relative nonresponse bias, and percentage of significant deviations, by data collection group: 2017

	Data collection group[1]			
	Base-year nonrespondent		Base-year respondent	
	Aggressive			
Nonresponse bias	Group 1: Nonlocated	Group 2: Located & abbreviated	Default Group 3: Late	Relaxed Group 4: Early
Minimum absolute relative nonresponse bias	#	#	0.12	0.06
Average absolute relative nonresponse bias	15.43	4.58	2.02	1.78
Median absolute relative nonresponse bias	12.68	5.02	1.68	1.29
Maximum absolute relative nonresponse bias	39.38	10.94	7.95	6.27
Percentage of significantly biased indicators	37.84	37.84	2.63	23.68

Rounds to zero.
[1]Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: Results exclude nonstudy members.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Comparing the joint estimates for the base-year nonrespondents (including and excluding nonstudy members) and the base-year respondents shows a similar pattern: the magnitude of nonresponse bias is lower among the base-year respondents (ranging from <1 to 25 vs. <1 to 7) as is the percentage of significantly biased proxy variables (44 vs. 37 percent) (table 36). Comparing the unit nonresponse bias estimates for the combined Groups 0, 1, and 2 (ranging from 1 to 25 with 44 percent significantly biased indicators) and the combined Groups 1 and 2 (ranging from <1 to 15 with 47 percent significantly biased indicators) shows that the decision to not field the nonstudy members introduced only negligible bias to the percentage of significantly biased indicators.

The number of significantly biased indicators for both base-year nonrespondents and base year respondents is higher compared to the group-level estimates suggesting that the biases are reinforcing each other when combining the two data collection groups, irrespective of whether the nonstudy members are included among the base-year nonrespondents (table 36).

Table 36. Average, median, and maximum absolute relative nonresponse bias, and percentage of significant deviations, by data collection group: 2017

	Data collection group[1]		
	Base-year nonrespondent		Base-year respondent
Nonresponse bias	Groups 0–2 Nonfielded/aggressive	Groups 1 & 2 Aggressive	Groups 3 & 4 Default/relaxed
Minimum absolute relative nonresponse bias	0.75	0.04	0.07
Average absolute relative nonresponse bias	8.32	5.75	1.55
Median absolute relative nonresponse bias	5.97	5.37	1.43
Maximum absolute relative nonresponse bias	25.43	14.82	6.81
Percentage of significantly biased indicators	44.44	47.22	36.84

[1]Group 1 = Nonlocated NPSAS:16 survey nonrespondents; Group 2 = Located NPSAS:16 survey nonrespondents and NPSAS:16 abbreviated survey respondents; Group 3 = NPSAS:16 late survey respondents; and Group 4 = NPSAS:16 early survey respondents.
NOTE: Results include nonstudy members.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Slightly higher response rates and earlier survey completion were observed despite the relaxed data collection protocol in the higher propensity strata (i.e., Group 4) compared to the medium propensity strata (i.e., Group 3) with more data collection interventions (e.g., earlier start of CATI, or the early bird incentive) among the base-year respondents. Both base-year nonrespondent groups received the aggressive data collection protocol. As expected, the response rates are lower in the nonlocated group of base-year nonrespondents. The magnitude of nonresponse bias is smallest among the base-year respondents and increases as response propensity decreases across strata; that is, nonresponse bias is largest for the nonlocated base-year nonrespondents.

3.4 Evaluation of Survey Items

3.4.1 Coder System Usability

An analysis of each coding system's coding success rate was done to determine the performance and usability of coding systems by respondents and telephone interviewers. For details about the reliability of coded responses, and the process of assigning codes to text strings not coded in the instrument, see section 5.2. Success rates for each coding system were calculated by dividing the number of responses coded by either the respondent or a telephone interviewer in the survey by the total number of times the coder was administered. Analysis of successful coding rates in the survey is limited to cases with a final complete or final partial complete status, including both full and abbreviated surveys (n = 19,490). Overall, respondents successfully coded their response 83 percent of the time when administered a coder (table 37).

Web nonmobile had the highest overall rate of successful coding, with 85 percent of responses coded in the survey. Web mobile and telephone surveys shared similar overall success rates of 78 percent and 79 percent, respectively. By coding system, coding success rates ranged from the industry coder, at 49 percent overall success, to the major coder, at 96 percent overall success. All coders in the survey, except for the industry coder, had a success rate of 70 percent or above.

Coder success rates by mode were consistent with overall success rates. The major coder had the highest success rate of any coding system across all three modes, with 93 percent or greater rates of success in each mode, while the industry coder had the lowest success rate of any coding system in each mode. Significance tests were conducted for each of the seven coders to determine significant differences in coding success rates between modes of administration.

Rates of successful coding were significantly higher in web nonmobile mode than in web mobile or telephone mode for every coder.[28] Coding success rates were significantly higher in web nonmobile mode than in telephone mode for the *country* ($p < .0001$), *industry* ($p < .0001$), *major* ($p < .0001$), *occupation* (p = .001), *preK – 12 school* ($p < .0001$), *postsecondary institution* ($p < .0001$), and *zip code* ($p < .0001$) coding systems. Coding success rates were significantly higher in telephone mode than in web mobile mode for two out of the seven coding systems: *country* ($p = .007$) and *zip code* ($p < .0001$). However, the coding success rate was significantly lower in telephone

[28] Coding success rates were significantly higher in web nonmobile mode than in web mobile mode for the *country* ($p < .0001$), *industry* ($p < .0001$), *major* ($p < .0001$), *occupation* ($p < .0001$), *pre-k – 12 school* ($p = .003$), *postsecondary institution* ($p < .0001$), and *zip code* ($p < .0001$) coding systems.

mode than in web mobile mode for *occupation* (p = .029), *preK-12 institution* (p = .054), and *postsecondary institution* (p < .0001).

Table 37 shows a summary of coding success rate, by mode of administration and coding system.

Table 37. Summary of coding success rate, by mode of administration and coding system: 2017

Coding system	Percent of responses coded in the survey			
	Overall	Web nonmobile	Web mobile	Telephone
Total	**82.6**	**85.0**	**78.1**	**78.9**
Country of origin	79.3	87.8	62.3	73.2
Industry	49.1	53.9	40.6	40.8
Major	95.9	97.2	92.9	93.8
Occupation	82.4	83.8	79.8	81.5
PreK–12 school	70.0	73.8	65.4	53.0
Postsecondary institution	90.4	91.5	89.5	84.1
Zip code	84.2	87.8	76.1	82.7

NOTE: PreK = prekindergarten.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.4.2 Help Text

Respondents and telephone interviewers were able to click a help button provided on each form to obtain form-specific help text. Additionally, some questions provided embedded hyperlinks within question wording or response option text to prompt respondents to access the help text on the form. Whether accessed through the help button or through an embedded hyperlink, the help text provided definitions of key terms and phrases used in question wording and response options, and it provided any explanations thought to help clarify and standardize meaning for respondents.

Overall, respondents and interviewers accessed help text less than 1 percent of the time.[29] Telephone interviewers accessed help text at a rate of one percent, while respondents for both web modes accessed help text at a rate of less than one percent. The higher rate of help-text access by telephone interviewers was expected because telephone interviewers were trained to access help text when respondents expressed uncertainty about an answer. Form-level rate of help text access was also

[29] Overall help-text access rates were calculated by dividing the number of times that respondents (or interviewers) accessed help text by the number of times that questions were administered. Form-level help text access rates were calculated by dividing the number of times that respondents (or interviewers) accessed help text on a form by the number of times that form was administered. Only forms administered to 25 respondents or more were included in the help text analysis.

analyzed by mode of survey administration to identify specific forms that may have been problematic for users.

Table 38 shows the eight survey forms administered to at least 25 respondents for which help text was accessed at a rate of 2 percent or greater, by mode of administration.

Academic activities prior to earning bachelor's degree (BB17BINTERN) had the highest rate of help text access at 17 percent. The B&B:16/17 field test and cognitive interviews identified the four response options for this question, unpaid and paid internships, co-operative experiences, and practicums, as less familiar terms to some respondents. Consequently, all response options on the form were hyperlinked to the help text for easier access to definitions of the terms. Thus, both respondent's unfamiliarity with some of the response options and the hyperlinked definitions may have contributed to the higher help text access rate. Telephone interviewers accessed help text on this form at a significantly higher rate (27 percent) than both web nonmobile (19 percent) ($p < .001$) and web mobile (9 percent) ($p < .001$) respondents, while web nonmobile respondents accessed help text at a significantly higher rate than web mobile respondents ($p < .001$).

Table 38. Forms with more than 2 percent help text access rates, by mode of administration: 2017

		Overall		Mode of administration					
				Web nonmobile		Web mobile		Telephone	
Form	Form label	Number administered to	Percent of help text access	Number administered to	Percent of help text access	Number administered to	Percent of help text access	Number administered to	Percent of help text access
BB17BINTERN	Academic activities prior to earning bachelor's degree	15,110	16.6	9,780	18.8	4,270	9.3	1,060	26.7
BB17ETCHGRT	Aware of TEACH Grant Program	15,460	7.0	10,080	8.9	4,320	3.4	1,060	2.7
BB17IUGLNTYP	Type of undergraduate loans	9,170	6.3	5,610	8.0	2,830	2.0	740	10.3
BB17IPVNOPAY	Reason for not repaying private loans as of June 2017	870	6.1	530	4.2	250	7.5	80	14.3
BB17ELNFRGV	Aware of teacher loan forgiveness programs	15,460	5.2	10,080	6.5	4,330	2.8	1,060	2.4
BB17AFINCON	Shares financial responsibilities with household adult	9,180	4.3	6,040	5.3	2,570	2.2	570	3.2
BB17EFTCHIND	First preK–12 job: participated in teacher induction/mentor program	1,030	3.9	650	4.3	320	3.4	60	1.8
BB17DNUMEMP	Number of employers between bachelor's degree and June 2017	14,230	3.2	9,280	3.6	3,980	2.7	970	2.3

NOTE: PreK = prekindergarten. TEACH = Teacher Education Assistance for College and Higher Education. Table only includes those items that were administered to at least 25 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.4.3 Conversion Text

To minimize item-level nonresponse (see section 3.4.4 for item-level nonresponse) in the full-scale survey, the survey used "conversion text" to encourage reluctant respondents to provide a response to critical questions. When response options to a critical question were left missing, and the "Next" navigation button on the form was selected to move forward, additional text (i.e., conversion text) displayed on screen in web modes and was read to the respondent during telephone interviews. For some questions, a "Don't know" response option appeared in addition to conversion text. This additional text emphasized the importance of the question on the form and encouraged respondents to provide an answer. However, if the respondent chose not to respond to the question even after conversion text was displayed or read, there was no additional prompting. Conversion text was included on a subset of 17 forms with critical questions.

To determine overall rates at which conversion text was triggered, the total number of instances in which conversion text was triggered was divided by the number of instances in which the form was administered. Overall, conversion text was triggered in less than 1 percent of the instances in which a form with a critical question was administered. The success rate of a conversion text was calculated as the total number of valid responses on a form (including "don't know", when applicable), divided by the total number of instances in which conversion text was triggered. On average, conversion text led to a valid response 79 percent of the time. Web nonmobile surveys accounted for 57 percent of the total instances in which conversion text was triggered, and 60 percent of the total converted instances. Web mobile surveys accounted for 28 percent of the total instances in which conversion text was triggered, and 31 percent of total converted instances. Telephone interviews made up the remaining 15 percent of the total instances in which conversion text was triggered, and 9 percent of total converted instances.

Table 39 shows rates at which conversion text was triggered, and conversion rates, overall and by mode of administration, for the 14 forms in the survey with critical questions that did not display a "Don't know" option once conversion text was triggered. Of these 14 forms, successful conversion rates ranged from 50 percent to 100 percent, with eight forms resulting in a conversion rate higher than 80 percent. The remaining six forms with conversion rates lower than 80 percent asked respondents to provide the following information: *current marital status,* (BB17AMARR)*, postbaccalaureate degree or certificate type* (BB17CDEG01), *employer 1, job 1: starting salary* (BB17DEMPSS01), *employer 1, job 1: average hours worked per week when started at job* (BB17DEMPHS01), *citizenship status* (BB17FCITZN), and *number of*

dependent children (BB17FDEP2). Two of these forms with critical questions had conversion text that was triggered more than 200 times: *employer 1: months employed July 2015 – June 2017* (BB17DWKMON01), *employer 1, job 1: starting salary* (BB17DEMPSS01).

Significance tests were conducted to determine differences in conversion rates between modes of administration for each of the forms with critical questions. Of the two forms with adequate cell sizes for comparison that did not display a "Don't know" option once conversion text was triggered, conversion rates differed significantly only for *employer 1, job1: starting salary (*BB17DEMPSS01). Specifically, BB17DEMPSS01 had a significantly lower conversion rate in telephone interview mode than in both web nonmobile ($p < .0001$) and web mobile ($p < .0001$) modes of administration.

Table 39. Conversion rates for forms with critical questions, by mode of administration: 2017

		Total			Web nonmobile			Web mobile			Telephone		
Form	Form description	Number administered to	Percent triggered[1]	Percent converted[2]	Number administered to	Percent triggered[1]	Percent converted[2]	Number administered to	Percent triggered[1]	Percent converted[2]	Number administered to	Percent triggered[1]	Percent converted[2]
BB17AAWRDT	Bachelor's degree award date	19,490	0.1	100.0	11,940	0.1	100.0	5,480	0.1	100.0	2,070	0.1	100.0
BB17AWHEN	Bachelor's degree completion date	1,290	0.2	100.0	690	0.1	100.0	320	0.6	100.0	280	†	†
BB17AMARR	Current marital status	15,710	0.1	71.0	10,190	0.1	73.0	4,410	0.1	67.0	1,110	†	†
BB17ANPSCH	Completed bachelor's degree at NPSAS	19,490	0.1	100.0	11,940	0.2	100.0	5,480	0.1	100.0	2,070	0.2	100.0
BB17CPSTGRD	Attended degree/certificate program since completing bachelor's degree	15,710	0.3	92.0	10,190	0.4	90.0	4,410	0.1	100.0	1,110	0.2	100.0
BB17CDEG01	Post-baccalaureate institution 1, degree/ certificate type 1	2,330	0.7	50.0	1,640	0.7	45.0	550	0.4	50.0	140	2.2	67.0
BB17DANYJOBS	Worked for pay between completing bachelor's degree and June 2017	19,490	0.3	92.0	11,940	0.4	91.0	5,480	0.3	100.0	2,070	0.1	67.0
BB17DWKMON01	Employer 1: months employed July 2015–June 2017	16,870	1.7	94.0	10,380	1.8	96.0	4,640	1.7	99.0	1,840	1.8	70.0
BB17DEMPSS01	Employer 1, Job 1: starting salary	16,870	1.9	68.0	10,380	1.6	80.0	4,640	1.2	80.0	1,840	4.9	39.0
BB17DEMPSC01	Employer 1, Job 1: did pay change	16,680	0.7	100.0	10,310	0.6	100.0	4,600	1.2	100.0	1,770	0.2	100.0
BB17DEMPHS01	Employer 1, Job 1: average hours worked per week when started at job	16,870	0.6	75.0	10,380	0.5	39.0	4,640	0.8	31.0	1,840	0.7	38.0
BB17DEMPHC01	Employer 1, Job 1: average hours worked changed	16,730	0.7	100.0	10,330	0.5	100.0	4,590	1.1	100.0	1,810	0.6	100.0
BB17FCITZN	Citizenship status	580	1.0	50.0	410	1.2	60.0	130	0.8	#	40	†	†
BB17FDEP2	Number of dependent children	3,630	0.4	53.0	2,050	0.2	60.0	1,230	0.6	57.0	360	0.8	33.0

† Not applicable.
# Rounds to zero.
[1] Percent triggered is the number of instances in which conversion text was triggered divided by the number of instances in which the form was administered.
[2] Percent converted is the number of instances in which a response was provided after triggering conversion text divided by the number of instances in which conversion text was triggered.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table 40 shows conversion rates for the three forms with critical questions that displayed a "Don't know" option once conversion text was triggered. The conversion rates for these forms ranged from 65 to 71 percent. Each of these forms had significantly lower conversion rates in telephone interview mode than both web modes (*web nonmobile:* BB17FMTGAMT ($p < .0001$), BB17FINEST ($p < .0001$) and BB17FINSRA ($p = .0024$), *web mobile:* BB17FMTGAMT ($p < .0001$), BB17FINEST ($p < .0001$) and BB17FINSRA ($p = .0106$)). The lower conversion rates for telephone mode may be attributed to the presence of a telephone interviewer and the sensitive financial information requested.

Table 40. Conversion rates for forms with critical questions and a hidden "Don't Know" response option, by mode of administration: 2017

		Total				Web nonmobile			
Form	Form description	Number administered to	Percent triggered[1]	Percent converted[2]	Percent converted to a "don't know"[3]	Number administered to	Percent triggered[1]	Percent converted[2]	Percent converted to a "don't know"[3]
BB17FMTGAMT	Current monthly rent or mortgage payment amount	11,250	1.6	68.0	12.0	7,300	1.3	76.0	12.0
BB17FINEST	Respondent income in 2016: estimate	1,610	17.1	71.0	10.0	890	18.6	73.0	11.0
BB17FINSRA	Spouse's or partner's income ranges 2016	500	30.5	65.0	20.0	260	31.3	71.0	20.0

		Web mobile				Telephone			
Form	Form description	Number administered to	Percent triggered[1]	Percent converted[2]	Percent converted to a "don't know"[3]	Number administered to	Percent triggered[1]	Percent converted[2]	Percent converted to a "don't know"[3]
BB17FMTGAMT	Current monthly rent or mortgage payment amount	3,160	1.7	76.0	16.0	800	3.8	30.0	3.0
BB17FINEST	Respondent income in 2016: estimate	520	14.8	79.0	12.0	200	16.2	34.0	#
BB17FINSRA	Spouse's or partner's income ranges 2016	160	23.9	71.0	13.0	80	40.5	41.0	26.0

Rounds to zero.
[1] Percent triggered is the number of instances in which conversion text was triggered divided by the number of instances in which the form was administered.
[2] Percent converted is the number of instances in which a response was provided after triggering conversion text divided by the number of instances in which conversion text was triggered.
[3] Percent converted to a "don't know" is included within the percent converted.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

3.4.4 Item-Level Nonresponse

An item in the survey is a single response option (e.g., check box) or set of response options (e.g., radio button list) that will make a variable in data processing. A form in the survey can include more than one item. The rate of nonresponse for individual items in the survey is used to identify potentially burdensome survey questions and to better understand the experiences of respondents completing the survey. Item-level nonresponse rates in the B&B:16/17 full-scale survey were calculated for all items administered to at least 10 respondents, and all items with a nonresponse rate of 10 percent or more are reported here. Table 41 shows item nonresponse rates for the 11 items with more than 10 percent of data missing, overall and by mode of administration.

Table 41. Item nonresponse for items with more than 10 percent of data missing: 2017

		Overall		Web nonmobile		Web mobile		Telephone	
Item[1]	Item Label	Number administered to	Percent missing	Number administered to	Percent missing	Number administered to	Percent missing	Number administered to	Percent missing
BB17DLEFTMY	Date last employed as a preK–12 teacher	1,330	15.1	840	14.3	330	18.5	130	9.8
BB17FVLAMT	Hours volunteered: time frame	6,110	14.1	4,110	13.7	1,470	16.1	400	9.8
BB17FDEPDATMY6	Date of dependency of child 6	30	10.7	10	16.7	10	9.1	#	#
BB17FOTDEPMY2	Date of dependency of other dependent 2	80	22.5	50	18.4	20	29.2	10	40.0
BB17FOTDEPMY3	Date of dependency of other dependent 3	40	50.0	20	52.9	10	50.0	#	50.0
BB17FOTDEPMY4	Date of dependency of other dependent 4	20	75.0	10	75.0	10	70.0	#	100.0
BB17FOTDEPMY5	Date of dependency of other dependent 5	20	94.7	10	90.0	10	100.0	#	100.0
BB17FOTDEPMY6	Date of dependency of other dependent 6	20	94.7	10	90.0	10	100.0	#	100.0
BB17FOTDEPMY7	Date of dependency of other dependent 7	20	100.0	10	100.0	10	100.0	#	100.0
BB17FINCSP	Spouse's or partner's income in 2016	5,100	16.1	3,260	14.0	1,420	19.5	320	21.7
BB17FINSRA	Spouse's or partner's income ranges 2016	430	12.2	230	9.6	120	8.4	60	26.6

Rounds to zero.
[1] An item in the survey is a single response option (e.g., check box) or set of response options (e.g., radio button list) that will make a variable in data processing. One form in the survey can include more than one item.
NOTE: PreK = prekindergarten. This table only includes those items that were administered to at least 10 respondents. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

The items with the highest overall nonresponse rates were the *Date of dependency of other dependents* (BB17FOTDEPMY2-7) items. Rates of nonresponse ranged from 23 percent to 100 percent and between 20 to 80 respondents were administered each item. However, high percentages of nonresponse on these items are not necessarily due to high burden. All six *Date of dependency of other dependent* items were administered on the same survey form in response to a single question. If respondents indicated "yes" to *Has other dependents*, they were routed to the *Date of dependency of other dependents* form. If they provided at least one date of dependency for an "other dependent" (BB17FOTDEPDATMY1), the *Date of dependency of other dependents* items that did not have a valid response were assigned a "not applicable" reserve code, and thus, are not included in the percent missing. However, if respondents indicated "yes" to *Has other dependents* but did not provide at least one date of dependency for "other dependent," all 7 items (BB17FOTDEPDATMY1-7) were assigned a missing reserve code. This accounts for all missingness in the *Date of dependency of other dependents* items.

Two other items with a nonresponse rate of at least 10 percent asked respondents for information on their spouse's earnings: *Spouse's or partner's income in 2016* (BB17FINCSP) and *Spouse or partner's income ranges 2016* (BB17FINSRA). Sixteen percent of the 5,100 respondents administered the first item and 12 percent of the 430 administered the second item did not provide a response. Lower response rates for these items are likely due to spouses simply being less familiar with their spouse's financial earnings compared to their own, and potential hesitation to provide personal information about another person.

The remaining items with 10 percent or more nonresponse all asked for either dates or a time frame. *Date last employed as a preK through 12th grade teacher* (BB17DLEFTMY) was administered to 1,330 respondents, with 15 percent not responding. *Hours volunteered: time frame* (B17FVLAMT) was administered to 6,110 respondents, with a 14 percent nonresponse rate. *Date of dependency of child 6* (BB17FDEPDATMY6) had a nonresponse rate of 11 percent but was only administered to 30 respondents. Recalling dates and time frames may place a greater cognitive demand on some respondents.

Item-level nonresponse rates were also examined by mode of administration for the 11 survey items with 10 percent or more missing data. Item-level nonresponse rates did not differ in terms of statistical significance across modes for *Date of dependency of other dependents 2-7* (BB17FOTDEPMY2-7), *Date of dependency for child 6* (BB17FDEPDATMY6), or *Date last employed as a preK through 12th grade teacher* (BB17DLEFTMY). Higher rates of nonresponse were observed in web mobile mode (16 percent) than in telephone mode (10 percent) ($p < .01$) for *Hours volunteered: time*

frame (BB17FVLAMT). Lower rates of nonresponse were observed in web nonmobile mode (14 percent) than in both telephone mode (22 percent) ($p < .001$) and web mobile mode (19 percent) ($p < .00001$) for *Spouse or partner's income in 2016* (BB17FINCSP). Higher rates of nonresponse were observed in telephone mode (28 percent) than in web nonmobile mode (10 percent) ($p < .001$) and web mobile mode (8 percent) ($p < .001$) for *Spouse or partner's income ranges 2016* (BB17FINSRA).

Chapter 4. Administrative Records Matching

In addition to the student survey, sample member data for B&B:16/17 came from administrative databases, including two databases from the U.S. Department of Education's Federal Student Aid (FSA) Office: CPS and NSLDS. Other data sources included the NSC and VBA. These additional data sources were useful in supplementing student survey data and reducing student burden. This chapter provides details on the processes used to match these administrative data and the outcomes.

4.1 Administrative Records Matching Processes and Outcomes

4.1.1 Central Processing System (CPS)

Federal financial aid data were obtained from CPS. As part of the process of applying for federal student financial aid, students enter information about themselves and their family into the FAFSA form. CPS then processes the FAFSA information and provides it to postsecondary institutions as part of the process for determining student eligibility for federal financial aid.

CPS data were collected for the B&B:16/17 sample for the 2016–17 and 2017-18 financial aid years. CPS ID—the student's SSN concatenated with the first two letters of the sample member's last name—was used to match B&B:16/17 and CPS records. Any SSNs that had been obtained since the previous match were included in later matches. Data were transmitted to FSA using their Secure Sockets Layer (SSL) encrypted website, and from FSA to project staff using EdConnect, a software program provided by the Department of Education to securely transmit data.

Table 42 summarizes the results of student data matching for the 2016–17 and 2017–18 financial aid years with the total sample records sent, records not sent, records matched, and records not matched by year. The match rates for the first two academic years after bachelor's award, 2016–17 and 2017–18, were 20 percent and 16 percent, respectively. Fellowship and assistantship amounts, which are usually not need-based and do not require the completion of federal financial aid forms, were not included in CPS data.

Table 42. Results of Central Processing System (CPS) matching, by academic year: 2016-18

		Sent to CPS[1]		Matched to CPS	
Academic year	Total	Number	Percent	Number	Percent
2016–17	28,800	27,810	96.6	5,460	19.6
2017–18	28,800	27,830	96.7	4,540	16.3

[1] Sample members without available social security numbers were not sent to CPS.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

4.1.2 National Student Loan Data System (NSLDS)

Project staff obtained student-level data on Pell Grants and federal student loans by matching sample members to the NSLDS database. In a cooperative effort, project staff and the U.S. Department of Education conducted a match between B&B:16/17 records and NSLDS once during the data collection period. As with CPS, sample members missing SSNs were not part of the match. A B&B:16/17 sample member had to have at least one valid grant or loan record in the NSLDS database for a successful match. The NSLDS Pell Grant and loan files included information on the year of interest and a complete Pell Grant and loan history for each student. All NSLDS data transfers used a password-protected NCES system, transmitting over an encrypted SSL connection.

NSLDS matching only returned records of sample members who, at some point in time during their postsecondary education enrollment, had received Pell Grant or federal student loan funding. The NSLDS match yielded loan matches for 20,650 sample members, 74 percent of sample members. The match yielded Pell Grant matches for 16,200 sample members, or 58 percent of sample members. Table 43 shows the overall NSLDS match rates for sample members.

Table 43. Results of National Student Loan Data System (NSLDS) matching, by federal student loan and Pell Grant matching: 2017

Federal student loan and Pell Grant matching	Number	Percent
Total sample	**28,800**	**100.0**
Sent to NSLDS	27,840	96.7
Not sent to NSLDS[1]	950	3.3
Loan		
Matched	20,650	74.2
Did not match	7,190	25.8
Pell Grant		
Matched	16,200	58.2
Did not match	11,650	41.8

[1] Sample members without available social security numbers were not sent to NSLDS.
NOTE: A match indicates that a student had at least one loan or Pell Grant, though not necessarily during the 2016–17 academic year. Matching was completed on historical files that include awards made in 2017–18 and prior years. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

4.1.3 National Student Clearinghouse (NSC)

Enrollment and attainment data were obtained for the sample from the NSC StudentTracker service. This administrative record match provided information on institutions attended, enrollment dates, and degree completions. An individual student record would match with NSC only if the student's institution was an NSC participant.[30] StudentTracker data were requested towards the end of data collection to ensure availability of the most up-to-date personally identifying data. All files were encrypted and transmitted over encrypted Secure File Transfer Protocol connections. Personally identifying data used for the match included sample member name, SSN, and DOB.

NSC matching used enrollment and degree records for all academic years through 2016–17. NSC matches for sample members included the institution in which they were sampled for NPSAS and any other participating institutions they had attended as of the 2016–17 academic year. Of the total sample members, 27,570 (96 percent) matched to NSC (table 44). Reasons for a nonmatch include unavailable personally identifying data and school nonparticipation.

[30] For more information on NSC participation, visit www.studentclearinghouse.org.

Table 44. Results of National Student Clearinghouse (NSC) matching: 2017

NSC matching results	Number	Percent
Total sample	**28,800**	**100.0**
Matched	27,570	95.8
Did Not Match	1,220	4.2

NOTE: All sampled cases were provided for the match. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

4.1.4 Veterans Benefits Administration (VBA)

A file match with VBA was performed to identify veterans, amounts of federal veterans education benefits, and any associated enrollment information. During data collection, project staff provided a file containing SSN, name, and DOB to the VBA for data matching. The match used SSN as the primary identifier, with the other information used to identify the proper person in rare cases of multiple matches. As with NSLDS file matching, all data transmission used an NCES secure file transfer system.

Veterans education benefits information was obtained for 3,120 (11 percent) of the sample members (table 45).

Table 45. Results of Veterans Benefits Administration (VBA) matching: 2017

VBA matching results	Number	Percent
Total sample	**28,800**	**100.0**
Matched	3,120	10.8
Did Not Match	25,680	89.2

NOTE: All sampled cases were provided for the match. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

4.2 Administrative Records Matching Quality Control

Upon receiving the administrative data, several checks were performed to verify the quality of the data. File layouts and code to read in the files were compared to ensure the code was current and accurate; file completeness was also checked. For example, with NSLDS, the file received had to have a header and a footer, otherwise, the file and data were incomplete. If a source provided the personally-identifying information from their database, names and dates of births were compared to what was in the study database to make sure the data were for the correct person. If the names and dates of birth did not match, the case was excluded from the administrative file. Project staff examined individual data files by running basic

summary statistics such as number of records and value ranges (e.g., dates and amounts) to check for potential outliers or abnormalities. Then, the files were checked to confirm they were related to one another as expected. For example, student veterans who received veterans education benefit payments were expected to have at least one military service record. Project staff followed up with providers for corrections or clarifications for any disagreement.

Chapter 5. Data File Processing and Preparation

B&B:16/17 student-level data were compiled from surveys and matched to government and administrative databases. These files are fully documented and available to researchers as a set of restricted-use, and micro-level data files. The public can generate tables of estimates and simple regressions based upon restricted-use data via PowerStats and other publicly facing web tools available on the NCES DataLab website, https://nces.ed.gov/datalab/. This chapter provides detail on the contents of the restricted-use B&B:16/17 files, post-data collection editing of the survey data files, and creation of derived variables.

5.1 Overview of the B&B:16/17 Study Files

Complete data for B&B:16/17 are contained in restricted-use files and documented in detail in the associated codebooks. The restricted-use files listed in table 46 are available to researchers who have applied for and received authorization from NCES to access those files. In table 46, the Restricted-use file column lists all data files included on the RUF. The Description column details the information included in each file and the File path column describes where the file is located on the RUF. Researchers may obtain authorization by contacting the Institute of Education Sciences (IES) Data Security Office.[31]

The primary analysis file (i.e., derived file) for B&B:16/17 contains data for 19,490 respondents and more than 520 variables from several data sources: student survey, CPS, NSLDS, and NPSAS:16 base year data. Project staff also used NSC and VBA data to create derived variables, however the NSC and VBA data are not available as restricted-use data files.

[31] More information on obtaining restricted-use data files is available at https://nces.ed.gov/statprog/rudman/.

Table 46. B&B:16/17 restricted-use files, description, and file path: 2018

Restricted-use file	Description	File path
B&B:16/17 analysis (derived)	Contains analytic variables derived from all B&B:16/17 data sources for the 19,490 respondents.	/data/derived/ b17derived_datafile.csv
B&B:16/17 student interview data	Contains data collected from the student interviews of the 19,490 respondents.	/data/source/b17interview/ b17interview_datafile.csv
NPSAS:16 and B&B:16/17 analysis (derived)	Contains the base-year data included in the NPSAS:16 data file collected for the B&B:16/17 respondents from the student interview. There is a separate record for each B&B:16/17 interview respondent. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.	/data/source/b17n16derived/ b17n16derived_datafile.csv
NPSAS:16 and B&B:16/17 student interview data	Contains the base-year data included in the NPSAS:16 data file collected for the B&B:16/17 respondents from the student interview. There is a separate record for each B&B:16/17 interview respondent. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.	/data/source/b17n16interview/ b17n16interview_datafile.csv
NPSAS:16 Student Base	Contains the base-year data included in the NPSAS:16 data file collected for the B&B:16/17 respondents from institutional records and from student interviews. There is a separate record for each B&B:16/17 interview respondent. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.	/data/source/b17n16studrecs/ b17n16studrecs_datafile.csv
NPSAS:16 institution data	Contains institution-level data for the B&B:16/17 sample members' NPSAS institution collected during 2015–16. There are 1,180 institutions represented. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.	/data/source/b17n16institution/ b17n16institution_datafile.csv
CCD 14/15	Contains Common Core of Data (CCD) records from the 2014–15 academic year for schools whose NCES School ID's were reported by respondents as schools in which they worked. There is a separate record for each school.	/data/source/b17ccd1415/ b17ccd1415_datafile.csv
CCD 15/16	Contains CCD records from the 2015–16 academic year for schools whose NCES School ID's were reported by respondents as schools in which they worked. There is a separate record for each school.	/data/source/b17ccd1516/ b17ccd1516_datafile.csv
CPS 2016–17 data	Contains data received from CPS for the 5,460 respondents who matched to the 2016–17 financial aid application files.	/data/source/b17cps17/ b17cps17_datafile.csv
CPS 2017–18 data	Contains data received from CPS for the 4,540 respondents who matched to the 2017–18 financial aid application files.	/data/source/b17cps18/ b17cps18_datafile.csv
Imputation flag	Contains imputation flags for any B&B:16/17 derived variables that were imputed or based on imputed data for the 19,490 respondents. This file includes one record per respondent.	/data/source/b17flag/ b17flag_datafile.csv
PSS 13/14	Contains PSS records from the 2013–14 academic year for schools whose permanent identification numbers (PIN) were reported by respondents as schools in which they worked. There is a separate record for each school.	/data/source/b17pss1314/ b17pss1314_datafile.csv
PSS 15/16	Contains PSS records from the 2015–16 academic year for schools whose PIN were reported by respondents as schools in which they worked. There is a separate record for each school.	/data/source/b17pss1516/ b17pss1516_datafile.csv

See notes at end of table.

Table 46. B&B:16/17 restricted-use files, description, and file path: 2018—Continued

Restricted-use file	Description	File path
NSLDS loan	Contains loan-level data received from NSLDS for approximately 14,570 matched respondents who borrowed federal loans as of early 2018. This file includes one record for each federal loan borrowed by these respondents and provides the most recent information for that loan.	/data/source/b17nsldsloan/ b17nsldsloan_datafile.csv
NSLDS loan disbursement	Contains loan-disbursement level data from NSLDS for approximately 14,550 matched respondents who borrowed federal loans as of early 2018. This file includes one record for each disbursement made on a federal loan to respondents.	/data/source/b17nsldsloandis/ b17nsldloandis_datafile.csv
NSLDS loan delinquency	Contains loan-level delinquency data received from NSLDS for respondents who were ever delinquent on a federal loan as of early 2018. This is a history file with separate records for each instance of delinquency per loan.	/data/source/b17nsldsdelinq/ b17nsldsdelinq_datafile.csv
NSLDS loan deferment	Contains loan-level deferment data received from NSLDS for respondents who ever obtained a deferment for a federal loan as of early 2018. This is a history file with separate records for each instance of deferment per loan.	/data/source/b17nsldsdefer/ b17nsldsdefer_datafile.csv
NSLDS loan enrollment	Contains student-school-program-level enrollment information from NSLDS for 12,020 respondents. These data are incomplete in the first 3 years of the study, but are more reliable from the 2015 through 2017 academic years. This file includes one record for each program and enrollment status change for a student as reported to NSLDS.	/data/source/b17nsldsenroll/ b17nsldsenroll_datafile.csv
NSLDS loan forbearance	Contains loan-level forbearance data received from NSLDS for respondents who ever obtained a forbearance for a federal loan as of early 2018. This is a history file with separate records for each instance of forbearance per loan.	/data/source/b17nsldsforbear/ b17nsldsforbear_datafile.csv
NSLDS Stafford loan default	Contains loan-level default occurrences derived from NSLDS for all respondents with federal Stafford loans that were ever in default as of early 2018. This is a history file with a separate record for each default occurrence per loan.	/data/source/b17nsldsstaffdef/ b17nsldsstaffdef_datafile.csv
NSLDS non-Stafford loan default	Contains loan-level default occurrences derived from NSLDS for all respondents with federal non-Stafford (Perkins) loans that were ever in default as of early 2018. This is a history file with a separate record for each default occurrence per loan.	/data/source/b17nsldsnonstaffdef/ b17nsldsnonstaffdef_datafile.csv
NSLDS outstanding interest balance	Contains loan-level outstanding interest balance data received from NSLDS for respondents who received federal loans as of early 2018. This is a history file with separate records for each interest update per loan.	/data/source/b17nsldsoib/ b17nsldsoib_datafile.csv
NSLDS outstanding principal balance	Contains loan-level outstanding principal balance data received from NSLDS for respondents who received federal loans as of early 2018. This is a history file with separate records for each balance update per loan.	/data/source/b17nsldsopb/ b17nsldsopb_datafile.csv
NSLDS loan repayment history	Contains loan-level repayment data received from NSLDS for respondents who entered repayment and made any payments on their federal loans as of early 2018. This is a history file with separate records for each payment made on a loan.	/data/source/b17nsldsrpmthis/ b17nsldsrpmthis_datafile.csv
NSLDS loan repayment plan	Contains loan-level repayment plan information received from NSLDS for respondents who entered repayment on federal loans as of early 2018. This is a history file with separate records for each change to a loan's repayment.	/data/source/b17nsldsrpmtplan/ b17nsldsrpmtplan_datafile.csv

See notes at end of table.

Table 46. B&B:16/17 restricted-use files, description, and file path: 2018—Continued

Restricted-use file	Description	File path
NSLDS loan to IDR application data	Contains loan-application-level repayment plan data, where each observation represents a successful enrollment, recertification, or re-calculation on an IDR plan resulting from the IDR application identification number linked to the observation.	/data/source/b17nsldsloanidrappl/ b17nsldsloanidrappl_datafile.csv
NSLDS IDR plan application data	Contains student-application-level data received from NSLDS for respondents who applied for any federal income-driven repayment plans for federal loans as of early 2018. Each observation represents an IDR plan application.	/data/source/b17nsldsidrappl/ b17nsldsidrappl_datafile.csv
NSLDS FAFSA history	Contains student award year-level data from FAFSA, stored and obtained from NSLDS, for approximately 16,170 matched study members as of early 2018. This file includes one record for each year in which a respondent filed a FAFSA between the 1995 and 2019 federal award years. Each record includes income, expected family contribution, and select demographic information reported on the application.	/data/source/b17nsldsfafsa/ b17nsldfafsa_datafile.csv
NSLDS award origin	Contains student award year-level data on federal Direct Loans awarded to 14,000 study members as of early 2018. This file includes one record for each student and year during which the student was awarded a federal Direct Loan between 2012 and 2018. The file is an aggregation of loan-level data reported by institutions to the U.S. Department of Education's Common Origination and Disbursement (COD) system and provides information on loan amount eligibility and the academic year periods associated with loans disbursed during the award year.	/data/source/b17nsldsaward/ b17nsldsaward_datafile.csv
B&B:16/17 weights	Contains the final B&B:16/17 weight and variance estimation variables as a separate record for each study member.	/data/source/b17weights/ b17weights_datafile.csv
B&B:16/17 weights history	Contains the intermediate weight adjustment factors as well as the final student weights and the variance estimation variables as a separate record for each study member.	/data/source/b17weighthy/ b17weighth_datafile.csv

NOTES: NPSAS = National Postsecondary Student Aid Study. NCES = National Center for Education Statistics. CPS = Central Processing System. NSLDS = National Student Loan Data System. IDR = Income-Driven Repayment. FAFSA = Free Application for Federal Student Aid.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

5.2 Post-Data Collection Editing

During data collection, project staff performed quality control checks on all information collected from the survey to ensure the quality and accuracy of data. For example, all missing data from the survey were examined to assign specific values that indicated why data were missing (table 47). Skip-pattern relationships in the survey data were examined by methodically cross-tabulating gate items, such as whether the respondent was employed in a specific year, with their associated nested items, such as specific follow-up questions about the employer. In many instances, gate-nest relationships spanned multiple levels within the instrument. Items nested within a gate question may have been gate items for additional items. Consequently, the validation of complex series of gate-nest relationships often required several

iterations and a series of multiway cross-tabulations that ensured the final data adhered to the item routing that respondents experienced when they navigated the survey.

Table 47. Missing data codes and descriptions: 2017–18

Missing data code	Description
–3	Item does not apply to the respondent
−4	Gate was left blank; we cannot determine if nested items apply
–5	Item left blank by respondent, but a response was provided for other items in the group; when all grouped items with a response are positive, a '0' or 'no' are implied for blank items
–7	Item not included in the abbreviated survey; respondent did not have an opportunity to provide an answer
–8	Item is missing data due to an instrument error
−9	Respondent saw item; did not provide an answer

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

During data editing, staff documented question wording, response options, logical recoding, and which respondents should have nonmissing data (i.e., "applies to" text) for each delivered variable from the survey data collection (see facsimile of the full-scale instrument in appendix E). Cleaning and editing of the B&B:16/17 data files was a multistage process that consisted of the following:

1. **Blank values.** As a first step, all blank values in the survey data files were replaced with the appropriate initial -9 data code. Then, one-way frequency distributions of every variable were reviewed to confirm that no missing or blank values remained. Labels of expected values were assigned to assist in the identification of anomalous categorical frequencies. Anomalous data patterns were investigated and corrected as necessary.
2. **Consistency codes.** Survey source code written by instrument programmers and survey logic documented in flowcharts were used to identify legitimate skips in the survey data. Staff defined gate-nest question relationships and examined data for adherence to logic established in the survey design. When an item was skipped in the survey, the -9 value of *data missing, response not provided*, was replaced with -3 for *not applicable* or -7 *not included in abbreviated survey*. If the gate was left blank, a -9 value in the nested item was replaced with a -4 *missing—unable to determine applicability*. If a "yes" response was provided on at least one item on a Likert grid form in the group and all other items are missing, the -9 was replaced with a -5 *missing - implied no/implied zero*.

   Staff evaluated cross-tabulations of each gate-nest combination and investigated high numbers of nonreplaced -9 codes to ensure conditional response integrity. If a -9 was found where data were expected, and the result of the investigation revealed an error in instrument routing, the -9 was

replaced with a -8 *missing - due to error*. Nested values were further checked to find instances in which a legitimate skip code overwrote valid response data. This typically occurred if a respondent answered a gate question and the appropriate nested items, but then backed up within the survey to change the value of the gate, leading to an alternate path of nested items. Responses to the first nested items remained in the database, which required further examination and editing. In this scenario, editing would involve removing from the data file the values provided in response to the first nested items prior to backing up. This is done to maintain conditional response integrity throughout the data.

3. **Logical recodes.** Logical recodes of the survey data were performed when the value of missing items could be determined from answers to previous survey questions. If respondents broke off in the survey prior to completion, but previous responses allowed for logical recodes of post-breakoff items, logical recodes were used. During logical recodes, the sequence generated a legitimate response value instead of a -3 *not applicable* value. For example, if a teacher respondent answered "no" to *aware of teacher loan forgiveness programs* (BB17ELNFRGV), then the skipped question, *teacher loan forgiveness programs influential in becoming a teacher* (BB17ELNINCT) could logically be recoded to "no."

4. **Sanitization.** All verbatim text strings collected in the survey were reviewed using a sanitization application within the Symphony data collection system, designed by project staff to enable the systematic review of data. Text strings were loaded into the sanitization application then reviewed individually by project data experts. Any personally identifiable information, such as employer name or a full address, was "sanitized," or removed from the text string, while maintaining the integrity of the data captured. Only text strings reviewed within the sanitization application were released with final data and are available only in restricted-use files.

5. **Coding**. To ensure respondents were accurately coding their data on coder forms within the survey and to insert a code for any text string left uncoded, the coding application within the Symphony system supported the systematic review and coding of these data. Uncoded verbatim strings were initially processed through an automated function that matched exact text strings to the corresponding code in the database. The remaining uncoded verbatim strings were loaded into the coding application. The application provided expert coding staff with each verbatim text string from the survey, and the ability to search the associated database to which the coder was connected. A predetermined percentage of all coded strings was recoded in the coding

application as a quality control measure (i.e. recoding). In addition, expert staff then assigned codes to as many uncoded text strings as possible (i.e. upcoding). See section 3.4.1 for more information on coder forms and rates of successful coding within the survey. An analysis of recoding and upcoding rates by mode of administration for all cases, including complete and final partial full and abbreviated cases (n = 19,490), are provided in the following sections.

5.2.1 Recoding

Ten percent of major and occupation codes was randomly selected from student survey data for recoding, a process in which expert coding staff reviewed the codes chosen in the survey alongside the original text strings and determined the coder selection that most accurately described the text string provided by the respondent (see section 3.1.2 for more information on coding systems). The recoding process resulted in one of three recoding scenarios: 1) assigned the same code as the original selected in the survey (agreement rate), 2) recoded to a different code than selected in the survey (recode rate), or 3) determined that the original text strings provided by the respondent were too vague to code. Because of the large variability in names of programs of study across institutions and in occupation titles given to the same or similar jobs across employers, this review was conducted for both majors and occupations.

Overall, expert coding staff agreed with 81 percent of the major codes and 72 percent of the occupation codes selected in the survey. Given that respondents had to scroll through a list of returned results on a smaller sized screen during web mobile mode, agreement rates between modes of administration were also compared to assess the impact that modes of administration had on data quality.

Table 48 shows the rate of recodes for the major and occupation coders by mode of administration. Both the major and occupation coders showed significant differences in code agreement rates across modes of administration. Expert coders agreed with major codes selected in web nonmobile mode around 89 percent of the time, whereas they agreed with major codes chosen in web mobile mode 64 percent of the time ($p < .001$). The agreement rate for major codes was also higher in telephone mode (80 percent) than the agreement rate in web mobile mode (64 percent) ($p = .05$). For the occupation coder, there was no significant difference in agreement rates between web nonmobile and web mobile modes. However, expert coders agreed with the occupation codes selected in telephone mode at a significantly higher rate (79 percent) than those selected in either web nonmobile (72 percent) ($p = .003$) or web mobile (71 percent) ($p = .002$) modes. The higher agreement rates in the

telephone mode were attributed to the proficiency that telephone interviewers developed over time with coder use.

Table 48. Percentage of recoding values, by mode of administration and coding system: 2017

	Recoded same as original				Recoded to a different value				Text string too vague to code			
		Mode of administration				Mode of administration				Mode of administration		
Coding system	Total	Web non-mobile	Web mobile	Tele-phone	Total	Web non-mobile	Web mobile	Tele-phone	Total	Web non-mobile	Web mobile	Tele-phone
Major	81.2	88.7	64.3	79.5	16.6	9.3	33.3	18.2	2.2	2.1	2.4	2.3
Occupation	72.3	71.7	71.1	79.3	1.7	1.2	2.9	1.4	26.1	27.1	26.1	19.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Recode rates were significantly lower in web nonmobile mode than in web mobile mode for both the major and the occupation coding systems. Expert coders disagreed with the major codes selected in web nonmobile mode 9 percent of the time, compared to 33 percent of the time in web mobile mode ($p < .001$), and they disagreed with 18 percent of the major codes selected in telephone mode which was significantly less than those selected in web mobile mode (33 percent) ($p < .05$). Expert coders disagreed with the occupation codes selected in web nonmobile mode 1 percent of the time, as opposed to 3 percent of the time in web mobile mode ($p = .001$). While the major coder showed no significant differences by mode in the rates at which text strings were too vague to code, occupation coder text strings were classified as too vague at a significantly lower rate in telephone mode (19 percent) than in either web nonmobile (27 percent)($p = .002$) or web mobile modes (26 percent)($p = .01$).

5.2.2 Upcoding

Upcoding was a process by which expert coding staff attempted to assign a code for any text string that did not have a code selected in the instrument. Text strings from each coding system, except industry, went through the upcoding process. Unlike other coding systems, industry could not be determined with confidence based on the other employer-level information collected.

Overall, three coders had upcode rates of greater than 10 percent, while the remaining three coders had upcode rates of lower than 7 percent. Text strings from the preK–12 school coder were upcoded the most, at 17 percent. Text strings from the major coder were upcoded the least, at 3 percent. Table 49 shows the upcode rates for country of origin, major, occupation, preK–12 school, postsecondary institution, and zip code, overall and by mode of administration.

Table 49. Summary of upcoding rates, by mode of administration and coding system: 2017

Coding system	Overall	Mode of administration		
		Web nonmobile	Web mobile	Telephone
Country of origin	11.2	5.0	27.6	4.3
Major	2.8	1.7	5.1	5.2
Occupation	12.6	11.6	14.5	12.8
PreK–12 school	17.4	15.4	19.3	31.4
Postsecondary institution	4.0	3.0	5.1	8.3
Zip code	6.7	3.9	14.2	2.7

NOTE: PreK = prekindergarten.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

5.3 Composite and Derived Variable Construction

The analytic variables were derived by examining student-level data available from the various data sources, prioritizing data sources specific to each item, and reconciling discrepancies both within and between sources.[32] In some cases, staff created derived or composite variables by assigning the value from the available source with the highest priority based on such factors as data reliability and coverage for a given data element. In other cases, they recoded or combined survey items to create a derived variable (for a listing of the analysis variables derived for B&B:16/17, see appendix H). Further detail on variable derivation is available in PowerStats on the "Get more info" tab for each variable and in the restricted-use file codebooks. For information on how to apply for access to restricted-use data and documentation, go to https://nces.ed.gov/statprog/rudman/.

[32] While most data discrepancies were reduced or eliminated, one discrepancy that remains is between who was found to be a teacher in the teaching section of derived variables, defined by B1TCHOCC, and who worked as a teacher in the employment section of derived variables, defined by B1OCC331ST and B1OCC33RCNT.

Chapter 6. Weighting and Variance Estimation

This chapter provides information about the weighting procedures and variance estimation for B&B:16/17. The use of weights is essential to produce estimates that are representative of the target population of 2015–16 baccalaureate recipients. An analysis weight should be used to produce survey estimates. When testing hypotheses (e.g., conducting *t* tests, regression analyses, etc.) with weighted data from a study with a complex design, such as B&B:16/17, analysts should properly estimate variances using such methods as Taylor series linearization and bootstrap replication. PSU and stratum identifiers are provided in the data file for use with the Taylor series method, with or without the correction for assuming a finite population, and bootstrap replicate weights are provided for use with the bootstrap replication procedure.

The development of statistical analysis weights for the B&B:16/17 sample is discussed in section 6.1. Section 6.2 discusses the accuracy of B&B:16/17 estimates and the potential for nonresponse bias. Analysis procedures that can be used to produce unbiased estimates of sampling variances, including variances computed using Taylor series and bootstrap replication techniques, are discussed in section 6.3. This section also describes how the Taylor series strata, primary sampling unit (PSU) variables, and bootstrap replicate weights were constructed. Also included in this section is a discussion on the design effects which measure the precision of survey estimates. The concluding sections describe the rationale behind and the process of imputing missing data (section 6.4) and the measures taken during data processing to protect respondent confidentiality (section 6.5).

6.1 Analysis Weights

Because the B&B:16/17 sample members are a subset of the NPSAS:16 sample, the weights for analyzing the B&B:16/17 data were derived from the NPSAS:16 weights. Specifically, the NPSAS:16 student design weight for B&B:16/17 sample members was adjusted to account for subsampling and nonresponse and were also calibrated to weighted NPSAS:16 estimates and population estimates from the IPEDS:2015–16

completions file (C2016_a).[33] The resulting analysis weight or cross-sectional weight is the only weight to be used when computing survey estimates that represent the B&B:16/17 target population.

Each weight component described below represents either a probability of selection or a weight adjustment. Using a weighting methodology described by Folsom and Singh (2000), all nonresponse and poststratification adjustments were computed using the procedure WTADJUST in SUDAAN (RTI International 2012). The WTADJUST procedure uses a constrained logistic model to predict response using bounds for adjustment factors and bounds on variance inflation. A key feature and advantage of this procedure is that the weight adjustments and weight trimming and smoothing are all accomplished in one step.

Extremely large or extremely small weights were trimmed by specifying minimum and/or maximum values prior to the poststratification adjustments. In general, these bounds were set equal to the median value of the nonresponse adjusted weight plus or minus 3 times the interquartile range, where the median and interquartile range were defined by control and level of institution. Then upper and lower bounds on the weight adjustment factors calculated by the weight adjustment procedure were set. For the nonresponse adjustments, the lower bound was initially set at 1; for the poststratification adjustment, the lower bound was initially set at 0.01. During model refinement, staff ran the WTADJUST procedure with no 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 unequal weighting effects (UWEs). The final minimum weight adjustment bound for all nonresponse adjustments was 1. For the not located[34] nonresponse adjustment, the final nonresponse adjustment models were unbounded above as the maximum adjustment factors were not found to be extreme, and 10,000 was the upper bound for the other nonresponse[35] adjustment. The poststratification adjustment had a lower bound of 0.2 and an upper bound of 100.

In this way, staff controlled the extreme weights and reduced the design effect due to unequal weighting. The WTADJUST procedure is designed such that the sum of the unadjusted weights for all eligible units equals the sum of the adjusted weights for the respondents. The exact formula for the weight adjustment factors calculated by

[33] IPEDS data files can be downloaded from the online IPEDS data center at https://nces.ed.gov/ipeds/use-the-data.
[34] Nonresponse due to the inability to contact the sample member during data collection.
[35] Sample member was located but not surveyed before the end of the data collection period.

the SUDAAN WTADJUST procedure can be found in the SUDAAN User's Manual (RTI International 2012).

6.1.1 Base Weight for B&B:16/17

As mentioned above, the B&B:16/17 weights are derived from the NPSAS:16 weights. *The 2015–16 National Postsecondary Student Aid Study (NPAS:16) Data File Documentation* (Wine, Siegel, and Stollberg 2018) describes the development of the NPSAS:16 weights. The weight components from NSPAS:16 compensated for the unequal probability of selection of institutions and students in the NPSAS:16 sample. The first seven weight components used to derive the B&B:16/17 base weight were as follows:

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

Of the 9,810 students in the NPSAS:16 sample, who did not respond to the NPSAS:16 student survey but were identified as potential baccalaureate recipients from the institution enrollment lists and were classified as NPSAS:16 study members, 4,910 were subsampled for inclusion in the B&B:16/17 sample as described in section 2.3. This resulted in an additional adjustment (BB17WT1) to account for subsampling of students for inclusion in B&B:16/17.

The B&B:16/17 base weight was formed as the product of each of these adjustment factors. Specifically, for each student, the B&B:16/17 base weight was computed as

B&B:16/17 base weight = WT1 × WT2 × WT3 × WT4 × WT5 × WT6 × WT7 × BB17WT1

6.1.2 Nonresponse Adjustments (BB17AWT1 and BB17AWT2)

The next adjustments were for survey nonresponse. The distribution of sample characteristics for not located, refusals and other nonrespondents was reviewed to determine if a three-stage nonresponse was warranted to better reduce nonresponse bias. There was a difference between B&B:16/17 sample members who could not be located

and other nonrespondents, including sample members who refused. Because the predictors of response propensity were potentially different for each of these nonresponse outcomes, B&B:16/17 staff adjusted the base weight for nonresponse in two stages—first, inability to locate the sample member, then other nonresponse including refusals. The not located nonresponse adjustment model included the 26,510 students who were eligible and were not deceased and the other nonresponse adjustment model included the 24,130 students who were eligible, located, and were not deceased.

Student not located adjustments (BB17AWT1). The first type of adjustment for nonresponse was an adjustment for the inability to contact the sample member during data collection ("not located"). Independent model variables were those that: (1) were considered to be predictive of response status, (2) were nonmissing for both survey respondents and nonrespondents, and (3) included variables from the NPSAS:16 nonresponse adjustment models. Variables in the nonresponse modeling included all of the following predictor variables, as well as certain important interaction terms:

- control and level of institution attended (categorical – from NPSAS:16);
- region of institution attended (categorical – from NPSAS:16);
- institution total enrollment from IPEDS 2015–16 file (categorical – from NPSAS:16);
- age group (categorical – from NPSAS:16);
- veteran status (yes/no – from NPSAS:16);
- race/ethnicity (categorical – from NPSAS:16);
- sex (two levels – from NPSAS:16);
- SSN obtained from enrollment list (yes/no – from NPSAS:16)
- Pell Grant amount (categorical – from NPSAS:16);
- Direct Loan amount (categorical – from NPSAS:16);
- PLUS amount (categorical – from NPSAS:16);
- federal aid receipt (yes/no – from NPSAS:16);
- institution aid receipt (yes/no – from NPSAS:16);
- state aid receipt (yes/no – from NPSAS:16);
- degree major (categorical – from NPSAS:16);

- ratio of amount owed to amount borrowed in federal loans (categorical – through January 2018, from B&B:16/17);
- cumulative Direct Loan amount (categorical – through January 2018, from B&B:16/17); and
- type of federal loan repayment plan (categorical – through January 2018, from B&B:16/17).

To detect important interactions for each of the nonresponse models, the chi-square automatic interaction detection (CHAID) analysis was performed on the predictor variables (Kass 1980). CHAID is a hierarchical clustering algorithm that successively partitions individuals according to categorical predictors for a categorical dependent variable. The algorithm begins with all study individuals as a whole and cycles over each predictor, finding for each predictor an optimal partition of the individuals according to its levels. Staff retained the most significant optimal partition and applied the CHAID algorithm to the members of that partition to find further partitions using the remaining predictors. The algorithm was stopped after a specified number of partitioning steps or if the algorithm failed to find statistical significance among any of the partitions at a given step.

The CHAID analysis divided the data into segments that differed with respect to the response variables (located and other nonresponse). CHAID was run for up to three segments, resulting in the identification of two-way and three-way interactions. The interaction terms (CHAID segments) identified were treated as additional candidate predictor variables. Candidate predictor variables that impeded the creation of a convergent model were dropped from the final model.

The weight adjustments were computed using SUDAAN's WTADJUST procedure as described in section 6.1.

Table 50 shows the final predictor variables used in the model to determine weight adjustments and the average weight adjustment factors resulting from these variables. The not located nonresponse weight adjustment factors have the following characteristics:

- minimum: 1.00;
- median: 1.04; and
- maximum: 5.31.

The final lower bound was 1.0 and the final upper bound was unbounded to achieve convergence for this weight adjustment.

Table 50. Weight adjustment factors for not located adjustment: 2017

Model predictor variables and interactions	Number located	Weighted response rate	Average weight adjustment factor (BB17AWT1)
Total	**24,130**	**90.9**	**1.09**
Control and level of institution attended			
Public 2-year and public 4-year, non-doctorate-granting, primarily subbaccalaureate	1,060	84.5	1.13
Public 4-year, non-doctorate-granting, primarily baccalaureate	1,740	90.6	1.10
Public 4-year, doctorate-granting	6,980	90.6	1.10
Private nonprofit, less-than-4-year or private nonprofit, 4-year, non-doctorate-granting	3,400	93.5	1.06
Private nonprofit, 4-year, doctorate-granting	3,980	91.4	1.08
Private for-profit, less-than-2-year or private for-profit, 2-year or private for-profit, 4-year	6,990	89.4	1.10
Region of institution attended[1]			
New England	1,230	89.3	1.11
Mideast	4,180	90.1	1.10
Great Lakes	3,760	91.7	1.08
Plains	1,900	92.2	1.07
Southeast or outlying areas	5,920	92.2	1.08
Southwest	2,750	90.8	1.09
Rocky Mountains	1,220	95.4	1.04
Far West	3,180	87.8	1.15
Institution total enrollment[2]			
1–2,907	6,200	92.0	1.09
2,908–10,133	6,000	92.2	1.08
10,134–27,396	5,980	90.6	1.10
27,397 or more	5,960	90.1	1.10
Veteran status			
Yes	1,990	91.2	1.09
No	22,150	90.9	1.09
Race/ethnicity			
White, non-Hispanic or Unknown	15,170	91.0	1.09
Black, non-Hispanic	3,020	93.1	1.06
Hispanic	3,340	92.4	1.09
Asian, non-Hispanic	1,610	83.9	1.19
American Indian or Alaskan Native, non-Hispanic	130	90.6	1.12
Native Hawaiian or other Pacific Islander, non-Hispanic	80	99.3	1.01
More than one race, non-Hispanic	790	93.4	1.07
Sex			
Male	9,850	89.9	1.10
Female	14,290	91.8	1.09
Pell Grant amount[3]			
Did not receive	15,020	89.6	1.12
$1–$2,887	3,170	95.9	1.05
$2,888–$5,774	3,270	95.5	1.05
$5,775	1,970	95.3	1.05

See notes at end of table.

Table 50. Weight adjustment factors for not located adjustment: 2017—Continued

Model predictor variables and interactions	Number located	Weighted response rate	Average weight adjustment factor (BB17AWT1)
Direct Loan amount[2]			
Did not receive	12,670	87.2	1.14
$1–$4,180	2,870	96.7	1.03
$4,181–$7,500	5,530	96.1	1.04
$7,501–$8,307	220	93.0	1.08
$8,308 or more	2,840	94.3	1.06
PLUS Loan amount[2]			
Did not receive	22,060	91.1	1.09
$1–$7,044	340	97.0	1.03
$7,045–$12,751	340	94.9	1.05
$12,752 or more	680	97.1	1.03
Federal aid status			
Received	15,380	95.5	1.05
Did not receive	7,670	86.9	1.14
Unknown	1,090	75.3	1.37
Institution aid status			
Received	10,460	94.7	1.05
Did not receive	11,320	89.7	1.11
Unknown	2,360	83.7	1.20
State aid status			
Received	4,230	95.3	1.04
Did not receive	17,440	90.9	1.09
Unknown	2,460	83.6	1.20
Student major			
Degree major			
Humanities	2,670	91.7	1.09
Social/Behavioral sciences	2,370	93.1	1.07
Life sciences/Physical sciences/Math	2,910	93.0	1.07
Computer/Information sciences	1,760	90.0	1.10
Engineering	1,460	91.1	1.09
Education	2,350	94.9	1.05
Business/Management	3,000	88.7	1.11
Health	3,620	92.9	1.11
Vocational/Technical	140	93.7	1.07
Other technical/professional or Undecided	2,980	91.2	1.09
Unknown	130	65.5	1.64
Ratio of amount owed to amount borrowed, federal loans[2]			
0–95 percent	5,850	92.6	1.08
96–102 percent	3,720	95.8	1.05
103–110 percent	3,920	95.7	1.05
111 percent or more	4,020	93.5	1.08
Cumulative Direct Loan amount[2]			
Did not receive	21,500	90.6	1.10
$1–$10,502	650	93.6	1.08
$10,503–$20,500	590	96.9	1.03
$20,501–$28,440	760	95.8	1.04
$28,441 or more	640	88.0	1.13

See notes at end of table.

Table 50. Weight adjustment factors for not located adjustment: 2017—Continued

Model predictor variables and interactions	Number located	Weighted response rate	Average weight adjustment factor (BB17AWT1)
Type of federal loan repayment plan			
Multiple repayment plans	290	98.4	1.02
Other	6,900	94.8	1.05
Income driven repayment	510	93.0	1.08
Graduated repayment	490	96.9	1.03
Standard repayment	430	86.8	1.15
Not repaying	6,940	93.3	1.07
CHAID segments in nonresponse adjustment model			
Aged 15 to 23 as of 12/31/2015, White, non-Hispanic, Black, non-Hispanic, Hispanic, American Indian or Alaskan Native, non-Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or more than one race, non-Hispanic, Received aid	9,710	95.6	1.06
Aged 15 to 23 as of 12/31/2015, White, non-Hispanic, Black, non-Hispanic, Hispanic, American Indian or Alaskan Native, non-Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or more than one race, non-Hispanic, Did not receive aid	1,010	98.3	1.02
Aged 15 to 23 as of 12/31/2015, White, non-Hispanic, Black, non-Hispanic, Hispanic, American Indian or Alaskan Native, non-Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or more than one race, non-Hispanic, Unknown if received aid	1,010	82.1	1.22
Aged 15 to 23 as of 12/31/2015, Asian, non-Hispanic, Did not receive Pell grant	670	84.4	1.17
Aged 15 to 23 as of 12/31/2015, Asian, non-Hispanic, Received a Pell grant amount between $1-$5,774	70	100.0	1.00
Aged 15 to 23 as of 12/31/2015, Asian, non-Hispanic, Received a Pell grant of $5,775	210	89.3	1.10
Aged 15 to 23 as of 12/31/2015, Unknown race/ethnicity	80	55.2	1.81
Aged 24 to 29 as of 12/31/2015, Have SSN from at least 1 source, Received aid	4,130	94.1	1.07
Aged 24 to 29 as of 12/31/2015, Have SSN from at least 1 source, Did not receive aid	450	97.9	1.02
Aged 24 to 29 as of 12/31/2015, Have SSN from at least 1 source, Unknown if received aid	440	75.1	1.36
Aged 24 to 29 as of 12/31/2015, Do not have SSN from at least 1 source	110	42.3	2.57
Aged 30 or more as of 12/31/2015, Received aid, White, non-Hispanic, Black, non-Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or More than one race, non-Hispanic	4,020	95.8	1.04
Aged 30 or more as of 12/31/2015, Received aid, Hispanic, Asian, non-Hispanic, or American Indian or Alaskan Native, non-Hispanic	990	89.3	1.13
Aged 30 or more as of 12/31/2015, Received aid, Unknown race/ethnicity	50	55.7	1.75
Aged 30 or more as of 12/31/2015, Did not receive aid, Attended institution in the New England, Plains, Far West region or outlying areas	120	100.0	1.00
Aged 30 or more as of 12/31/2015, Did not receive aid, Attended institution in the Great Lakes or Southwest region	170	95.5	1.05
Aged 30 or more as of 12/31/2015, Did not receive aid, Attended institution in the Mideast, Southeast, or Rocky Mountains region	270	99.0	1.01
Aged 30 or more as of 12/31/2015, Unknown if received aid, White, non-Hispanic or Native Hawaiian or other Pacific Islander, non-Hispanic	350	82.8	1.23

See notes at end of table.

Table 50. Weight adjustment factors for not located adjustment: 2017—Continued

Model predictor variables and interactions	Number located	Weighted response rate	Average weight adjustment factor (BB17AWT1)
Aged 30 or more as of 12/31/2015, Unknown if received aid, Asian, non-Hispanic, American Indian or Alaskan Native, non-Hispanic, or More than one race, non-Hispanic	50	56.9	1.88
Aged 30 or more as of 12/31/2015, Unknown if received aid, Black, non-Hispanic, Hispanic, or unknown race/ethnicity	180	61.4	1.65

[1] 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, 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.
[2] Enrollment, Stafford Loan, PLUS Loan, Ratio of Amount Owed, and Cumulative Federal Loan categories were defined by quartiles.
[3] Pell Grant categories for students receiving less than $5,775 in Pell Grants were defined by computing the median of all students receiving Pell grants of less than $5,775, then all students receiving Pell Grants of $5,775 or more are in a single category.
NOTE: CHAID = chi-square automatic interaction detection; PLUS= Parent Loan for Undergraduate Students. SSN = Social Security number. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B: 16/17).

Student other nonresponse adjustments (BB17AWT2). The third, and final, stage of adjustment for student nonresponse was an adjustment for other nonresponse (i.e., contacted, but not surveyed before the end of the data collection period). Staff made these additional student nonresponse adjustments for the cross-sectional weight to compensate further for potential student nonresponse bias. As with the previous nonresponse adjustments, the same WTADJUST SUDAAN procedures and candidate predictor variables were used, and CHAID analyses on the predictor variables were run to detect important interactions.

Table 51 shows the final predictor variables used in the model to determine weight adjustments and the average weight adjustment factor resulting from these variables for the cross-sectional weight. Summary statistics of the other nonresponse weight adjustment factors have the following characteristics:

- minimum: 1.00;
- median: 1.23; and
- maximum: 5.93.

The final lower bound was 1.0 and the final upper bound was 10,000 to achieve convergence for this weight adjustment.

Table 51. Weight adjustment factors for other nonresponse adjustment: 2017

Model predictor variables and interactions	Number responded	Weighted response rate	Average weight adjustment factor (BB17AWT2)
Total	19,490	76.8	1.30
Control and level of institution attended			
Public 2-year and public 4-year, non-doctorate-granting, primarily subbaccalaureate	890	53.2	1.90
Public 4-year, non-doctorate-granting, primarily baccalaureate	1,400	78.7	1.26
Public 4-year, doctorate-granting	5,470	77.3	1.29
Private nonprofit, less-than-4-year or private nonprofit, 4-year, non-doctorate-granting	2,780	79.5	1.24
Private nonprofit, 4-year, doctorate-granting	3,140	75.4	1.29
Private for-profit, less-than-2-year or private for-profit, 2-year or private for-profit, 4-year	5,820	75.4	1.28
Region of institution attended[1]			
New England	980	75.7	1.29
Mideast	3,300	75.9	1.33
Great Lakes	3,010	76.5	1.29
Plains	1,550	79.9	1.23
Southeast	4,620	76.4	1.35
Southwest	2,240	77.4	1.28
Rocky Mountains	1,050	82.4	1.26
Far West	2,570	75.8	1.29
Outlying areas	170	78.5	1.30
Institution total enrollment[2]			
1–2,907	5,110	78.2	1.27
2,908–10,133	4,880	76.1	1.32
10,134–27,396	4,720	76.2	1.34
27,397 or more	4,780	77.4	1.30
Age as of Dec 31, 2015			
15–23	10,330	77.8	1.27
24–29	4,140	75.4	1.34
30 or more	5,020	74.6	1.34
Veteran status			
Yes	1,620	69.9	1.41
No	17,870	77.1	1.29
Race/ethnicity			
White, non-Hispanic	12,000	76.6	1.31
Black, non-Hispanic	2,490	79.9	1.27
Hispanic	2,750	80.6	1.26
Asian, non-Hispanic	1,260	73.0	1.38
American Indian or Alaskan Native, non-Hispanic	100	79.0	1.33
Native Hawaiian or other Pacific Islander, non-Hispanic	70	81.7	1.22
More than one race, non-Hispanic	680	85.8	1.18
Unknown	140	48.7	1.97
Social Security number (SSN) indicator			
Yes	19,200	77.1	1.30
No	290	69.9	1.40

See notes at end of table.

Table 51. Weight adjustment factors for other nonresponse adjustment: 2017—Continued

Model predictor variables and interactions	Number responded	Weighted response rate	Average weight adjustment factor (BB17AWT2)
Pell Grant amount[3]			
Did not receive	11,960	75.8	1.33
$1–$2,887	2,650	81.2	1.25
$2,888–$5,774	2,730	81.3	1.25
$5,775	1,650	80.2	1.26
Direct Loan amount[2]			
Did not receive	10,060	74.2	1.35
$1–$4,180	2,360	79.7	1.27
$4,181–$7,500	4,580	80.6	1.25
$7,501–$8,307	190	79.6	1.25
$8,308 or more	2,310	80.2	1.26
PLUS Loan amount[2]			
Did not receive	17,880	77.2	1.30
$1–$7,044	280	80.0	1.25
$7,045–$12,751	290	81.2	1.24
$12,752–$20,254	280	78.0	1.29
$20,255 or more	270	79.6	1.25
Federal aid status			
Received	12,720	80.3	1.26
Did not receive	5,890	71.5	1.40
Unknown	880	78.5	1.34
Institution aid status			
Received	8,660	79.9	1.26
Did not receive	8,910	74.1	1.35
Unknown	1,920	78.8	1.30
State aid status			
Received	3,520	80.9	1.25
Did not receive	13,940	75.3	1.32
Unknown	2,020	79.4	1.28
Degree major			
Humanities	2,150	75.2	1.33
Social/Behavioral sciences	1,960	81.4	1.22
Life sciences	1,970	82.2	1.20
Physical sciences/Math	440	81.1	1.22
Computer/Information sciences	1,490	77.9	1.32
Engineering	1,150	78.0	1.28
Education	1,980	78.7	1.28
Business/Management	2,340	73.9	1.37
Health	2,910	76.9	1.36
Vocational/Technical	120	84.3	1.20
Other technical/professional or Undecided	2,370	76.2	1.31
Unknown	100	61.7	1.83
Ratio of amount owed to amount borrowed, federal loans[2]			
0–95 percent	4,580	72.9	1.39
96–102 percent	3,230	85.8	1.18
103–110 percent	3,330	82.5	1.21
111 percent or more	3,180	77.0	1.30

See notes at end of table.

Table 51. Weight adjustment factors for other nonresponse adjustment: 2017—Continued

Model predictor variables and interactions	Number responded	Weighted response rate	Average weight adjustment factor (BB17AWT2)
Cumulative Direct Loan amount[2]			
Did not receive	17,370	76.7	1.31
$1–$10,502	530	81.7	1.23
$10,503–$20,500	510	87.7	1.16
$20,501–$28,440	660	86.9	1.15
$28,441 or more	420	57.6	1.71
Type of federal loan repayment plan			
Multiple repayment plans	240	82.5	1.24
Other	5,540	77.5	1.30
Income driven repayment	430	85.2	1.17
Graduated repayment	430	86.3	1.17
Standard repayment	350	79.8	1.27
Not repaying	5,700	78.7	1.27
CHAID segments in nonresponse adjustment model			
Received aid, White, non-Hispanic, Black, non-Hispanic, Asian, non-Hispanic, or American Indian or Alaskan Native, non-Hispanic, Major in 2015–16 was Humanities, Engineering, Business/Management, Health, Other technical/professional, or Undecided	3,430	73.6	1.38
Received aid, White, non-Hispanic, Black, non-Hispanic, Asian, non-Hispanic, or American Indian or Alaskan Native, non-Hispanic, Major in 2015–16 was Social/Behavioral sciences, Life sciences, Physical sciences/Math, Computer/Information sciences, Education, or Vocation/Technical	2,510	87.5	1.15
Received aid, White, Black, Asian, or American Indian or Alaskan Native, Major in 2015–16 was Not Applicable or Unknown	2,950	83.7	1.20
Received aid, Native Hawaiian or other Pacific Islander, non-Hispanic or More than one race, non-Hispanic, Female	5,850	78.7	1.29
Received aid, Native Hawaiian or other Pacific Islander, non-Hispanic or More than one race, non-Hispanic, Male	740	91.8	1.09
Received aid, Hispanic, Attended a Public 4-year, doctorate-granting, Private nonprofit, less-than-4-year, or Private nonprofit, 4-year, non-doctorate-granting institution	90	68.6	1.48
Received aid, Hispanic, Attended a Public 2-year or Public 4-year, non-doctorate-granting, primarily sub-baccalaureate institution	260	88.3	1.13
Received aid, Hispanic, Attended a Public 4-year, non-doctorate-granting, primarily baccalaureate or Private nonprofit, 4-year, doctorate-granting institution	90	66.4	1.56
Received aid, Hispanic, Attended a Private for-profit, less-than-2-year, Private for-profit, 2-year, or Private for-profit, 4-year institution	180	48.0	2.07
Received aid, Unknown race/ethnicity, Institution has an enrollment of 1 to 10,133	120	81.3	1.22
Received aid, Unknown race/ethnicity, Institution has an enrollment of 10,134 to 27,396	140	78.6	1.30
Received aid, Unknown race/ethnicity, Institution has an enrollment of 27,394 or more	300	95.8	1.04
Did not receive aid, Attended a Private nonprofit, less-than-4-year, Private nonprofit, 4-year, non-doctorate-granting, or Private nonprofit, 4-year, doctorate-granting institution	120	32.3	3.02
Did not receive aid, Attended a Public 2-year or Public 4-year, non-doctorate-granting, primarily sub-baccalaureate institution, Major in 2015–16 was Business/Management, Health, Other technical/professional, or Undecided	50	99.9	1.00
Did not receive aid, Attended a Public 2-year or Public 4-year, non-doctorate-granting, primarily sub-baccalaureate institution, Major in 2015–16 was Humanities or Computer/Information sciences	250	85.4	1.17

See notes at end of table.

Table 51. Weight adjustment factors for other nonresponse adjustment: 2017—Continued

Model predictor variables and interactions	Number responded	Weighted response rate	Average weight adjustment factor (BB17AWT2)
Did not receive aid, Attended a Public 2-year or Public 4-year, non-doctorate-granting, primarily sub-baccalaureate institution, Major in 2015–16 was Social/Behavioral sciences, Life sciences, Engineering, Education, Vocation/Technical, or Unknown	220	92.9	1.08
Did not receive aid, Attended a Public 4-year, non-doctorate-granting, primarily baccalaureate, Public 4-year, doctorate-granting, Private for-profit, less-than-2-year, Private for-profit, 2-year, or Private for-profit, 4-year institution	820	83.2	1.20
Unknown if received any aid, Did not receive federal aid, Attended a Public 4-year, non-doctorate-granting, primarily baccalaureate, Public 4-year, doctorate-granting, Private nonprofit, less- than-4-year, Private nonprofit, 4-year non-doctorate-granting, or Private nonprofit, 4-year doctorate-granting institution	210	46.9	2.17
Unknown if received any aid, Did not receive federal aid, Attended a Public 2-year or Public 4-year, non-doctorate-granting, primarily sub-baccalaureate institution	80	74.7	1.33
Unknown if received any aid, Did not receive federal aid, Attended a Private for-profit less-than-2-year, Private for-profit 2-year, or Private for-profit 4-year institution	510	47.3	2.12
Unknown if received any aid, Unknown if received federal aid, Attended a Private nonprofit, less-than-4-year, Private nonprofit, 4-year, non-doctorate-granting, Private for-profit, less-than-2-year, Private for-profit, 2-year, or Private for-profit, 4-year institution	200	75.5	1.32
Unknown if received any aid, Unknown if received federal aid, Attended a Public 2-year, Public 4-year, non-doctorate-granting, primarily sub-baccalaureate, or Private nonprofit, 4-year, doctorate-granting institution	100	50.3	2.18
Unknown if received any aid, Unknown if received federal aid, Attended a Public 4-year, non-doctorate-granting, primarily baccalaureate or Public 4-year, doctorate-granting institution	260	83.7	1.20

[1] 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, 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.
[2] Enrollment, Stafford Loan, PLUS Loan, Ratio of Amount Owed, and Cumulative Federal Loan categories were defined by quartiles.
[3] Pell Grant categories for students receiving less than $5,775 in Pell Grants were defined by computing the median of all students receiving Pell grants of less than $5,775, then all students receiving Pell Grants of $5,775 or more are in a single category.
NOTE: CHAID = chi-square automatic interaction detection; PLUS= Parent Loan for Undergraduate Students. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B: 16/17).

6.1.3 Poststratification Adjustment (BB17AWT3)

To ensure that the weighted sample adequately represented the population of students who received their baccalaureate degrees in the 2015-16 academic year, staff used SUDAAN WTADJUST to further adjust the weights so that they sum to known population totals (control totals) for key characteristics. This adjustment also helped increase the precision of the estimates for these key characteristics and any related characteristics.

For the following variables, the control totals for the B&B:16/17 analysis weight, which applies to the full B&B:16 cohort, including deceased sample members, were modified from weighted sums created during NPSAS:16:

- total Direct Loan amount borrowed in the 2015–16 academic year;
- number of Direct Loan recipients in the 2015–16 academic year by control of institution;
- total Pell Grant amount borrowed in the 2015–16 academic year by control of institution;
- total PLUS amount borrowed in the 2015–16 academic year by control of institution;
- cumulative number of Pell Grant recipients (through January 2018) by control of institution;
- cumulative Pell Grant amount borrowed (through January 2018) by control of institution;
- cumulative number of Direct Loan recipients (through January 2018) by control of institution; and
- cumulative Direct Loan amount borrowed (through January 2018) by control of institution.

Additionally, control totals were formed from IPEDS counts of baccalaureate recipients for institution control, sex, and major. The following variables were used in defining control totals from the IPEDs completion file (C2016_a):

- 2015–16 baccalaureate recipients by sex;
- 2015–16 baccalaureate recipients by control of institution; and
- 2015–16 baccalaureate recipients by major (12 categories).

Table 52 shows the variables used for the post-stratification, the values of the control totals, and the average weight adjustment factors, which includes the adjustment factor for trimming, for each variable for the cross-sectional weight. Statistics for the poststratification weight adjustment factors have the following characteristics:

- minimum: 0.03;
- median: 1.51; and
- maximum: 37.15.

The bounds on trimming were set as the nonresponse adjusted weight plus or minus 3 times the interquartile range, where the median and interquartile range were defined by control and level of institution. In addition, the model adjustment factors had a lower bound of 0.2 and an upper bound of 100 in order to achieve convergence. The total poststratification adjustment factor as displayed in Table 52 is

defined as the product of the trim adjustment factor and model adjustment factor. After poststratification was performed, staff computed the final analysis weight (WTA000) as the product of the weight components described in this section.

WTA000 = B&B:16/17 base weight × BB17AWT1 × BB17AWT2 × BB17AWT3

Table 52. Weight adjustment factors for poststratification: 2017

Poststratification categories	Control total	Average weight adjustment factor (BB17AWT3)
Number of students who completed baccalaureate degree from a NPSAS eligible institution	2,041,740	2.18
Number of baccalaureate recipients, by control of institution		
Public	1,299,130	1.48
Private nonprofit	617,610	1.41
Number of baccalaureate recipients, by sex		
Male	871,550	2.16
Female	1,170,190	2.19
Number of baccalaureate recipients, by degree major		
Humanities	249,600	2.31
Social/behavioral sciences	282,790	1.99
Life sciences	255,610	1.77
Physical sciences	32,150	1.42
Math	26,790	2.04
Computer/information science	67,380	3.29
Engineering	125,770	1.76
Education	93,470	2.41
Business/management	396,580	2.03
Health	235,310	2.00
Vocational/technical	13,870	1.76
Other technical/professional	262,410	2.35
Total Direct Loan amount borrowed in the 2015–16 academic year	6,859,851,130	2.34
Number of Direct Loan recipients in the 2015–16 academic year, by control of institution		
Public	571,390	1.58
Private nonprofit	321,130	1.47
Private for-profit	60,090	4.31
Total Pell Grant amount borrowed in the 2015–16 academic year, by control of institution		
Public	1,577,059,460	1.62
Private nonprofit	688,341,710	1.52
Private for-profit	177,856,740	4.40
Total PLUS loan amount borrowed in the 2015–16 academic year, by control of institution		
Public	824,207,720	1.45
Private nonprofit	952,179,040	1.43
Private for-profit	43,862,150	2.82
Cumulative number of Pell Grant recipients, by control of institution		
Public	663,680	1.59
Private nonprofit	282,520	1.51
Private for-profit	91,730	4.39

See notes at end of table.

Table 52. Weight adjustment factors for poststratification: 2017—Continued

Poststratification categories	Control total	Average weight adjustment factor (BB17AWT3)
Cumulative number of Direct Loan recipients, by control of institution		
Public	832,560	1.55
Private nonprofit	416,620	1.46
Private for-profit	102,480	4.18
Cumulative Pell Grant amount borrowed, by control of institution		
Public	10,476,003,020	1.55
Private nonprofit	4,146,715,610	1.46
Private for-profit	1,581,837,280	4.18
Cumulative Direct Loan amount borrowed, by control of institution		
Public	21,465,012,060	1.59
Private nonprofit	11,472,352,410	1.51
Private for-profit	4,214,371,770	4.39

NOTE: NPSAS = National Postsecondary Student Aid Study. PLUS = Parent Loan for Undergraduate Students. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B: 16/17).

6.1.4 Weighting Adjustment Summary and Evaluation

Table 53 summarizes the student weight distribution and the variance inflation caused by unequal weighting (UWE) by control of institution for the B&B:16/17 analysis weight. The median student weight ranges from 12.88 for students in private for-profit institutions to 147.85 for students in public institutions. The mean student weight ranges from 21.06 for students in private for-profit institutions to 167.50 for students in public institutions.

The unequal weighting effect is 2.25 overall and ranges from 1.56 for students in private nonprofit institutions to 1.72 for students in private for-profit or public institutions. This means that for students, 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 the higher UWEs, there is little concern about the effects it could have on estimation. The sample design and sample sizes accounted for UWEs in this range to ensure precision of estimates.

Table 53. Student weight distribution and unequal weighting effects: 2017

Control of institution	Minimum	First quartile	Median	Third quartile	Maximum	Mean	Unequal weighting effect[1]
Total	**4.99**	**15.59**	**63.29**	**153.23**	**889.96**	**104.59**	**2.25**
Public	5.24	54.77	147.85	226.80	889.96	167.50	1.72
Private nonprofit	5.14	47.79	89.30	134.33	489.80	104.24	1.56
Private for-profit	4.99	10.51	12.88	22.29	372.91	21.06	1.72

[1]Unequal weighting effect calculated as 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B: 16/17).

A Receiver Operating Characteristic (ROC) curve (Hanley and McNeil 1982) was used to assess the overall predictive ability of the cross-sectional student nonresponse models. The ROC curve provides a measure of how well the model correctly classified individuals of known response type—in other words, how well the model predicts a student's response propensity.[36] 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 three nonresponse adjustment steps. Note that for the second nonresponse adjustment (other 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; and
- the proportion of nonrespondents with a predicted probability of response greater than c.

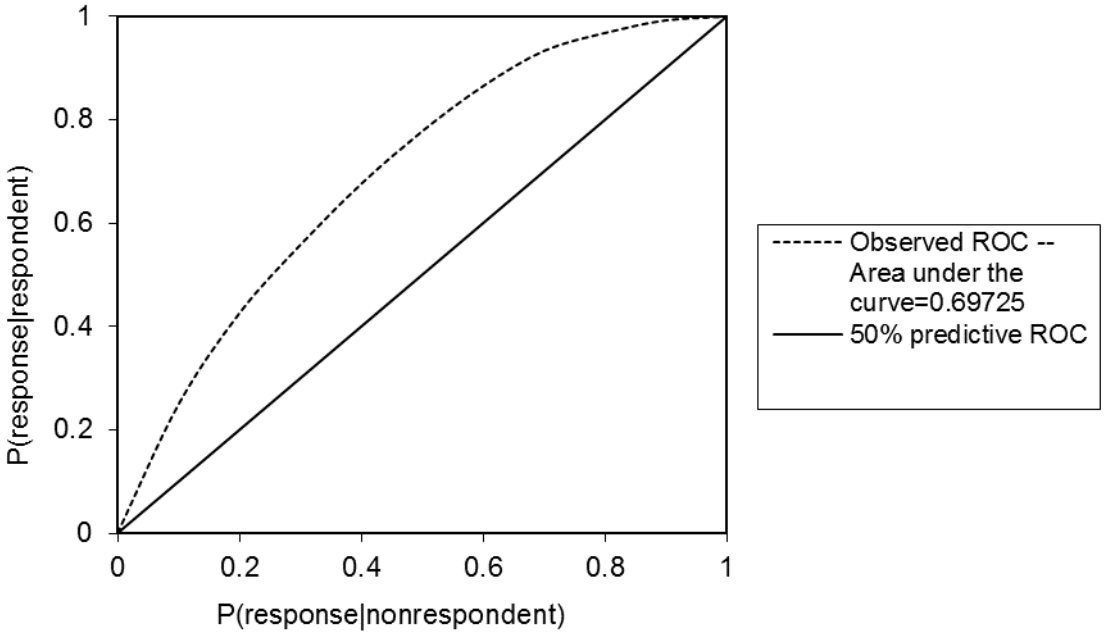
The plot of the first proportion against the second, for c from zero to 1, resulted in the ROC curve shown in figure 8. The area under the curve equals the probability that the fitted model correctly classifies two randomly chosen individuals—one of whom is a true respondent, and one of whom is a true nonrespondent—where the individual with the higher predicted probability of response is classified as the respondent. An area of 0.5 under a ROC curve indicates that a correct classification is made 50 percent of the time, with the model providing no predictive benefit. An area of 1.0 indicates that the true respondent always has the higher predicted

[36] For a more detailed example of the ROC curve used in nonresponse modeling, see Iannacchione (2003).

probability of response, as compared to the true nonrespondent, so the model always classifies the two individuals correctly.

Figure 8 shows that the area under the ROC curve is approximately 0.70, so the predicted probabilities give the correct classification 70 percent of the time. Researchers can also interpret predictive probabilities from ROC curves in terms of the nonparametric Wilcoxon test statistic, which is used to determine if the level of a quantitative variable, such as predicted probability of response, is different between two samples (respondents and nonrespondents in this case). The ROC area equals the value of the Wilcoxon test statistic. Viewed in this way, the Wilcoxon test rejects the null hypothesis of no predictive ability by showing that the predicted probability of response for the respondents is larger than that for the nonrespondents. Analysts can interpret this result to mean that the variables used in the model are highly informative predictors of a student's overall response propensity.

Figure 8. Receiver Operating Characteristic (ROC) curve for overall student response propensity: 2017



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B: 16/17).

6.2 Nonresponse Bias Analysis

The sources of error in a survey 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 errors are nonsampling errors, including survey nonresponse (because of inability to contact sample members, their refusal to participate in the study, etc.) and measurement errors, such as the errors that occur because the intent of survey questions was not clear to the respondent, because the respondent had insufficient knowledge to answer correctly, or because the data were not captured correctly (e.g., because of recording, editing, or data entry errors).

Nonsampling errors, such as nonresponse, are often nonrandom and may result in bias. In this section, nonsampling error is observed by comparing B&B:16/17 nonrespondents and respondents using characteristics known for both groups. Section 6.3 discusses measurement of sampling error by variance estimation.

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 $\bar{y}_R$ is the difference between the expected value of this mean and the target parameter, π, the population mean. Analysts can estimate the population mean for characteristics that are observed for both respondents and nonrespondents with the full-sample mean, 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 η is the weighted unit (or item) nonresponse rate. For variables that are from the frame rather than from the sample, analysts can estimate π without sampling error. They can then estimate bias as the difference between the respondent mean and the full sample mean: $\hat{B}(\bar{y}_R) = \bar{y}_R - \hat{\pi}$. Equivalently, 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:16/17 staff conducted nonresponse bias analysis at the student level and item level for the overall sample and for each control of institution. These analyses are described in the sections below. The student-level nonresponse bias analysis results are summarized in table 54 and table 55, and detailed tables are provided in appendix I. The item-level response rates are shown in appendix K, table K-1, and the item-level nonresponse bias analysis results are summarized in appendix I, table I-9.

6.2.1 Nonresponse Bias Analysis: Student Level

As shown in table 8 (see section 2.3.2), the B&B:16/17 weighted survey response rate for students using the B&B:16/17 base weight (section 6.1.1) was 71 percent overall and ranged from 68 percent for for-profit institutions to 72 percent for private nonprofit institutions. Therefore, a student-level nonresponse bias analysis was conducted overall and within each institution category for B&B:16/17.

Nonresponse bias was estimated for variables known for most respondents and nonrespondents. The following variables were used for the nonresponse bias analysis:[37]

- control of institution attended (categorical – from NPSAS:16);
- region of institution attended (categorical – from NPSAS:16);
- institution total enrollment from IPEDS 2015–16 file (categorical – from NPSAS:16);
- age group (categorical – from NPSAS:16);
- veteran status (yes/no – from NPSAS:16);
- race/ethnicity (categorical – from NPSAS:16);
- sex (two levels – from NPSAS:16);
- SSN obtained from enrollment list (yes/no – from NPSAS:16)
- Pell Grant amount (categorical – from NPSAS:16);
- Direct Loan amount (categorical – from NPSAS:16);
- PLUS amount (categorical – from NPSAS:16);
- federal aid receipt (yes/no – from NPSAS:16);

[37] Pell, Direct, and federal financial aid variables were updated using CPS through January 2018; unless indicated, other variables are from NPSAS:16. For continuous variables, categories were formed based on quartiles.

- institution aid receipt (yes/no – from NPSAS:16);
- state aid receipt (yes/no – from NPSAS:16);
- any aid receipt (yes/no – from NPSAS:16);
- degree major (categorical – from NPSAS:16);
- ratio of amount owed to amount borrowed in federal loans (categorical – through January 2018);
- cumulative Direct Loan amount (categorical – through January 2018); and
- type of federal loan repayment plan (categorical – through January 2018).

First, for the variables listed above, nonresponse bias was estimated for each category as the weighted difference between the means (proportions) of the respondents and of the full sample, and this estimated nonresponse bias was tested using a *t*-test to determine if it differed significantly from zero at the 5-percent level. Relative bias was computed as the ratio of the estimated bias to the weighted full-sample mean. Second, nonresponse adjustments were computed to reduce or eliminate nonresponse bias for key variables. Third, using the weights adjusted for nonresponse, the re-estimated nonresponse bias was tested for significance. These tests were complemented by effect size calculations. Finally, to better understand the effect of poststratification on efforts to reduce nonresponse bias, two additional sets of estimates were created. The first set of estimates equals the differences in respondent means before and after poststratification, which corresponds to the effect of poststratification on nonresponse adjustments. The second set of estimates, equal to the difference between base-weighted full-sample means and the poststratified respondent means, corresponds to the cumulative effects of all weighting and adjustment steps.

As shown in table 54, the student nonresponse weighting adjustment eliminated some, but not all, significant bias on the observable characteristics for sectors that met reporting requirements (i.e., had at least 30 nonrespondents). Before weighting, the median effect size for all institutions was 0.06, ranging from 0.06 for students in private nonprofit institutions to 0.07 for students in public institutions and students in private for-profit institutions. The percentage of characteristics that were significantly biased for respondents was 65 percent overall, ranging from 22 percent for students in private for-profit institutions to 59 percent for students in public institutions. After the nonresponse weight adjustment, the median effect size for all respondents was 0.01, ranging from 0.01 for students in public institutions to 0.06 for students in private for-profit institutions. The percentage of characteristics that remained significantly biased was 13 percent overall and ranged from 10 percent for

students in private nonprofit institutions to 18 percent for students in private for-profit institutions.

Table 54. Summary of student-level nonresponse bias analysis, by control of institution: 2017

Nonresponse bias statistics[1]	Overall	Public	Private nonprofit	Private for-profit
Before nonresponse weight adjustments[2]				
Mean percent relative bias across characteristics	8.36	8.41	8.74	7.45
Median percent relative bias across characteristics	5.52	5.87	5.65	5.22
Percentage of characteristics with significant bias	64.84	58.54	52.50	21.79
Median effect size	0.06	0.07	0.06	0.07
After nonresponse weight adjustments[3]				
Mean percent relative bias across characteristics	1.37	2.76	3.08	6.40
Median percent relative bias across characteristics	0.01	1.14	2.09	4.22
Percentage of characteristics with significant bias	13.19	12.20	10.00	17.95
Median effect size	0.01	0.01	0.02	0.06

[1] 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.
[2] Respondent and full-sample means are weighted using the B&B:16/17 base weight.
[3] Full-sample means are weighted using the B&B:16/17 base weight and the respondent means are weighted using the B&B:16/17 base weight adjusted for nonresponse.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

As shown in table 55 the overall mean absolute difference between means for respondents before and after poststratification adjustment was 0.87 and ranged from 0.82 for students in public institutions to 3.65 for students in private for-profit institutions, while the overall median difference was 0.44 for respondents and ranged from 0.46 for students in private nonprofit institutions to 2.76 for students in private for-profit institutions. For the absolute differences between means for the full sample and respondents after poststratification adjustment, the mean difference was 0.90 and ranged from 0.89 for students in public institutions to 3.07 for students in private for-profit institutions, while the median was 0.39 for the full sample and respondents and ranged from 0.46 for students in public institutions to 2.27 for students in private for-profit institutions.

Table 55. Summary of student-level differences between means, by control of institution: 2017

Summary statistics	Overall	Public	Private nonprofit	Private for-profit
Difference between means for respondents before and after poststratification adjustment[1]				
Mean absolute difference across characteristics	0.87	0.82	0.86	3.65
Median absolute difference across characteristics	0.44	0.53	0.46	2.76
Difference between means for full sample and respondents after poststratification adjustment[2]				
Mean absolute difference across characteristics	0.90	0.89	0.94	3.07
Median absolute difference across characteristics	0.39	0.46	0.60	2.27

[1] Respondent means before poststratification adjustment are weighted using the B&B:16/17 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:16/17 base weight adjusted for nonresponse and poststratification.
[2] Full-sample means are weighted using the B&B:16/17 base weight and respondent means are weighted using the B&B:16/17 base weight adjusted for nonresponse and poststratification.
NOTE: 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Detailed summaries of the student-level nonresponse bias analysis are provided in appendix I.

6.2.2 Nonresponse 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 (RRI) 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 RRI 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). The RRI is calculated as

$$RRI^x = I^x / (I - V^x).$$

A nonresponse bias analysis was conducted for all imputed items[38] and select analysis variables with a weighted response rate less than 85 percent overall and by control of institution. The B&B:16/17 analysis weight (WTA000) was used for computing item response rates (appendix K, table K-1). The procedures and variables used for the item-level nonresponse bias analysis are the same as those used for the student-level nonresponse bias analysis presented above. A student was defined to be an item respondent for a variable if that student had data for that variable from any source, including logical imputation.

Of 410 imputed items and select derived analysis variables, all had a sufficient number of eligible students (at least 30) to permit estimation of overall response rates. Of these, 329 had an overall weighted response rate below 85 percent. An additional item had an overall response rate greater than 85 percent but had a weighted response rate below 85 percent for at least one control of institution, yielding a total of 330 items for which nonresponse bias analyses were conducted. The results of the nonresponse bias analyses varied across items. Table I-9 in appendix I provides a summary of the item nonresponse bias analysis for each item analyzed.

Imputation procedures (described in section 6.4) were conducted with a goal of reducing or eliminating 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.

For continuous variables, the difference between the preimputation mean and postimputation mean was computed; for categorical variables, the difference between the weighted preimputation and postimputation mean (proportion) was computed for each category. The analysis weight was used for these comparisons. All differences were tested for statistical significance using *t*-tests. For categorical variables, the differences between pre- and post-imputation means reported in

[38] Variables with only logical imputations (defined in section 6.4) 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 H. All nonimputed variables either have no missing data or are derived from variables that are imputed or have no missing data.

appendix I, table I-9, are size-weighted means of category-level differences[39] and are labeled as significant if any category-level difference is significant. 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-imputation and post-imputation means, divided by the post-imputation standard deviation.

Overall, statistically significant differences between the pre- and post- imputation means were found for about 20 percent of the variables (excluding those that did not meet reporting standards). Effect sizes for these differences range from 0.01 to 0.13. About 23 percent of the differences reported by control of institution were found to be statistically significant, with effect sizes for these differences ranging from 0.01 to 0.21. See table I-9, appendix I for more details.

6.3 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 modelling that use 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:16 and B&B:16/17, result in data that violate the assumptions that are normally required to assess the statistical significance of results. 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. Two procedures for estimating variances of statistics from complex surveys are the Taylor-series linearization procedure and the bootstrap replication procedure, which are both available for the B&B:16/17 data files. The analysis strata and PSUs created for the Taylor-series procedure are discussed in section 6.3.1, and section 6.3.2contains a discussion of the replicate weights created for the bootstrap procedure. Use of software packages for proper variance estimation is discussed in section 6.3.3.

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 simple random sample of the same size (if that sample had been selected). It is often

[39] The size-weighted means are weighted using the unweighted count of eligible students in each category for the variable.

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 section 6.3.4.

6.3.1 Taylor Series

The Taylor series variance estimation procedure is a well-known technique used to estimate the variances of nonlinear statistics.[40] The procedure takes the first-order Taylor series approximation of the nonlinear statistic and substitutes the linear representation into the appropriate variance formula based on the sample design (Woodruff 1971).

For stratified multistage surveys, the Taylor series procedure requires variance estimation strata and variance estimation PSUs, also called replicates, defined from the sampling strata and PSUs used in the first stage of sampling. Because B&B:16/17 is a follow-up study to NPSAS:16, the variance estimation strata and PSUs for B&B:16/17 were derived from those developed for NPSAS:16. The steps used in the construction of the NPSAS:16 strata and PSU variables are described in chapter 7 of the NPSAS:16 Data File Documentation (Wine, Siegel, and Stollberg 2018). The variance estimation formulas require at least two PSUs in each stratum. The NPSAS:16 variance estimation strata and PSUs were collapsed for the B&B:16/17 variance estimation strata and PSUs. The following three rules were used: variance estimation strata were combined with other variance estimation strata within the original NPSAS:16 sampling strata; certainty schools were combined with other certainty schools; and noncertainty schools were combined with other noncertainty schools. In addition, the original sort order that was used for constructing the NPSAS:16 variance estimation strata and PSUs was used for B&B:16/17. 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:16 restricted-use data file provided two sets of variables for Taylor series variance estimation, and B&B:16/17 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)

[40] For probability-based sample surveys, such as B&B:16/17, most estimates are nonlinear statistics due to the complex sampling design.

and does not account for the finite population correction (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 used when assuming the first-stage units were sampled with replacement includes the analysis stratum (BB17ANALSTR) and analysis PSU (BB17ANALPSU). The set of variables used when assuming the first-stage units were sampled without replacement and that account for the FPC includes the analysis stratum (BB17FANALSTR), analysis PSU (BB17FANALPSU), the analysis secondary sampling unit (SSU) (BB17FANALSSU), and the count of PSUs in an analysis stratum (BB17PSUCOUNT). Ultimately, BB17FANALSTR equals the institutional variance estimation stratum BB17ANALSTR; BB17FANALPSU equals BB17ANALPSU. BB17FANALSSU was created by randomly dividing the NPSAS:16 analysis PSUs into two parts. These variables are a by-product of the bootstrap variance estimation weights (described in section 6.3.2), 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, and SSU variables were combined in order to have at least two SSUs in each PSU, and at least 2 PSUs in each stratum. The same stratum and PSU terms, under with-replacement and without-replacement assumptions, are used for analysis with the cross-sectional weight.

6.3.2 Bootstrap Replicate Weights

In B&B:16/17, variance was also estimated using the bootstrap variance estimation methodology. This replication variance estimation strategy is the same that was used for NPSAS:16. In order to produce accurate variance estimates, it accounts for the following:

1. stratification at all stages of sampling;
2. unequal weighting;
3. sample clustering;
4. weight adjustments for nonresponse and for poststratification of selected total estimates to known external totals;

5. nonlinear statistics and percentages, as well as linear statistics;
6. finite population corrections 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 finite population corrections 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 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 is as follows:

1. Approximate the stratum-level first-stage FPC for the selected stratum sample, using Kott's (1988) model-based approximation.

$$\text{FPC}_h = \frac{\hat{N}_h - n_h}{\hat{N}_h}.$$

2. Generate a uniform (0, 1) random number R_h for each stratum *h*.

3. If $R_h \leq \text{FPC}_h$, 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 (in expectation) 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 they added to the analysis file. These weights are zero for units not selected in a particular bootstrap sample; weights for other units are inflated for the bootstrap subsampling.

The final analysis weight (WTA000) described in section 6.1 is 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:

$$\mathrm{var}(\hat{\theta}) = \frac{\sum_{b=1}^{B} (\hat{\theta}_b^* - \hat{\theta})^2}{B},$$

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 (WTA001–WTA200) so that the variances would be estimated to account for these weight adjustments. For some of the replicates, the bounds on the nonresponse and poststratification adjustment factors had to be loosened or model variables had to be collapsed because of model convergence problems (i.e., there was no solution to satisfy all model equations simultaneously). However, the model adjustments were not necessary for many replicates, and when it was necessary, the adjustments were minimal. Therefore, this approach worked well for B&B:16/17 to achieve model convergence for all replicates and to minimize the effect of different models on the variance estimates.

6.3.3 Software Use for Variance Estimation

Table 56 summarizes the weight and variance estimation variables and how they are used in selected software packages that allow for Taylor series variance estimation with replacement (SUDAAN, Stata, the SAS survey data analysis procedures, IBM SPSS Complex Samples, and the R survey package), Taylor series variance estimation without replacement (SUDAAN, Stata, and the R survey package), and bootstrap variance estimation (SUDAAN, Stata, the SAS survey data analysis procedures, WesVar, and the R survey package). The code shown in the table 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 56. Use of analysis weight, replicate weights, and variance estimation strata and primary sampling unit (PSU) variables available from B&B:16/17 in selected survey data analysis software: 2017

Description of estimation	Variable/Code
Analysis weight for estimates	WTA000
Taylor series variance estimation (with replacement)	
Variance estimation strata and PSU variables	BB17ANALSTR and BB17ANALPSU
Software: statements, parameters, and keywords	
SUDAAN	DESIGN = WR WEIGHT WTA000; NEST BB17ANALSTR BB17ANALPSU;
Stata	svyset BB17ANALPSU [pweight = wta000], strata (BB17ANALSTR) vce(linearized)
SAS survey analysis procedures	VARMETHOD = JACKKNIFE WEIGHT WTA000; STRATA BB17ANALSTR; CLUSTER BB17ANALPSU;
IBM SPSS complex samples[1]	CSPLAN ANALYSIS /PLAN FILE='myfile.csaplan' /PLANVARS ANALYSISWEIGHT=WTA000 /DESIGN STRATA= BB17ANALSTR CLUSTER= BB17ANALPSU /ESTIMATOR TYPE=WR
R survey package[2]	mydesign <- svydesign(id=~ BB17ANALPSU, strata=~ BB17ANALSTR, weights=~WTA000, data=mydata)
Taylor series variance estimation (without replacement)	
Variance estimation strata, PSU, SSU, and count variables	BB17FANALSTR, BB17FANALPSU, BB17FANALSSU, and BB17PSUCOUNT
Software: statements, parameters, and keywords	
SUDAAN	DESIGN = WOR WEIGHT WTA000; NEST BB17FANALSTR BB17FANALPSU BB17FANALSSU; TOTCNT BB17PSUCOUNT _minus1_ _zero_;
Stata	svyset BB17FANALPSU [pweight=wta000], strata(BB17FANALSTR) fpc(BB17PSUCOUNT) || BB17FANALSSU, vce(linearized)
R survey package[2]	mydesign <- svydesign(id=~ BB17FANALPSU, strata=~ BB17FANALSTR, weights=~WTA000, fpc=~ BB17PSUCOUNT, data=mydata)
Bootstrap variance estimation	
Replicate weight variables	WTA001 - WTA200
Software: statements, parameters, and keywords for Bootstrap variance	
SUDAAN	DESIGN = BRR WEIGHT WTA000; REPWGT WTA001 -WTA200;
Stata	svyset [pweight=wta000], brrweight(wta001 - wta200) vce(brr) mse
SAS survey data analysis procedures	VARMETHOD = BRR WEIGHT WTA000; REPWEIGHTS WTA001-WTA200;
WesVar	Method: BRR Full sample weight: WTA000 Replicates: WTA001-WTA200
R survey package[2]	mydesign <- svrepdesign(type="BRR", weights=~WTA000, repweights="WTA00[1-200]", combined.weights=FALSE, data=mydata)

[1] The name "myfile" should be replaced with the desired file name.
[2] For 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. For the without-replacement design, the R survey package does not account for the second stage of sampling.
NOTE: The survey data analysis software specifications are given for the following versions of the software packages: SUDAAN 11.0.1, Stata 12 and newer, SAS 9.3 and newer, IBM SPSS complex samples 20, and WesVar 4.3 and newer.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond (B&B:16/17).

6.3.4 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 DEFT, although this method is less precise than Taylor series or replication techniques. Those who must perform an analysis of B&B:16/17 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 WTA000 and then use the design effect tables in appendix J 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 for a given estimate, $\hat{\theta}$, is defined as

$$\mathrm{DEFF}(\hat{\theta}) = \frac{Var_{design}(\hat{\theta})}{Var_{srs}(\hat{\theta})}.$$

The square root of the design effect is another measure which analysts can express as the ratio of the standard errors, or

$$\mathrm{DEFT}(\hat{\theta}) = \frac{SE_{design}(\hat{\theta})}{SE_{srs}(\hat{\theta})}.$$

Most complex multistage sampling designs, like NPSAS:16 and B&B:16/17, result in design effects greater than 1.0. That is, the design-based variance is larger than the simple random sample variance. Appendix J 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 NPSAS:16 and B&B:16/17. Unequal weighting causes large design effects and is often due to nonresponse and poststratification adjustments; however, in NPSAS:16

and B&B:16/17, 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, the analyst should normalize the overall sample weights for packages that use the weighted population size (*N*) in the calculation of standard errors (SPSS but not SAS). 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 square root of the *DEFF* or the *DEFT*. The *DEFF* and *DEFT* used to make adjustments can be calculated for specific estimates, or they can be the median *DEFF* and *DEFT* across a number of 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* and *F* statistics.

A second option is to adjust the *t* and *F* statistics produced by statistical software packages using unadjusted (i.e., SRS) standard errors. To do this, first, conduct the desired analysis weighted by the normalized weight. Then divide a *t* statistic by the *DEFT*, or divide 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 the analyses.

6.4 Imputations

Missing data for all variables included in the restricted-use derived file (also used in PowerStats) were imputed in accordance with mass imputation procedures described by Krotki, Black, and Creel (2005). After filling in missing data for cases where values could be deduced with certainty based upon logical or mathematical

relationships among observed variables (logical imputation),[41] the weighted sequential hot deck (WSHD) method was used to replace missing data by imputing plausible values from statistically selected donor cases[42] (stochastic imputation) (Cox 1980; Iannacchione 1982).

The first stage in the imputation procedure was to determine the pattern and level of missingness and produce an initial set of imputations. Depending on patterns of missing data, some variables that were related substantively and required imputation were grouped into blocks (vectors), and the variables within a block were imputed simultaneously (vector imputation). Then, variables and vectors were prioritized for imputation based upon their level of missing data, imputing those variables and vectors with low levels of missingness prior to imputing variables where the rate of missingness was greater. That is, variables with smaller amounts of uncertainty due to imputation were imputed first, and variables with larger amounts of uncertainty due to imputation were imputed next. For each variable and vector, B&B:16/17 staff identified imputation classes from which donor cases for the hot deck procedure would be selected. To develop those classes, nonparametric classification or regression trees were used to identify homogeneous subgroups of item respondents (Breiman et al. 1984) using complete response variables and any previously imputed variables as possible predictor variables. Within these classes, WSHD was used to select donors.

In the second stage of imputation, for each variable or vector in the same sequence as in the first stage, the missingness was reintroduced and the missing items were reimputed. This time all complete response variables and imputed variables on the data set were available to form the imputation classes. To improve imputation quality, this previously described procedure using trees and WSHD was combined and implemented with the cyclic *p*-partition hot deck (Marker, Judkins, and Winglee 2002) technique (cycling), as discussed in Judkins (1997). This imputation approach reinforces existing patterns within the observed data. This is an iterative process, and typically, the result of cycling is a convergence to plausible values and maintenance of relationships that already exist. For B&B:16/17, there were five iterations, 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

[41] An example of logical imputation is if a student 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 student has zero total dependents, it may be logically inferred that the student has zero dependent children.
[42] Respondents who did not have the specific survey item missing.

complete (observed and imputed) data were compared to screen variables for further investigation. Item response rates are shown in appendix K, table K-1, and the observed and imputed distributions for 394 variables are provided in appendix K, tables K-2 and K-3.

6.5 Disclosure Risk Analysis and Avoidance

In preparing data files for release, NCES takes steps to minimize the likelihood that individual students participating in the study can be identified. The process of preparing the files for release includes a formal disclosure risk analysis. Every effort is made to protect the confidentiality of information about specific individuals, including performing data swapping procedures on B&B:16/17 data to minimize disclosure risk.

In data swapping, the values of the variables being swapped are exchanged between carefully selected pairs of records: a target record and a donor record. All cases were eligible for swapping. Swapping variables were selected from questionnaire, student record, and administrative record items. Perturbation was carried out under specific targeted, but undisclosed, swap rates.

Because perturbation of the B&B:16/17 data could have changed the relationships between data items, an extensive data quality check was carried out to assess and limit the impact of swapping on these relationships. For example, a set of correlations for a variety of variables was evaluated pre- and posttreatment to verify that the swapping did not greatly affect the associations.

Therefore, the modifications used to reduce the likelihood that any respondent could be identified in the data generally did not affect the overall data quality. The swapping procedures, which the IES Disclosure Review Board reviewed and approved, preserved central tendency estimates but may have resulted in slight increases in nonsampling errors (i.e., variance).

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Appendix A. Acronyms and Abbreviations

Acronym/Abbreviation	Name
ACF	Administration for Children and Families
B&B:16/17	2016/17 Baccalaureate and Beyond Longitudinal Study
BPS	Beginning Postsecondary Students Longitudinal Study
CATI	Computer-Assisted Telephone Interview
CHAID	chi-square automatic interaction detection
CIP	Classification of Instructional Programs
CMS	Case Management System
CPS	Central Processing System
CV	curriculum vitae
DCIs	data collection interviewers
DOB	date of birth
ELSEC	Elementary and secondary
FAFSA	Free Application for Federal Student Aid
FAQs	frequently asked questions
FPC	finite population correction
FSA	Federal Student Aid
GPA	grade point average
IES	Institute of Education Sciences
IMS	Integrated Management System
IPEDS	Integrated Postsecondary Education Data Systems
MVC	Model-View-Controller
NAEYC	National Association for the Education of Young Children
NCES	National Center for Education Statistics
NCOA	National Change of Address
NPSAS:16	2015–16 National Postsecondary Student Aid Study
NSC	National Student Clearinghouse
NSLDS	National Student Loan Data System
O*NET	Occupational Information Network
PLUS	Parent Loan for Undergraduate Students
preK–12	prekindergarten through 12th-grade
PMR	probability minimum replacement
PPS	probability proportional to size
PSU	primary sampling unit
QC	quality circle
QCSs	quality control supervisors
QEs	quality experts
QUEST	quality evaluation system
ROC	Receiver Operating Characteristics
RR2	Response Rate 2
RRI	item response rates

Acronym/Abbreviation	Name
SSL	Secure Sockets Layer
SSN	Social Security number
STEM	science, technology, engineering, and mathematics
SSU	secondary sampling unit
TEACH	Teacher Education Assistance for College and Higher Education
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
WSHD	weighted sequential hot deck

Appendix B. B&B:16/17 Field Test

Contents

PAGE

List of Tables **B-3**

List of Figures **B-6**

Section B.1. Overview of B&B:16/17 Field Test **B-7**
B.1.1 Field Test Study Design B-8

Section B.2. Sampling Design **B-10**
B.2.1 Institution Universe B-10
B.2.2 Student Universe B-12
B.2.3 Identification of B&B-eligible Cohort Members in NPSAS:16 ..... B-13

Section B.3. Survey Data Collection Outcomes, and Evaluation **B-15**
B.3.1 Survey Data Collection Outcomes B-15
B.3.1.1. Locating Results and Survey Response Rates B-15
B.3.1.2. Survey Timing Burden B-22
B.3.1.3. Timing by Section B-24
B.3.1.4. Coder Form Timing B-25
B.3.1.5. Longest Noncoder Form Times B-26
B.3.1.6. Number of Calls to Sample Members B-27
B.3.1.7. Refusal Conversion B-29
B.3.2 Evaluation of the Student Survey B-30
B.3.2.1. Survey Coders B-30
B.3.2.2. Help Text Analysis B-34
B.3.2.3. Item-level Nonresponse B-37
B.3.2.4. Student Reinterview Analysis B-40
B.3.2.5. Marital Status Items B-42
B.3.2.6. Undergraduate Education Items B-42
B.3.2.7. Looked for Work B-44
B.3.2.8. Teaching Certification Items B-46
B.3.2.9. Rent and Car Payment B-47
B.3.2.10. Cognitive and Usability Testing B-50
B.3.2.11. Field Test Experiments B-53
B.3.2.12. Evaluation of Experiment #1: Finding the optimum strategy to minimize sampling design weight variation and nonresponse bias and boost response rates B-53
B.3.2.13. Evaluation of Experiment #2: Survey Design B-57
B.3.3 Data Collection Quality Control B-65

Section B.4. Recommendations for B&B:16/17 Full-scale Study **B-67**
B.4.1 Data Collection and Student Survey Recommendations B-67
B.4.1.1. Data Collection Procedures B-67
B.4.2 Administrative Records Matching Recommendations B-70

References **B-88**

List of Tables

TABLE PAGE

B-1. Number of sampled institutions in the NPSAS:16 field test, by control and level of institution: 2014–15 ..... B-11

B-2. Number and percentage of the NPSAS:16 field test student sample, by control and level of institution and student type: 2014-15 ..... B-13

B-3. Distribution of confirmed B&B:16/17 eligibility status, by nonsurvey sources eligibility status: 2015–16 ..... B-14

B-4. Located and surveyed status, by base-year response status: 2016 ..... B-16

B-5. Located and surveyed status, by data collection group: 2016 ..... B-18

B-6. Located and surveyed completion rates, by contact information updates: 2016 ..... B-19

B-7. Cases requiring intensive tracing procedures, by base-year response status: 2016 ..... B-20

B-8. Located and surveyed rates, by intensive tracing tier: 2016 ..... B-20

B-9. Survey completeness, by survey type and base-year survey response status: 2016 ..... B-21

B-10. Distribution of B&B:16/17 field test survey respondents, by mode of administration: 2016 ..... B-21

B-11. Survey completeness, by data collection phase: 2016 ..... B-22

B-12. Number and percentage of surveys included and excluded from the timing analyses, by survey type: 2016 ..... B-23

B-13. Average time in minutes to complete the full and abbreviated surveys, by mode of administration: 2016 ..... B-24

B-14. Average time, in minutes, to complete the full survey, by mode of administration and survey section: 2016 ..... B-25

B-15. Coder form times observed in the survey, by form and form description: 2016 ..... B-26

B-16. Ten longest median noncoder form times observed in the survey, by form and form description: 2016 ..... B-27

B-17. Average number of calls, by response status: 2016 ..... B-28

B-18. Average number of calls, by base-year response status and data collection group: 2016 ....B-28

B-19. Refusal and refusal conversion rates, by base-year response status and data collection group: 2016....B-29

B-20. Rate of recoded values, by coder type and mode of administration: 2015 ....B-33

B-21. Survey questions with highest rates of help text access, by form and mode of administration: 2016 ....B-35

B-22. Item nonresponse for items with more than 10 percent of data missing, by mode of administration: 2015....B-38

B-23. Reinterview responses, by mode of administration: 2016....B-41

B-24. Reliability estimates for Marital status items, by item and item label: 2016 ....B-42

B-25. Reliability estimates for Undergraduate Education items included in the reinterview, by item and item label: 2016....B-44

B-26. Reliability estimates for Looked for Work items included in the reinterview, by item and item label: 2016....B-46

B-27. Reliability estimates for Teaching Certification items included in the reinterview, by item and item label: 2016....B-47

B-28. Reliability estimates for Rent and Car Payment items included in the reinterview, by item and item label: 2016....B-49

B-29. Participant recruitment for cognitive testing, by recruitment status: 2017 ....B-51

B-30. Participants of cognitive testing, by occupation: 2017....B-52

B-31. Participants of cognitive testing, by device type: 2017 ....B-52

B-32. *t*-test of response rates, by data collection phase and experimental condition: 2017 ....B-54

B-33. *t*-test of response rates, by data collection phase and experimental condition: 2017 ....B-54

B-34. Average absolute relative bias, median absolute relative bias, and percentage of significant deviations, by data collection group: 2016 ....B-57

TABLE PAGE

B-35. Number and percentage of cases assigned to the "go-again" and the "how many" conditions, by final case disposition and loop format: 2016 ....B-59

B-36. Distribution of questions leading into the experimental conditions in the different topical sections, by loop section and loop format: 2016....B-60

B-37. Test of number of events reported in each loop section, by loop section and loop format:2016....B-62

B-38. Cases with available timing information, by loop section and loop format....B-63

B-39. Test of mean time to complete a form in each section, by loop section and loop format (in seconds): 2016....B-64

B-40. Test of item nonresponse rates in each section, by loop section and loop format: 2016....B-65

B-41. Test of breakoff rates in each section, by loop section and loop format: 2016 ....B-65

B-42. Summary list of field test items revised, added to, or removed from the B&B:16/17 full-scale survey, by section and item name: 2016....B-71

B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016....B-74

List of Figures

FIGURE PAGE

B-1. Daily average Mahalanobis distance: 2016 ..... B-56

B-2. Number of occurrences reported in each loop section: 2016 ..... B-61

Section B.1. Overview of B&B:16/17 Field Test

This appendix describes the methods and results for the field test of the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), conducted on behalf of the National Center for Education Statistics (NCES), U.S. Department of Education. The B&B series provides a longitudinal study of the education, work, financial, and personal experiences of individuals who have completed a bachelor's degree at a given point in time. B&B:16/17 is the first follow-up of sample members from the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) who were baccalaureate recipients during the 2014–15 (field test) and 2015–16 (full-scale) academic years. NPSAS serves as a comprehensive, nationwide study of how students and their families pay for postsecondary education, and it includes a nationally representative sample of students pursuing all levels of postsecondary education in the United States.

The B&B:16/17 field test surveyed students who received their bachelor's degree in the 2014–15 academic year. Since graduating from college, members of this B&B cohort have entered the workforce, enrolled in additional postsecondary education, formed families, and started repaying education-related debt. Documenting these choices and pathways, along with individual, institutional, and employment characteristics that may be related to those choices, provides critical information on the costs and benefits of earning a bachelor's degree in today's workforce. B&B also has, as secondary goals, a focus on the continuing education paths of science, technology, engineering, and mathematics (STEM) graduates, and the experiences of those graduates who have begun careers in K-12 education. For the first time in a B&B study, and in response to a recommendation made at a meeting of the B&B:16/17 Technical Review Panel (TRP), pre-kindergarten (pre-K) teachers will be included in the definition of "teachers" studied by B&B:16/17, particularly because some states are instituting universal pre-school programs and raising certification and degree requirements to teach pre-K.

The B&B:16/17 field test took place during July through November 2016. The field test was used to plan, implement, and evaluate methodological procedures, instruments, and systems proposed for use in the full-scale study. These procedures and systems were based on established protocols from previous cycles of B&B,

NPSAS, and other NCES postsecondary education studies. The following sections provide the field test design, results, and recommendations for the full-scale study.

Section 1.1 presents an overview of the B&B field test design including experiments conducted to inform full-scale data collection. Section 2 details the sampling design, including criteria for sampling institutions and students in NPSAS:16, eligibility criteria used for the B&B:16/17 sample, and identification of B&B-eligible respondents. Section 3 describes the details of the data collection outcomes, including evaluation of the survey and results of the data collection design. Lastly, Section 4 gives recommendations for changes to the B&B:16/17 full-scale study.

Tables and figures show the relevant analyses from the field test. Unless otherwise indicated, a criterion probability level of .05 was used for all tests of significance conducted for the B&B:16/17 field test evaluations. Throughout this document, reported numbers of sample members have been rounded to ensure the confidentiality of field test participants. As a result, 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 these rounded numbers.

B.1.1 Field Test Study Design

The B&B:16/17 field test was implemented to fully test all procedures, methods, and systems planned for the B&B:16/17 full-scale study, in a realistic operational environment, prior to full-scale implementation. Specific field test evaluation goals included: improvement of sample member identification processes, gaining response from base-year survey nonrespondents, and identification of items which posed difficulty for respondents in the B&B:16/17 field test interview.

The B&B:16/17 field test included two data collection experiments. The first experiment focused on survey participation and aimed at reducing nonresponse. The second experiment focused on a survey design experiment related to improving the self-reporting accuracy of respondents.

For the first experiment, the sample was split into four groups, which included two groups of NPSAS:16 field test (base-year) survey nonrespondents, randomly-assigned to either an aggressive or default data collection protocol, and two groups of base-year survey respondents, divided into early and late base-year survey respondents. Early respondents participated before outbound calling began; late respondents participated after outbound calling began. Base-year survey late respondents received the default data collection protocol, while base-year survey early respondents received a relaxed data collection protocol. All groups received an

initial e-mail and letter and reminder e-mails and postcards to complete the survey throughout data collection, but the offer of a prepaid incentive, Computer Assisted Telephone Interview (CATI) prompting efforts, and the abbreviated survey differed according to data collection protocol (aggressive, default, or relaxed). During data collection, observational Mahalanobis distances were also calculated to better understand how group data protocols affected individual cases, allowing for identification of sample members most likely to contribute to nonresponse bias.

The second experiment focused on minimizing measurement error within the B&B:16/17 field test survey to further improve data quality. Three sections of the survey contained a set of looping items that were repeated for survey respondents based upon responses to gate items. A set of looping items can be structured in two ways: interleafed, in which the loop items are asked immediately after a gate item and, grouped, in which the loop items are asked after multiple gate items. Survey respondents were randomly assigned into either treatment (grouped format) or control (interleafed format) groups to determine if the grouped loop structure would increase accuracy and respondent efficiency. Further detail and results of the data collection experiments are presented in Section 3.

The B&B:16/17 field test data collection period lasted approximately 17 weeks. Nonresponse conversion included written communication (letters, postcards, and e-mails), telephone follow-ups, and the offer of an abbreviated survey. After data collection was completed, the survey data were processed and compiled into a dataset. B&B staff conducted analyses to identify potential data quality problems, refine implementation procedures, and learn how respondents would answer questions proposed for the full-scale survey.

Section B.2. Sampling Design

The B&B:16/17 field test sample design was comprised of three stages. The first two stages occurred within the NPSAS:16 field test sample: first, the selection of a sample of NPSAS-eligible institutions and second, the selection of a sample of students within institutions. The third stage was the B&B field test sampling which identified both confirmed-from NPSAS:16 and potential baccalaureate recipients who were initially identified by institutions during the second stage of the sample design. The following sections provide an overview of the institution sample and student eligibility requirements for inclusion in NPSAS:16 and the eligibility requirements for the B&B:16 cohort. Lastly, the procedures used to identify B&B-eligible sample members in NPSAS:16 are detailed. For additional information on the NPSAS:16 field test sampling design, see NPSAS:16 Data File Documentation Appendix O (https://nces.ed.gov/pubs2018/2018482_2.pdf).

B.2.1 Institution Universe

The first stage of the NPSAS:16 field test sample was a stratified sample of institutions, with a sampling frame derived from the 2012–13 Integrated Postsecondary Education Data Systems (IPEDS) files. To be eligible for the NPSAS:16 field test, an institution was required to satisfy the following criteria in the 2014–15 academic year:

- Offer an educational program designed for persons who had completed secondary education;
- Offer at least one academic, occupational, or vocational program of study lasting at least 3 months or 300 clock hours;
- Offer courses that were open to more than the employees or members of the company or group (e.g., union) that administered the institution;
- Be located in the 50 states, the District of Columbia, or Puerto Rico;[1]
- Be other than a United States Service Academy; and
- Have a signed Title IV participation agreement with the United States Department of Education.

[1] Institutions in Puerto Rico were not eligible for NPSAS:12 but were eligible for NPSAS:16.

Institutions providing only avocational, recreational, or remedial courses or only in-house courses for their own employees were excluded. The five United States Service Academies (United States Military Academy, United States Naval Academy, United States Air Force Academy, United States Coast Guard Academy, and the United States Merchant Marine Academy) were excluded because of their unique funding/tuition base.

So as not to burden institutions with both field test and full-scale data collections, any large systems (reporters) and individual institutions likely to be selected with certainty (i.e., probability of sample selection approaching one) for the full-scale study were removed from the field test frame. Public 4-year doctorate-granting institutions were designated as "certainty institutions" and automatically included in the full-scale sample, and were therefore excluded from the field test sample. Most field test sample institutions were removed from the NPSAS:16 full-scale frame[2]. Weight adjustments for the full-scale sample institutions were made to ensure representation of the full population of eligible institutions. Table B-1 shows the NPSAS:16 field test institution sample sizes.

Table B-1. Number of sampled institutions in the NPSAS:16 field test, by control and level of institution: 2014–15

Control and level of institution	Sampled institutions
Total	**300**
Public	
Less-than-2-year	10
2-year	10
4-year non-doctorate-granting	110
4-year doctorate-granting	#
Private nonprofit	
Less-than-4-year	10
4-year non-doctorate-granting	130
4-year doctorate-granting	20
Private for-profit	
Less-than-2-year	10
2-year	10
4-year	10

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, 2015–16 National Postsecondary Student Aid Study (NPSAS:16) Field Test.

[2] Some public 4-year primarily subbaccalaureate institutions were included in both the NPSAS:16 field test and full-scale samples because a decision was made to oversample these institutions during the full-scale.

B.2.2 Student Universe

The second stage of the NPSAS:16 field test sample was a stratified systematic sample of individuals within the sampled institutions. The students eligible for inclusion in the NPSAS:16 field test sample were those who were enrolled in a NPSAS-eligible institution in any term or course of instruction between July 1, 2014 and April 30, 2015 for the field test, and between July 1, 2015 and April 30, 2016 for the full-scale, and who were:

- Enrolled in (a) an academic program; (b) at least one course for credit that could be applied toward fulfilling the requirements for an academic degree; (c) exclusively noncredit remedial coursework but who the institution determined were eligible for Title IV aid; or (d) 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 nine student strata in the NPSAS:16 field test: baccalaureate STEM, baccalaureate business, baccalaureate teacher, other baccalaureate, other undergraduate, masters, doctoral STEM, other doctoral, and other graduate. The information needed to identify students within these strata was provided by the sampled institutions. The sample included a large number of potential baccalaureate recipients to provide sufficient sample size for the B&B:16/17 field test. Given that institutions were asked to identify potential bachelor's degree recipients before degree completion, identification of those who would actually complete the degree was expected to be somewhat inaccurate. Therefore, the NPSAS sampling rates for those identified by the sample institutions as potential baccalaureate recipients and other undergraduate students were adjusted to determine the expected sample sizes after accounting for expected false positive rates. For additional information, see appendix O of the NPSAS:16 Data File Documentation (https://nces.ed.gov/pubs2018/2018482_2.pdf). Table B-2 shows the actual student samples for the NPSAS:16 field test.

Table B-2. Number and percentage of the NPSAS:16 field test student sample, by control and level of institution and student type: 2014-15

			Student type					
	Total sample		Bachelor's recipient[1]		Other undergraduate		Graduate[2]	
Control and level of institution	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	**4,540**	**100.0**	**2,410**	**100.0**	**1,660**	**100.0**	**470**	**100.0**
Public								
Less-than-2-year	30	0.6	†	†	30	1.7	†	†
2-year	320	7.1	†	†	320	19.4	†	†
4-year non-doctorate-granting	1,390	30.6	1,160	48.0	180	10.6	60	11.9
4-year doctorate-granting	#	#	#	#	#	#	#	#
Private nonprofit								
Less-than-4-year	150	3.3	†	†	150	9.1	†	†
4-year non-doctorate-granting	1,060	23.4	690	28.8	310	18.7	60	12.1
4-year doctorate-granting	920	20.3	380	15.7	190	11.6	350	74.3
Private for-profit								
Less-than-2-year	180	4.1	†	†	180	11.1	†	†
2-year	110	2.4	†	†	110	6.6	†	†
4-year	380	8.3	180	7.5	190	11.2	10	1.7

† Not applicable.
# Rounds to zero.
[1] Includes all baccalaureate recipients.
[2] Includes master's, doctoral, and other graduate students.
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, 2015–16 National Postsecondary Student Aid Study (NPSAS:16) Field Test.

B.2.3 Identification of B&B-eligible Cohort Members in NPSAS:16

The field test sample for B&B:16/17 was comprised of all respondents from the NPSAS:16 field test who completed requirements for their bachelor's degree at any time between the July 1, 2014, and June 30, 2015 academic year, and received or expected to receive their degree by June 30, 2016. In addition, all potentially-eligible NPSAS:16 field test nonrespondents (i.e. those who were listed on enrollment lists as potential baccalaureate recipients by their NPSAS institution but did not complete a NPSAS:16 student survey to confirm their status) were included in the B&B:16/17 field test sample.

The NPSAS:16 field test yielded 1,300 respondents who indicated they were or would be bachelor's degree recipients. All of these students were included in the B&B:16/17 field test sample. Additionally, the NPSAS:16 field test included approximately 800 nonrespondents who were identified as potential bachelor's degree recipients according to the initial classification by the NPSAS sample institution at the time of student sampling. All of these students were included in B&B:16/17 field test for a total sample size of 2,100.

Following the B&B:16/17 field test data collection, the value of the NPSAS survey and non-survey sources for determining B&B cohort eligibility were assessed by concordance analysis. In the B&B:16/17 field test, 95 percent of sample members who confirmed B&B eligibility in the NPSAS:16 field test survey also confirmed being eligible in the B&B:16/17 field test survey. In the B&B:16/17 field test, 24 percent of sample members who were NPSAS nonrespondents confirmed in the B&B survey that they were not eligible for B&B. The nonsurvey sources were the NPSAS institution enrollment lists[3], and data obtained from any administrative data sources to which the sample member matched (including Student Records during NPSAS:16 field test, and the National Student Clearinghouse (NSC) and the National Student Loan Data System (NSLDS)) during B&B:16/17 field test. Table B-3 shows the percentages of B&B:16/17 field test sample members whose B&B:16/17 eligibility had been confirmed either as eligible or ineligible by nonsurvey sources eligibility status.

Table B-3. Distribution of confirmed B&B:16/17 eligibility status, by nonsurvey sources eligibility status: 2015–16

	Nonsurvey sources[1] eligibility status	
Confirmed B&B:16/17 eligibility status	**Identified as ineligible**	**Identified as eligible**
Ineligible	48.1	8.4
Eligible	51.9	91.6

[1]Nonsurvey sources include NPSAS:16 field test enrollment lists and student records, National Student Clearinghouse and National Student Loan Data System data.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

These results indicated that the non-survey sources should be used in the full-scale study to identify B&B-eligible students prior to sampling for the B&B:16/17 full-scale study, but should not be used to exclude any potentially eligible B&B students with certainty.

[3] In the NPSAS:16 field test, eighty percent of students initially flagged as potential baccalaureates were confirmed in the NPSAS:16 interview to have met requirements to be eligible for B&B:16/17.

Section B.3. Survey Data Collection Outcomes, and Evaluation

This section describes the data collection, outcomes, and evaluations conducted by staff to assess the B&B:16/17 field test and to inform the full-scale data collection.

B.3.1 Survey Data Collection Outcomes

B&B:16/17 staff assessed field test data collection outcomes by reviewing the number of field test sample members located and surveyed, the time required to complete the survey, the time spent contacting and surveying sample members, and conversion of survey refusals.

B.3.1.1. Locating Results and Survey Response Rates

A sample member was considered located if he or she met any of the following criteria: ineligible; completed the survey or verified his or her identity via the survey; was assigned any final status via telephone efforts (e.g., unavailable for duration of study, incarcerated, deceased, etc.); or was a pending or final refusal. Additionally, if, through telephone efforts, an answering machine confirming the sample member's name is reached, or a household member of the sample member confirms the contacting information, then the sample member is considered located. When intensive tracing efforts were able to confirm contacting information for a sample member, then the case is also considered located. Surveyed response rates include eligible sample members who completed at least a partial survey. A partial survey response counts if a respondent provided information for key data elements, such as postbaccalaureate enrollment and employment, but did not complete the entire survey.

As shown in table B-4, staff located 86 percent (1,800) of B&B:16/17 field test sample members, and 63 percent (1,130) of those located responded to the survey. Of the 1,960 total eligible sample members, 58 percent responded to the survey. Base-year nonrespondents were equally likely to be located for the B&B:16/17 field test survey as base-year respondents. Base-year respondents had a located rate of 86 percent, compared with 86 percent of base-year nonrespondents; there was no significant difference between these groups ($\chi 2 = 0.082$, $p < .78$). However, 73 percent of all eligible base-year respondents completed the B&B:16/17 survey, compared with only 31 percent of base-year nonrespondents ($\chi 2 = 318.1$, $p < .001$).

Table B-4. Located and surveyed status, by base-year response status: 2016

	Sample		Located[1]		Located eligible		Surveyed[2]			
Base-year response status	Total	Eligible	Number	Percent of total	Number	Percent of eligible	Number	Percent of located	Percent of located eligible[3]	Percent of eligible
Total	**2,100**	**1,960**	**1,800**	**85.9**	**1,660**	**84.8**	**1,130**	**62.7**	**68.0**	**57.7**
NPSAS:16 respondent	1,300	1,250	1,120	85.8	1,070	85.2	910	81.6	85.3	72.6
NPSAS:16 nonrespondent	800	710	690	86.2	600	84.3	220	32.0	37.0	31.2

[1] Sample members are counted as located if they were ever located at some point during data collection.
[2] Surveyed includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[3] Percent of located eligible excludes located cases found to be ineligible or deceased.
NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Implementation of the field test data collection design included placing the B&B-eligible sample into four groups based on their base-year NPSAS:16 field test survey response status:

- Group 1: Randomly-selected half of the base-year nonrespondents
- Group 2: Remaining half of the base-year nonrespondents
- Group 3: Base-year late respondents (responded after the first 3 weeks of NPSAS:16 field test survey data collection effort)
- Group 4: Base-year early respondents (responded in the first 3 weeks of the NPSAS:16 field test survey data collection effort)

Group 1 consisted of base-year nonrespondents who received an aggressive protocol that included an early abbreviated survey offer, telephone contact two weeks after the start of data collection, and frequent e-mail contacts. Group 2, also base-year nonrespondents, received a default protocol that included standard telephone efforts and the abbreviated survey offered during the last month of data collection. Group 3, base-year late respondents (who required at least one telephone call to prompt them to participate in the base-year survey), also received the default protocol. Group 4, consisting of base-year early respondents (who participated in the NPSAS:16 field test without telephone contact), received a relaxed protocol that had no telephone contact and no abbreviated survey offer.

Table B-5 depicts located and surveyed status by data collection group. Among the groups, group 1 (base-year nonrespondents) had a located rate of 87 percent and, of those, roughly 38 percent completed the survey. Eighty-five percent of group 2 (base-year nonrespondents) were located with almost 26 percent of those responding to the survey. Group 3, base-year late respondents, had a located rate of 94 percent, and of those located, 72 percent responded. Group 4, base-year survey early respondents, had a located rate of 79 percent, with 92 percent of those responding to the survey. Since Group 4 did not receive any telephone efforts, the located rate for that group is lower than other groups.

Table B-5. Located and surveyed status, by data collection group: 2016

Data collection group	Sample		Located[1]		Located eligible		Surveyed[2]			
	Total	Eligible	Number	Percent of total	Number	Percent of eligible	Number	Percent of located	Percent of located eligible[3]	Percent of eligible
Total	**2,100**	**1,960**	**1,800**	**85.9**	**1,660**	**84.8**	**1,130**	**62.7**	**68.0**	**57.7**
Group 1 (base-year nonrespondents, aggressive protocol)	400	360	350	87.2	310	85.8	130	38.2	43.3	37.2
Group 2 (base-year nonrespondents, default protocol)	400	350	340	85.2	290	82.8	90	25.6	30.2	25.0
Group 3 (base-year respondents, default protocol)	600	580	570	94.0	550	93.7	410	71.7	74.5	69.8
Group 4 (base-year respondents, relaxed protocol)	700	670	550	78.6	520	77.8	500	92.0	96.5	75.1

[1] Sample members are counted as located if they were ever located at some point during data collection. Telephone efforts were not made with Group 4 cases, resulting in a lower locate rate for this group.
[2] Surveyed count includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
[3] Percent of located eligible excludes located cases found to be ineligible or deceased.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Located rates by contact information update. B&B:16/17 field test sample members were asked to update their contact information prior to the start of data collection. As shown in table B-6, contact information updates were received for 180 sample members in response to the initial contact letter mailing and e-mail to prospective respondents and parents. If an update was received through the web or through the form sent to parents, the sample member was located during data collection 96 percent of the time and surveyed 93 percent of the time.

Table B-6. Located and surveyed completion rates, by contact information updates: 2016

		Located[1]		Surveyed[2]	
Contact information update	Total	Number	Percent	Number	Percent
Update provided	180	170	95.5	170	93.3
No update provided	1,780	1,490	83.9	960	54.1

[1] Sample members are counted as located if they were ever located at some point during data collection.
[2] Surveyed count includes eligible students who met the criteria for qualification as a survey respondent, which required completing at least a partial survey.
NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Cases requiring intensive tracing. Overall, 3 percent of the 2,100 B&B:16/17 field test sample members required intensive tracing. During intensive tracing, tracers utilized all previously obtained contact information to make tracing decisions about each case and included additional data sources. Intensive tracing (TOPS) was divided into two tiers: TOPS-1 and TOPS-2 (Tracing Operations). The first tier (TOPS-1) searched for sample members in consumer databases by matching SSNs. Database batch searches included LexisNexis, Experian, and Accurint. If this search resulted in a new telephone lead, the case was immediately returned to CATI for follow-up by DCIs, minimizing the time that cases were unavailable for outbound dialing. If the search resulted in a new address only, tracers used directory assistance searches to locate a telephone number for the contact.

All cases not located during TOPS-1 were sent to the more intensive second tier of intensive tracing TOPS-2. In TOPS-2, tracers searched for additional sample member information or other contacts that could provide a potential lead to the sample member. Tracing staff conducted a thorough review of each case and determined the appropriate next steps based on the leads developed from prior tracing and contacting activities. Tracers utilized consumer databases, such as those used in TOPS-1, but targeted their search based on data from other sources. Once located, cases were contacted and asked to complete the survey. Cases who could not be located after exhausting all leads were finalized as unlocatable.

As shown in table B-7, 8 percent of the base-year survey nonrespondents required intensive tracing during the B&B:16/17 field test, while no intensive tracing was needed for base-year survey respondents.

Table B-7. Cases requiring intensive tracing procedures, by base-year response status: 2016

Base-year response status	Total sample	Cases requiring intensive tracing[1]	
		Number	Percent
Total	**2,100**	**70**	**3.1**
NPSAS:16 field test respondent	1,300	#	#
NPSAS:16 field test nonrespondent	800	70	8.1

Rounds to zero.
[1] Cases requiring intensive tracing count excludes cases initiated to intensive tracing that were not traced, but includes cases for which intensive tracing work began but work was stopped.
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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Among the cases assigned to intensive tracing, 91 percent were located. Of the cases located through intensive tracing, 17 percent completed the B&B:16/17 field test survey. Table B-8 shows intensive tracing outcomes.

Table B-8. Located and surveyed rates, by intensive tracing tier: 2016

Intensive tracing tier	Total cases[2]	Located in TOPS		Surveyed[1]	
		Number	Percent of total cases	Number	Percent of located in TOPS
Total	**70**	**60**	**90.8**	**10**	**16.9**
TOPS-1	70	60	90.8	10	16.9
TOPS-2[3]	#	#	#	#	#

Rounds to zero.
[1] Surveyed includes eligible students who met the criteria for qualification as a77 survey respondent, which required completing at least a partial survey.
[2] Total cases exclude cases initiated to intensive tracing that were not traced.
[3] TOPS-2 cases are a subset of TOPS-1 cases that required additional intensive tracing efforts after TOPS-1; therefore, the total is not the sum of TOPS-1 and TOPS-2.
NOTE: Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding. TOPS = tracing operations.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Completed surveys by survey type and base-year survey response status. Of the 1,130 completed surveys in the B&B:16/17 field test, 92 percent were full surveys, 4 percent were abbreviated surveys, and 4 percent were classified as final partial surveys. In the B&B:16/17 field test sample members, only sample members in groups 1-3 (base-year survey nonrespondents and base-year survey late respondents) were offered the abbreviated 10-minute survey. Of the 880 sample members offered the abbreviated survey, 150 (17 percent) completed it. Table B-9

provides complete detail on completed B&B:16/17 field test surveys by base-year survey response status and by survey type.

Table B-9. Survey completeness, by survey type and base-year survey response status: 2016

		Base-year survey response status			
		Respondents		Nonrespondents	
Survey type	Total	Number	Percent	Number	Percent
Total	**1,130**	**910**	**100.0**	**220**	**100.0**
Full survey	920	830	91.6	90	40.0
Abbreviated survey	150	40	4.3	110	48.6
Partial Survey	60	40	4.1	30	11.4

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Completed surveys by mode of administration. B&B:16/17 field test surveys were completed by web or by telephone. For analyses, the self-administered web completion mode was separated into those surveys completed on a mobile device (e.g. smartphone or tablet), referred to hereafter as "web mobile" mode, and those surveys completed on a nonmobile device, referred to hereafter as "web nonmobile" mode.

As illustrated in table B-10, 18 percent of surveys were completed by web nonmobile with telephone contact, 45 percent were completed by web nonmobile without telephone contact, 29 percent were completed by web mobile and 9 percent were completed by telephone.

Table B-10. Distribution of B&B:16/17 field test survey respondents, by mode of administration: 2016

Mode of administration	Number	Percent
Web surveys	1,030	91.4
Web nonmobile with telephone contacts	200	17.5
Web nonmobile without telephone contacts	510	45.2
Web mobile	320	28.7
Telephone	100	8.6

NOTE: Includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Completed surveys by data collection phase. The B&B field test included three distinct phases of data collection: the early completion phase (first four weeks of data collection), the production phase (second 10 weeks of data collection), and the

nonresponse conversion phase (final four weeks of data collection). The majority of the B&B:16/17 field test surveys (61 percent) were completed during the early completion phase, as shown in table B-11. The remaining were completed during the production phase (30 percent) or nonresponse conversion phase (9 percent).

The early completion phase of data collection yielded a 31 percent response rate, with 660 completed surveys out of 2,100 eligible cases. The next phase of data collection, the production phase, yielded a 22 percent response rate, with 320 completed surveys out of the remaining 1,440 cases, and the nonresponse conversion phase yielded a 9 percent response rate, with 100 completed surveys out of the remaining 1,130 eligible cases.

Table B-11. Survey completeness, by data collection phase: 2016

Data collection phase	Total eligible cases in phase	Completed surveys			
		Number	Percent of cases in phase	Percent of total eligible	Percent of surveys
Total	**2,100**	**1,070**	**50.9**	**50.9**	**100.0**
Early completion phase	2,100	660	31.3	31.3	61.4
Production phase	1,440	320	21.8	15.0	29.5
Nonresponse conversion phase	1,130	100	8.6	4.6	9.1

NOTE: Includes eligible sample members. Partial surveys were not included because partially completed surveys could be resumed by sample members through the end of data collection. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.1.2. Survey Timing Burden

To assess the burden associated with completing the survey, the time required for each respondent to complete the B&B:16/17 field test survey was collected and analyzed. Survey length was expected to vary by whether or not the sample member was a teacher and path taken through the survey.

To calculate the time required to complete the survey, a time stamp was embedded on each web screen (or form). When a form was first loaded, the clock time on either the respondent's computer or mobile device, or a phone interviewer's computer, was recorded to mark a *start time*; and when the *Next* button on the form was clicked, an end timer recorded the clock time to get the *end time*. The time for each form was calculated by subtracting the *start time* from the *end time*. The total survey time was calculated by summing the times recorded for each form.

Overall, 1,130 full, abbreviated, and partial surveys were completed in the B&B:16/17 field test. Of the 1,130 total surveys, 400 surveys (36 percent) were excluded from the timing report. Those excluded include partial surveys, those that

were completed in more than one session, and "total time" outliers[4]. After the exclusions, 730 cases, 64 percent of the total completed surveys, were included in the timing analyses reported here. Table B-12 displays the number of cases considered for the timing analyses.

Table B-12. Number and percentage of surveys included and excluded from the timing analyses, by survey type: 2016

Survey type	Number of cases	Percent
Total	**1,130**	**100.0**
Total surveys included in timing report	730	64.2
Completed full survey	610	53.6
Completed abbreviated survey	120	10.6
Surveys excluded from timing report	400	35.8
Partial surveys	60	5.5
Total survey time outliers	10	0.4
Completed in more than one session	340	29.9

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

On average, the full B&B:16/17 field test survey took 40.3 minutes to complete. Each survey was completed either by CATI or by self-administered web survey. As stated previously, the self-administered web completion mode was categorized as either those surveys completed on a mobile device (e.g. smartphone or tablet), referred to as "web mobile" mode, or surveys completed on a nonmobile device, referred to as "web nonmobile" mode. Web mobile surveys took significantly less time to complete, 36.8 minutes, than CATI interviews, which took 62.3 minutes ($t(602) = 9.33, p < .001$). Web nonmobile surveys also took significantly less time to complete at 39.5 minutes compared to CATI interviews ($t(602) = 9.04, p < .001$). There was no statistically significant difference between web nonmobile and web mobile mode completion times. The longer time to complete CATI interviews was expected since survey questions in this mode were read aloud to respondents.

As indicated by its name, the "abbreviated survey" was a shorter version of the full survey and included a subset of sections: Eligibility, Postbaccalaureate Employment, Locating, and Incentives. The abbreviated survey took 20.5 minutes, on average, to complete. Web mobile abbreviated surveys took significantly less time to complete at

[4] To detect total time outliers, the distribution of all interview times (highly right-skewed) was first normalized using a Box-Cox power transformation (Box & Cox, 1964). Cases were then removed from the overall total using an interquartile range formula (adopted from Tukey, 1977) with a multiplier of 1.5. Cases were excluded as outlier if total time > 75th percentile + (1.5 * interquartile range), or if total time < 25th percentile – (1.5 * interquartile range).

16.1 minutes compared to CATI abbreviated interviews, which took 29.9 minutes ($t(117) = 5.62, p < .001$). Web nonmobile abbreviated surveys took 17.5 minutes; also significantly less time to complete compared to CATI abbreviated interviews ($t(117) = 5.69, p <. 001$). Just as with the full survey, there was no statistically significant difference between web nonmobile and web mobile modes for the abbreviated survey. Table B-13 displays the average times by modes of administration for the full and abbreviated surveys.

Table B-13. Average time in minutes to complete the full and abbreviated surveys, by mode of administration: 2016

			Mode of administration					
	Overall		Web nonmobile		Web mobile		Telephone	
Completed surveys	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Full	610	40.3	430	39.5	140	36.8	40	62.3
Abbreviated	120	20.5	60	17.5	30	16.1	30	29.9

NOTE: The timing analysis included only cases that completed the survey in one session; partial surveys and outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.1.3. Timing by Section

The B&B:16/17 field test survey was administered in sections, with each section containing questions relating to a general content area such as financial aid or employment. The full survey contained the following sections: Eligibility, Undergraduate Education, Postbaccalaureate Education/Training, Financial Aid, Postbaccalaureate Employment, Teaching, Background, Locating, and Incentives. Overall, respondents took the longest time to complete the Postbaccalaureate Employment section, 14.5 minutes. This was expected due to the focus on postbaccalaureate employment outcomes in B&B studies and the "looping" nature of the section. Respondents were asked to report on all employers since completing a bachelor's degree and then asked details about each job at each reported employer. Table B-14 displays the time it took to complete each section by mode of administration.

Table B-14. Average time, in minutes, to complete the full survey, by mode of administration and survey section: 2016

	Overall		Mode of administration					
			Web nonmobile		Web mobile		CATI	
Survey section	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time	Number of cases	Average time
Total	**610**	**40.3**	**430**	**39.5**	**140**	**36.8**	**40**	**62.3**
Eligibility	610	1.3	430	1.2	140	1.3	40	2.0
Undergraduate education	610	6.1	430	5.8	140	5.8	40	10.1
Postbaccalaureate education/ training	610	2.3	430	2.3	140	1.8	40	3.5
Financial aid	610	1.3	430	1.4	140	1.1	40	1.9
Postbaccalaureate employment	610	14.5	430	14.4	140	12.2	40	23.5
Teaching	610	1.5	430	1.4	140	1.6	40	2.3
Background	610	8.7	430	8.5	140	8.3	40	12.2
Locating	600	3.2	430	3.1	140	3.5	40	4.5
Incentives	600	1.5	430	1.4	130	1.3	40	2.4

NOTE: The timing analysis included only cases that completed the survey in one session; partial surveys and outliers were excluded. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.1.4. Coder Form Timing

Timing to administer each form in the survey, was also recorded and analyzed. Historically, special attention has been paid to the timing of specific forms in the survey called "coders" (see section 3.2.1). These coders are linked to a database which allows respondents to enter a text string into a coder form and perform a key word search on elements within the database. In previous studies, these coders required a respondent or interviewer to: 1) enter a text string into the form, 2) press "Enter" to conduct a keyword search on the underlying database, and 3) select a response from the returned list of possible matches. Each coder in this configuration has typically taken respondents and DCIs about a minute to complete. In the B&B:16/17 field test, all coders, with the exception of the occupation coder, were modified from the traditional layout and functionality into a "predictive search" coder. These updated coders were adapted for use in the following forms: postsecondary institution, major or field of study, pre-K through 12th grade school, country of birth, and ZIP code. The updated predictive search functionality automatically returned results from the database while the respondent actively typed a text string in real time. The timing to administer these new predictive coders decreased when compared to the traditional coder format, taking nearly half the time. For example, the traditional, postsecondary institution coder in NPSAS:16 full-scale survey took 40.2 seconds to complete, compared to the predictive postsecondary institution coder in B&B:16/17 field test which took 17.8 seconds.

The timing for the coders ranged from 55.5 seconds for the occupation coder (BB17DOCC01) to 7.6 seconds for the country of birth coder (BB17FORIGIN). As previously indicated, the occupation coder still used the traditional search format, while the other coders were updated to use the new predictive search functionality. Conversely, the timing for the country of birth coder may be attributed to the fact that there is a relatively limited number of world countries (in comparison, for example, with possible majors) and respondents were easily able to select the country where they were born. Table B-15 displays the times of each coder in the survey.

Table B-15. Coder form times observed in the survey, by form and form description: 2016

Form	Form description	Number of cases	Median (seconds)
BB17DOCC01	Title and job duties	1,000	55.5
BB17BNPMAJPT	Major or field of study 1 for BA degree at NPSAS	970	28.6
BB17EJBSPT01	Name of pre-K through 12th grade school	200	24.1
BB17CPTMAJ01	Post-BA primary major or field of study	250	23.6
BB17BSCHPT01	Name(s) of other undergraduate institution(s)	440	17.8
BB17BNPOMAJPT	Original declared major for BA degree at NPSAS	280	17.6
BB17DJBZIPEX01	ZIP coder	1,020	17.5
BB17BNPMJ2PT	Major or field of study 2 for BA degree at NPSAS	120	16.4
BB17CSCHPT01	Name(s) of post-BA institution(s) attended	260	14.4
BB17FORIGIN	Country of birth	70	7.6

NOTE: Forms with fewer than 25 observations were excluded. Sample sizes rounded to the nearest 10.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.1.5. Longest Noncoder Form Times

Table B-16 displays the times of the ten longest non-coder forms in the full survey. *Factors that influenced decision to pursue teaching* (BB17ETHNKINFL) took 29.5 seconds, *financial costs as a result of education* (BB17FAFFCOST) took 28.4 seconds, *factors that influenced choice of field of graduate-level study* (BB17CFACS) took 28.1 seconds, *important factors when choosing a job* (BB17DIMPBEN) took 26 seconds, and *activities while not working and not enrolled* (BB17DNW) took 21.5 seconds. The longer timing on these forms was expected due in part to their grid-like nature, which displays several items and scaled response options. In addition, these forms required respondents to critically think about the influence and impact of different postbaccalaureate decisions, which was more cognitively burdensome on respondents and is reflected in the timing.

Not surprisingly, the remaining five items that took respondents the longest to answer, also were clearly more cognitively burdensome than other items in the survey. Four of the items relied on the respondents to recall specific information that may have taken place months prior to completing the survey. For example, the form,

GRE score (BB17CGRESCN) took respondents 27.8 seconds. This form required respondents to provide the scores for each section of the GRE, an entrance exam taken for graduate school. The item, *New salary amount 1* (BB17DEMPS101), asked respondents to report the amount of a change in salary, and the date it changed, and took 21.4 seconds to complete.

Months worked at employer since completing BA degree (BB17DWKMON01) took 21.8 seconds and *Months enrolled for post-BA degree/certificate* (BB17CENMON01) took 21.4 seconds. Both were calendar forms that required respondents to recall the months worked or enrolled since July 2014. Finally, the item, *Financial literacy: Understanding of inflation (*BB17FFIN1YR), asked respondents to answer a basic math question involving dollar amounts and the impact of inflation across time. Given the "test-like" nature of this question, it took respondents 25.2 seconds to complete.

Table B-16. Ten longest median noncoder form times observed in the survey, by form and form description: 2016

Form	Form description	Type	Number of cases	Median (seconds)
BB17ETHNKINFL	Factors that influenced decision to pursue/not pursue teaching	Scaled grid	180	29.5
BB17FAFFCOST	Financial costs as a result of education	Yes/No grid	920	28.4
BB17CFACS	Factors that influenced choice of field of graduate-level study	Scaled grid	240	28.1
BB17CGRESCN	GRE score (if taken after August 1, 2011--scoring format changed)	Textbox	120	27.8
BB17DIMPBEN	Important factors when choosing a job	Scaled grid	930	26.0
BB17FFIN1YR	Financial literacy: Understanding of inflation	Radio buttons	920	25.2
BB17DWKMON01	Months worked at employer since completing BA degree	Months form	1,010	21.8
BB17DNW	Activities while not working and not enrolled	Checkbox list	930	21.5
BB17CENMON01	Months enrolled for post-BA degree/certificate	Months form	250	21.4
BB17DEMPS101	New salary amount 1	Textbox/radio	1,030	21.4

NOTE: Forms with fewer than 25 observations were excluded. Sample sizes rounded to the nearest 10.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.1.6. Number of Calls to Sample Members

The average number of calls required per sample member to complete a survey varied by B&B:16/17 field test survey response status, base-year survey response status, and survey mode (web or telephone). Overall, an average of 9 calls were made per sample member during the B&B:16/17 field test data collection. As shown in table B-17, base-year survey respondents required an average of 4 calls per case, compared to 15 calls per case for base-year survey nonrespondents ($t(838) = 17.55$, $p < .001$). Web respondents required an average of three calls per case prior to survey completion and telephone respondents required an average of 10 calls. However, when excluding web respondents who required no calls, such as cases completed during the early completion phase prior to telephone efforts, web

respondents required an average of 10 calls, the same as their telephone interview counterparts. This difference was not statistically significant.

Table B-17. Average number of calls, by response status: 2016

Response status	Number of eligible cases	Number of calls	Average number of calls
Total	**1,960**	**16,700**	**8.5**
Respondent[1]	1,130	3,930	3.5
Web surveys	1,030	2,940	2.8
Excluding those with no calls	280	2,940	10.4
Telephone interviews	100	990	10.2
Nonrespondent and exclusions	830	12,770	15.4

[1] Respondent count includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Among experimental groups, group 1 (aggressive protocol) sample members received an average of 17 calls, while group 2 and 3 (default protocol) sample members required an average of 17 and 8 calls, respectively. Group 4 (relaxed protocol) received no outbound telephone efforts, but cases may have received calls in response to incoming calls, messages, or e-mails. Table B-18 shows the average number of calls by base-year response status and data collection group.

Table B-18. Average number of calls, by base-year response status and data collection group: 2016

Base-year response status and data collection group	Number of eligible cases	Number of calls	Average number of calls
Total	**1,960**	**16,700**	**8.5**
Base-year response status			
NPSAS:16 field test respondent[1]	1,250	4,620	3.7
NPSAS:16 field test nonrespondent	710	12,090	17.1
Data collection group			
Group 1	360	6,200	17.3
Group 2	350	5,890	16.9
Group 3	580	4,510	7.7
Group 4	670	100	0.2

[1] Respondent count includes eligible sample members who met the criteria for qualification as a survey respondent, which required completing at least a partial 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.1.7. Refusal Conversion

B&B:16/17 staff covered refusal conversion techniques during field test telephone interviewer training, with monitoring and supervisory staff providing additional support for DCIs throughout data collection. In bi-weekly Quality Circle meetings, interviewers were encouraged to share their experiences and effective strategies for converting refusals. Interviewers who displayed aptitude for successfully converting refusals were trained in refusal conversion and assigned to a separate queue of sample members who had refused to complete the survey. Overall, 10 percent of eligible cases ever refused, as shown in table B-19. Of those who refused, 16 percent of cases were subsequently converted to complete a survey.

Twenty percent of eligible Group 1 (base-year survey nonrespondents receiving the aggressive protocol) sample members ever refused, and of those, 20 percent eventually completed the survey. Among Group 2 sample members (base-year survey nonrespondents receiving a default protocol), 19 percent ever refused, and of those, 6 percent completed the survey. Group 3 sample members (base-year survey late respondents receiving the default protocol) refused at a rate of 8 percent and, of those, 19 percent were eventually interviewed. Less than 1 percent of base-year survey early respondents (Group 4), who did not receive any telephone efforts, refused, and 50 percent of those did eventually complete the survey. There were no differences in refusal conversion protocols across groups.

Table B-19. Refusal and refusal conversion rates, by base-year response status and data collection group: 2016

		Ever refused interview[1]		Interviewed, given refusal		
Base-year response status and data collection group	**Total eligible[2]**	**Number**	**Percent of total eligible**	**Number**	**Percent of refused**	**Percent of total eligible**
Total	**1,960**	**190**	**9.5**	**30**	**15.5**	**1.5**
Base-year response status						
NPSAS:16 field test respondents	1,250	50	4.1	10	21.6	0.9
NPSAS:16 field test nonrespondent	710	140	19.3	20	13.2	2.5
Data collection group						
Group 1 (base-year nonrespondents, aggressive protocol)	360	70	19.6	10	20.0	3.9
Group 2 (base-year nonrespondents, default protocol)	350	70	19.0	#	6.1	1.1
Group 3 (base-year respondents, default protocol)	580	50	8.1	10	19.1	1.5
Group 4 (base-year respondents, relaxed protocol)	670	#	0.6	#	50.0	0.3

Rounds to zero.
[1] Ever refused survey count includes eligible students who ever refused or had a gatekeeper (parent or other contact) refuse on their behalf.
[2] Count includes eligible students who met the criteria for qualification as a survey respondent, which required completing at least a partial 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.2 Evaluation of the Student Survey

This section will describe the various analyses conducted to assess the quality of coders in the B&B:16/17 field test survey, to enumerate the use of help text in the survey by respondents and data collection interviewers (DCIs), to measure the level of item nonresponse, and to determine the overall quality of the survey. .

B.3.2.1. Survey Coders

The B&B:16/17 field test survey used assisted coding systems, or "coders," to provide standardized codes on text string responses. Predictive text string coders were used for postsecondary institutions (including the NPSAS institution and other postsecondary institutions attended), major or field of study, pre-K through 12th grade school where taught, country of birth, and ZIP code. For predictive text string coders, respondents entered a text string into a textbox. As respondents typed, a list of possible matches from which they could select the best option was returned from the underlying database. The occupation coder used a previous version of a coder that did not use a predictive text string function. Instead, for the occupation coder, respondents entered full text strings for their job title and job duties and then hit "Enter" to run a keyword search on their entries within the underlying database. It took, on average, 55.5 seconds to code an occupation using this format (see table B-15), which is nearly twice as long as it took to code a major using the predictive text string coder format in the B&B:16/17 field test survey. In an effort to reduce respondent burden, the occupation coder will be updated to a predictive text string coder for the full-scale survey.

To assess the quality and usability of these coding systems, as they were in the field test, an analysis of recoding rates for majors/fields of study and occupation are provided as well as upcoding rates for all four coding systems. Following are descriptions of the individual coding systems and the underlying databases for each.

- Postsecondary institution: The postsecondary institution coder was populated with the set of institutions contained in the 2013–14 Integrated Postsecondary Education Data System (IPEDS), developed by NCES (https://nces.ed.gov/ipeds/). This form coded any postsecondary institutions the respondent attended, other than the NPSAS institution. For any institutions not listed in the database, the coder saved the text string entered by the respondent, and respondents were asked to provide the control (e.g., public or private) and level (e.g., 4-year or 2-year) of the institution.
- Major/field of study: The major coder was developed using the 2010 Classification of Institutional Programs (CIP) taxonomy, also developed by

NCES (https://nces.ed.gov/ipeds/cipcode). For any majors or fields of study not found in the CIP database, the coder asked respondents to select a general area of study and a specific discipline within the selected area.

- Elementary/secondary school: The elementary and secondary school (ELSEC) coder was developed using the 2011–12 Private School Universe Survey for private K – 12 schools (https://nces.ed.gov/surveys/pss/) and the 2011–12 Common Core of Data for public K – 12 schools (https://nces.ed.gov/ccd/). Then, given B&B's first-time inclusion of pre-K teachers in the B&B:16/17 sample, the Administration for Children and Families (ACF) Head Start database (https://eclkc.ohs.acf.hhs.gov/hslc/data/center-data) and the National Association for the Education of Young Children (NAEYC) listings of early childhood education programs (http://www.naeyc.org) were systematically de-duplicated[5] and added to the ELSEC coder database. For schools not identified within the ELSEC coder, the coder retained the entered text string and asked respondents to supply the school type, district or county name, and the highest and lowest grade levels at the school.
- Occupation: The occupation coder was built from the Occupational Information Network Online (O*NET OnLine) database (http://onetonline.org), Version 19.0. For any occupations not listed in the database, the coder asked respondents to provide a general area, specific area, and finally a detailed classification for the occupation.

Recoding. Twenty-five percent of the major and occupation codes were randomly selected from survey data for recoding, a process in which expert coding staff review the codes chosen in the survey and determine whether a different selection more accurately describes the text string provided by the respondent. Overall, for the major code review, expert coding staff agreed with the response chosen in the survey 90 percent of the time. For the occupation code review, expert coding staff agreed with 88 percent of responses chosen in the survey.

While the occupation coder showed no significant differences in recode rates across modes of administration, statistically significant differences in the recode rates by mode did occur between web nonmobile and web mobile modes of administration in the major coder. Expert coders agreed with major codes chosen by web

[5] The process of de-duplicating early childhood education programs began by identifying any records that matched on school name or school identifier. Then, the available data in each record for a program was compared to the other records for that program. If any data points (e.g., highest and lowest grades, school district) did not match, the program in question was researched to determine the correct data points. Incorrect records were removed. If all records for a program matched on all available data points, the record with the most recent and complete data for the school was kept.

nonmobile respondents 95 percent of the time; whereas, they agreed with major codes chosen by web mobile respondents 79 percent of the time ($\chi 2$ (1, N = 397) = 22.30, p < .001). Conversely, expert coders disagreed with major codes chosen by web nonmobile mode respondents only 5 percent of the time, but they disagreed with web mobile respondents 18 percent of the time ($\chi 2$ (1, N = 397) = 19.44, p < .001). Also notable is the difference in rate at which expert coders agreed with web mobile respondents—79 percent—and telephone respondents—92 percent. The lower rate of agreement between expert coders and web mobile respondents may be due to the smaller screen size on mobile devices, particularly when lists of options that required scrolling appeared on the screen. However, given the small total number of cases administered the major coder (N = 140) and decreased variance, it is unsurprising that the discrepancy between expert coders and respondents' major coding across web mobile and telephone modes of administration was not statistically significant.

Table B-20 shows the rate of recoded values—recoded same as original, recoded to a different value, or text string too vague to code—chosen by the expert coding staff for the major and occupation coders in the survey.

Table B-20. Rate of recoded values, by coder type and mode of administration: 2015

	Mode of administration											
	Recoded same as original				Recoded to a different value				Text string too vague to code			
Coder type	Overall	Web nonmobile	Web mobile	Telephone	Overall	Web nonmobile	Web mobile	Telephone	Overall	Web nonmobile	Web mobile	Telephone
Major	90.3	94.7	79.1	92.0	8.5	4.6	18.3	8.0	1.2	0.7	2.6	†
Occupation	88.0	86.6	89.5	93.0	9.1	10.3	7.0	7.0	2.9	3.1	3.5	†

† Not applicable

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.2.2. Help Text Analysis

During the B&B:16/17 field test student survey, respondents and DCIs were able to click a help button provided on each form to obtain question-specific help text. Additionally, in some questions, specific terms or phrases that were defined in the help text were hyperlinked directly to the help text. Whether accessed through the help button or through a hyperlink, each question had unique help text. The help text provided definitions of key terms and phrases used in question wording and response options, and provided any other explanations thought to help clarify and standardize meaning for respondents. The number of times that respondents or interviewers accessed the help text relative to the number of times questions were administered determined the rate of help text access. Across all questions that were administered to at least 10 respondents, help text was accessed at a rate less than one percent (0.25 percent). The question-level rate of help text access was analyzed both overall and by mode of survey administration to identify questions that may have been problematic for users. Table B-21 shows the survey questions administered to at least 10 respondents with the highest rates of help text access overall and by mode of administration.

Table B-21. Survey questions with highest rates of help text access, by form and mode of administration: 2016

				Mode of administration					
		Overall		Web nonmobile		Web mobile		Telephone	
Form	Form label	Number administered to	Percent of help text access	Number administered to	Percent of help text access	Number administered to	Percent of help text access	Number administered to	Percent of help text access
BB17AFINCON	Shares financial responsibilities with household adult	560	4.1	380	4.8	160	3.1	20	†
BB17AFINWHO	Adult in household who shares financial responsibilities	380	1.6	260	1.9	100	1.0	10	†
BB17BINTERN	Participate in internship, co-op, or practicum prior to completing bachelor's degree	900	2.2	580	0.3	280	0.4	50	34.7
BB17CPSTGRD	Attended additional degree or certificate program since completing bachelor's degree	920	1.2	600	1.2	280	0.7	50	4.1
BB17IFDPAYMT	Status of federal student loans in repayment	450	1.3	290	2.1	150	†	20	†
BB17IFDNOPAY	Reason federal loans are not in repayment	200	8.0	130	5.4	60	9.1	20	25.0
BB17ELNFRGV	Aware of teacher loan forgiveness programs	920	5.4	600	7.4	280	2.2	50	†
BB17ETCHGRT	Aware of TEACH Grant Program	920	5.2	600	6.6	280	2.5	50	4.1
BB17FHOMVAL	Current value of primary residence	160	1.3	100	2.0	50	†	10	†
BB17FCARAMT	Monthly vehicle payment amount	350	1.1	220	0.9	120	1.6	20	†
BB17FRETIR	Has retirement savings account	920	3.0	600	3.5	280	0.7	50	10.2
BB17FENGL	English is native language	920	1.1	600	1.5	280	0.4	50	†

† Not applicable

NOTE: This table only includes 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Twelve survey questions that were administered to at least 10 respondents had an overall help text access rate of 1 percent or greater. *Reason federal loans are not in repayment* (BB17IFDNOPAY) had the highest help text access rate at 8.0 percent. This question asked respondents to indicate the reason they were not repaying their federal student loans (e.g. deferring payment). DCIs accessed this help text at a significantly higher rate (25.0 percent) than web nonmobile respondents (5.4 percent), (χ^2 (1, N = 146) = 7.87, p < .01). This difference was expected as DCIs are trained to access help text when respondents express confusion or have additional questions on particular survey items.

Two questions that asked respondents about their awareness of particular financial aid programs for teachers had the next highest help text rates. *Aware of teacher loan forgiveness programs* (BB17ELNFRGV) had an overall help text rate of 5.4 percent. The help text access rate for this question was significantly higher on web nonmobile mode (7.4 percent) than web mobile mode (2.2 percent) (χ2 (1, N = 873) = 9.62, p < .01), respectively). *Aware of TEACH Grant Program* (BB17ETCHGRT) had an overall help text rate of 5.2 percent. The help text access rate was significantly higher on web nonmobile mode (6.6 percent) than web mobile mode (2.5 percent) (χ2 (1, N = 873) = 6.19, p < .05). Respondents' unfamiliarity with these loan programs may have contributed to the higher overall rates of help text access while the higher rates of access in web nonmobile mode compared to web mobile mode may be attributed to the greater ease with which respondents can find and read the help text window on a larger screen.

Has retirement savings account (BB17FRETIR) had an overall help text access rate of 3.0 percent. DCIs accessed help text for this question at a significantly higher rate (10.2 percent) than web nonmobile respondents (3.5 percent) and web mobile respondents (0.7 percent) (χ^2 (1, N = 630) = 182.29, p < .001 and χ^2 (1, N = 324) = 93.92, p < .001, respectively). Help text access for BB17FRETIR was also significantly higher in web nonmobile mode (3.5 percent) than in web mobile mode (0.7 percent), (χ^2 (1, N = 630) = 182.29, p < .001).

Participate in internship, co-op, or practicum prior to completing bachelor's degree (BB17BINTERN) had an overall help text access rate of 2.2 percent. DCIs accessed this help text at a significantly higher rate (34.7 percent) than web nonmobile respondents (0.3 percent) and web mobile respondents (0.4 percent), (χ^2 (1, N = 630) = 182.29, p < .001 and χ^2 (1, N = 324) = 93.92, p < .001, respectively). *Attended additional degree or certificate program since completing bachelor's degree* (BB17CPSTGRD) had an overall help text access rate of 1.2 percent. Help text for this question was accessed significantly more by DCIs (4.1 percent) than web mobile respondents (0.7 percent), (χ^2 (1, N = 327) = 3.90, p < .05).

The remaining six questions had less than 5 percent overall help text access rates and no significant differences in help text access across modes: *Shares financial responsibilities with household adult* (BB17AFINCON), *Adult in household who shares financial responsibilities* (BB17AFINWHO), *Status of federal student loans in repayment* (BB17IFDPAYMT), *Current value of primary residence* (BB17FHOMVAL), *Monthly vehicle payment amount* (BB17FCARAMT), and *English is native language* (BB17FENGL).

B.3.2.3. Item-level Nonresponse

The rate of nonresponse for individual items in the student survey is used to identify potentially burdensome survey items and to better understand the experiences of respondents completing the survey. In the B&B:16/17 field test student survey, total nonresponse rates were calculated for items administered to at least 10 respondents. The item-level nonresponse analysis showed that 52 items had more than 10 percent missing data. Of these 52 items, 19 were contained on four survey forms: *GRE scores, if taken after August 1, 2011* (BB17CGRE), *MCAT scores, if taken after March 1, 2015* (BB17CMCATN), *MCAT scores, if taken before March 1, 2015* (BB17CMCATO), and *Reasons left teaching* (BB17ETCHLEV). The items within each of these four forms possessed the same item-level nonresponse, and thus each set of items, by form, was collapsed into one row in table B-22, and hereafter will be discussed as a single item in this analysis. Table B-22 summarizes the item-level nonresponse for items administered to at least 10 respondents with a rate of more than 10 percent missing data.

Table B-22. Item nonresponse for items with more than 10 percent of data missing, by mode of administration: 2015

		Overall		Mode of administration					
				Web nonmobile		Telephone		Web mobile	
Item	Item label	Number administered to	Percent missing	Number administered to	Percent missing	Number administered to	Percent missing	Number administered to	Percent missing
BB17CGRE	GRE scores, if taken after August 1, 2011	110	33.6	90	26	#	50	20	58
BB17CMCATN	MCAT scores, if taken after March 1, 2015	20	26.7	10	25	#	100	#	†
BB17CMCATO	MCAT scores, if taken before March 1, 2015	20	26.3	20	25	†	†	#	33
BB17IPVINT	Private student loan interest rate	150	15.8	90	10	10	33	50	23
BB17IUGPVEST	Undergraduate private loan estimate	20	14.3	10	15	#	†	10	14
BB17EPXSSC	Praxis score	160	51.3	80	45	10	80	70	57
BB17ETCHAPP	Applied for a teaching position	220	19.0	130	19	10	13	80	20
BB17ETCHLEV	Reasons left teaching	30	24.2	30	23	#	†	10	33
BB17FLANGS	Best-known second language	650	14.6	410	13	40	21	200	16
BB17FVLAMT	Hours volunteered: time frame	420	13.7	270	10	20	6	120	23
BB17FINCOM	Respondent's income in 2015	920	11.1	600	9	50	12	280	15
BB17FCARAMT2	Previous car loan or lease amount	50	12.5	30	11	#	†	20	17
BB17FSPCOL	Spouse in college or graduate school	210	35.1	130	36	10	†	60	39
BB17FSPLN	Spouse took out student loans	210	36.6	130	37	10	11	60	39
BB17FSPLV	Spouse's education level	250	29.4	150	31	10	†	80	32
BB17FINCSP	Spouse's income in 2015	270	17.2	170	15	20	13	90	22
BB17FINSRA	Spouse's income ranges in 2015	20	11.1	10	†	#	100	10	20
BB17DEMHMY10101	Employer 1, job 1: average hours per week change 1: date	190	11.3	130	11	50	15	10	†
BB17DEMHA20101	Employer 1, job 1: average hours per week change 2: amount	80	15.9	60	14	20	24	10	17
BB17DEMHMY20101	Employer 1, job 1: average hours per week change 2: date	80	18.3	60	17	20	24	10	17
BB17DEMHA30101	Employer 1, job 1: average hours per week change 3: amount	40	10.5	30	15	10	†	#	†
BB17DEMHMY30101	Employer 1, job 1: average hours per week change 3: date	40	13.2	30	19	10	†	#	†
BB17DEMSMY10101	Employer 1, job 1: pay change 1: date	320	11.2	220	9	90	17	20	7
BB17DEMSA20101	Employer 1, job 1: pay change 2: amount	110	15.0	80	16	30	7	10	29
BB17DEMSMY20101	Employer 1, job 1: pay change 2: date	110	18.6	80	22	30	11	10	14
BB17DEMPST20101	Employer 1, job 1: pay change 2: time frame	110	15.9	80	18	30	7	10	29
BB17DEMSMY30101	Employer 1, job 1: pay change 3: date	50	13.3	30	3	10	14	#	†
BB17DEMSMY40101	Employer 1, job 1: pay change 4: date	30	13.8	20	20	10	†	#	†
BB17DEMPST40101	Employer 1, job 1: pay change 4: time frame	30	13.8	20	15	10	13	#	†
BB17ESCODPT0101	Employer 1, job 1: teacher, elementary/ secondary school number	140	16.1	90	13	50	20	10	25
BB17DEDIND01	Employer 1: level of education industry	260	29.8	160	33	10	36	90	24
BB17DEMPZIPEX01	Employer 1: ZIP code	850	21.0	550	15	260	35	40	11

† Not applicable
# Rounds to zero.
NOTE: This table only includes 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Several items with item-level nonresponse greater than 10 percent focused on respondents' employment history. Seven items were contained on four survey forms that asked respondents for details on pay changes in their first job at their first employer. Recall of changes to average hours worked and pay changes with this level of detail may require a heavier cognitive load for some respondents. These items include the new pay amount, the time frame of the payment (e.g. per year), and the date for each change in pay (see items BB17DEMSMY10101—BB17DEMPST40101 in table B-22). Nonresponse rates for these seven items ranged from 11 to 19 percent. Five items were contained on three survey forms that asked respondents for details on changes to the average hours worked in their first job at their first employer. These items include the new number of hours and the date for each change in hours (see items BB17DEMHMY10101 – BB17DEMHMY30101 in table B-22). Nonresponse rates for these items ranged from 11 to 18 percent. Item *Employer 1: level of education industry* (BB17DEDIND01), which asked respondents who indicated education as their employer's industry to provide the education level of their employer, had a nonresponse rate of 30 percent. Item *Employer 1: ZIP code* (BB17DEMPZIPEX01), a standardized ZIP code that is saved when respondents selected the ZIP code for the primary location where they worked within the coder, had a nonresponse rate of 21 percent.

Four items with item-level nonresponse greater than 10 percent asked participants to provide scores from professional exams taken. The professional exam items included *GRE scores, if taken after August 1, 2011* (BB17CGRE), *MCAT scores, if taken after March 1, 2015* (BB17CMCATN), *MCAT scores, if taken before March 1, 2015* (BB17CMCATO), and *Praxis score* (BB17EPXSSC). Nonresponse rates for these four items ranged from 26 to 51 percent. Items BB17CGRE, BB17CMCATN, and BB17CMCATO asked for the scores for each section of the exam and BB17EPXSSC asked for the total score. This level of detail may have been difficult for respondents to recall resulting in relatively high nonresponse rates.

Five of the 32 items asked respondents to report information about their spouse's education and finances. These items included *Spouse in college or graduate school* (BB17FSPCOL)*, Spouse took out student loans* (BB17FSPLN)*, Spouse's education level* (BB17FSPLV)*, Spouse's income in 2015* (BB17FINCSP)*,* and *Spouse's income ranges in 2015* (BB17FINSRA). Nonresponse rates for these items ranged from 11 to 37 percent.

Two items with nonresponse rates greater than 10 percent were related to teaching. Item *Applied for a teaching position* (BB17ETCHAPP) had a nonresponse rate of 19 percent, and *Reasons left teaching* (BB17ETCHLEV) had a nonresponse rate of 24 percent.

Two items with nonresponse rates greater than 10 percent focused on undergraduate private student loans: *Private student loan interest rate* (BB17IPVINT) had a nonresponse rate of 16 percent, and *Undergraduate private loan estimate* (BB17IUGPVEST) had a nonresponse rate of 14 percent. The four remaining items with high nonresponse rates focused on the respondent's personal life: *Best-known second language* (BB17FLANGS), *Hours volunteered: time frame* (BB17FVLAMT), *Respondent's income in 2015* (BB17FINCOM) and *Previous car loan or lease amount* (BB17FCARAMT2). Nonresponse rates for these four items ranged from 11 to 15 percent.

Item-level nonresponse rates were also examined by mode of administration for the 32 survey items with more than 10 percent missing data. Statistically significant higher rates of nonresponse were observed in web mobile mode than in web nonmobile mode for *GRE scores, if taken after August 1, 2011* (BB17CGRE) (χ^2 (1, N = 222) = 6.89, p < .01), *Hours volunteered: time frame* (BB17FVLAMT) (χ^2 (1, N = 796) = 9.97, p < .01), and *Respondent's income in 2015* (BB17FINCOM) (χ^2 (1, N = 1746) = 5.52, p < .05). Significantly higher rates of nonresponse were observed in web mobile mode than in telephone mode for *Respondent's income in 2015* (BB17FINCOM) (χ^2 (1, N = 146) = 4.24, p < .05), and *Spouse took out student loans* (BB17FSPLN) (χ^2 (1, N = 184) = 5.19, p < .05). Significantly higher rates of nonresponse were observed in web nonmobile mode than in telephone mode for *Spouse in college or graduate school* (BB17FSPCOL) (χ^2 (1, N = 282) = 3.85, p < .05) and *Spouse's education level* (BB17FSPLV) (χ^2 (1, N = 334) = 5.00, p < .05). Higher rates of nonresponse were observed in web nonmobile mode than in web mobile mode for *Employer 1: ZIP code* (BB17DEMPZIPEX01) (χ^2 (1, N = 1614) = 33.98. p < .001). Significantly higher rates of nonresponse were observed in telephone mode than in web nonmobile mode for *Spouse's income ranges in 2015* (BB17FINSRA) (χ^2 (1, N = 26) = 12.48, p < .001); however, this item was only administered to two telephone respondents.

B.3.2.4. Student Reinterview Analysis

An important element of evaluating data quality in survey research is the reliability of self-reported responses to survey questions. One method of measuring reliability involves temporal stability, the consistency of study members' responses over time. To evaluate the reliability of responses collected in the B&B:16/17 field test survey, a reinterview containing 142 items (27 forms) selected from the full (or main) survey was developed. Specific items believed to have relatively high levels of temporal stability were selected for inclusion in the reinterview. Some items were also selected if they were part of an instrument experiment in the B&B:16/17 field test main survey or were new to the B&B study and not previously tested for reliability.

All sample members who completed the full survey were given the option to self-select into the reinterview sample. Sample members who completed the abbreviated survey were not given the option of completing the reinterview since a number of reinterview items were not included in the abbreviated survey. Of the 920 respondents who completed the full survey, 600 agreed to complete the reinterview (65 percent). Each member of the reinterview sample was contacted 2–4 weeks after completing the full survey and asked to participate in a 5 to 10-minute reliability reinterview. A total of 380 respondents (a response rate of 63 percent) completed the reinterview. On average, the reinterview took 4.4 minutes to complete.

Reinterview sample members were prompted to complete the reinterview in the same mode in which they completed the full survey, either by CATI, web nonmobile, or web mobile mode.[6] Table B-23 shows the distribution of reinterview responses by mode.

Table B-23. Reinterview responses, by mode of administration: 2016

Mode of administration	Number	Percent
Total	**380**	**100.0**
Web nonmobile	230	61.3
Web mobile	100	25.2
Telephone	50	13.5

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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Tables B-24 through B-28 present reliability estimates for the items included in the reinterview. For each item, the number of cases, percent agreement between the full survey and reinterview, and relational statistic are shown. For discrete items, percent agreement was based on the extent to which responses to the full survey matched exactly to the reinterview responses. For continuous items, responses were considered to be in agreement if the full survey responses were within one standard deviation of the reinterview responses. Not all questions were applicable to all respondents. Because of this, answer comparisons were only conducted for items where at least ten respondents provided answers in both the full survey and the reinterview.

In addition to the percent agreement between the full survey and the reinterview, the relational statistics provide additional information to quantify the strength of association between the pairs of items being compared; for each statistic, 1.00 was

[6] Of the 380 completed reinterviews, 25 percent completed in a different mode from their full interview completion mode.

indicative of a perfect correlation (i.e., an exact match between the item on the initial survey and the same item on the reinterview for all respondents). Cramer's *V* was used as the relational statistic for items with discrete, unordered response categories (e.g., yes/no). The Pearson product-moment correlation coefficient (*r*) was used for items yielding interval responses (e.g., amount of home rent or mortgage).

Across all content areas of the reinterview, estimates reveal good reliability of the survey items tested. Ninety-five percent of the variables for which agreement statistics were calculated (135 out of 142) had agreement rates over 80 percent; and 72 percent of the variables (102 out of 142) had agreement rates over 90 percent. Conversely, only 7 reinterview items produced an agreement rate between 70 and 80 percent. Overall, the reinterview analysis indicate the survey yields data of high quality, with consistently reliable results. The following sections describe the reliability of individual reinterview items by topic.

B.3.2.5. Marital Status Items

As shown in table B-24, there were two marital status items included in the reinterview, both of which had strong rates of agreement. *Current marital status* (BB17AMARR), a radio button list that asked respondents to identify their marital status as of the day they took the survey (e.g., single or married), had an especially high agreement rate of 97 percent. Given that some time elapsed between the survey and the reinterview, this would be an expected agreement rate. The other item, *Marital status date* (BB17AMARSMY), had separate month and year dropdown options from which the respondent selected his or her date of marriage, separation, or divorce. The agreement rate for BB17AMARSMY was 93 percent. Recall for some respondents may have been affected because they were asked for both the month and year of when the change to their current marital status occurred.

Table B-24. Reliability estimates for Marital status items, by item and item label: 2016

Item	Item label	Number of cases	Percent agreement	Relational statistic
BB17AMARR	Current marital status	380	96.8	0.88
BB17AMARSMY	Marital status date	100	92.7	0.94

NOTE: The relational statistic presented is Cramer's V, unless otherwise footnoted. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.2.6. Undergraduate Education Items

Table B-25 shows undergraduate education items in ascending order of agreement. These items focused on both academic experiences and extracurricular activities at

their base-year postsecondary institution (indicated as "at NPSAS" in item labels). The agreement rate for the reinterview undergraduate education items ranged from 71 to 100 percent. Two questions that prompted numeric response, *Number of other pre-bachelor's schools* (BB17BUGNUM) and *GPA at NPSAS* (BB17BGPATYP) had exceptional agreement rates of 98 percent. Alternatively, respondents who did not provide a numeric GPA response received the question *Estimate of GPA at NPSAS* (BB17BGPAEST), where they could select among a range of responses from "Mostly A's" to "Mostly D's or below." This question had a 71 percent agreement range. However, only 20 reinterview respondents received this item and because they had not answered the previous point estimate item (BB17GPATYP), it may have been that they were not certain of their GPA to begin with.

Three of the undergraduate education reinterview questions were structured with multiple response items prompted from a single question-wording stem. One such question asked respondents to report on their extracurricular activities prior to completing their bachelor's degree. This question was set up as a grid with the question stem appearing as, "When you were working on your bachelor's degree at [NPSAS institution], were you involved in…" and then displaying a list of items with a yes/no response option beside them. The list of extracurricular items included the following: fraternity/sorority, clubs/groups, intermural/recreational sports, and intercollegiate sports. These items ranged from an agreement rate of 84 percent, *extracurricular activities at NPSAS: fraternity/sorority* (BB17BFRAT), to 90 percent, *Extracurricular activities at NPSAS: intercollegiate sports* (BB17BVAR).

Another undergraduate education reinterview question asked about respondent participation in certain job-oriented activities prior to completing the bachelor's degree requirements. This question was also set up as a yes/no grid asking the question stem, "Prior to completing your bachelor's degree, did you participate in any of the following?" with the following items: paid internship, unpaid internship, co-operative experience, and practicum. These items ranged from an agreement rate of 87 percent, *academic activities prior to earning BA degree: unpaid internship* (BB17BUNPAID), to 93 percent, *academic activities prior to earning BA degree: paid internship* (BB17BPINTERN). This variation in agreement rates may indicate that respondents have better recollection of internship experiences when receiving compensation.

The question on academic experiences at the NPSAS institution produced high agreement rates. The question stem asked, "While enrolled at [NPSAS institution] for your bachelor's degree, did you…" then displayed the following items: withdraw from a course, receive an incomplete grade, repeat a course for a higher grade, ever placed on academic probation, ever placed on Dean's list, and graduated with

academic honors. These items ranged from an agreement rate of 92 percent, *withdrew from course* (BB17BEXPWD), to 98 percent, *get placed on academic probation* (BB17BEXPAP).

Table B-25. Reliability estimates for Undergraduate Education items included in the reinterview, by item and item label: 2016

Item	Item label	Number of cases	Percent agreement	Relational statistic
BB17BGPAEST	Estimate of GPA at NPSAS	20	70.6	0.76
BB17BFRAT	Extracurricular activities at NPSAS: fraternity/sorority	380	83.8	0.80
BB17BUNPAID	Academic activities prior to earning BA degree: unpaid internship	370	86.5	0.68
BB17BCLB	Extracurricular activities at NPSAS: clubs/groups	380	88.6	0.69
BB17BREC	Extracurricular activities at NPSAS: intramural/recreational sports	380	88.9	0.77
BB17BOTHSCH	Attended other postsecondary schools prior to bachelor's at NPSAS	380	89.7	0.79
BB17BCOOP	Academic activities prior to earning BA degree: co-operative experience	360	89.8	0.67
BB17BVAR	Extracurricular activities at NPSAS: Intercollegiate sports	380	90.0	0.79
BB17BPRACT	Academic activities prior to earning BA degree: practicum	370	90.1	0.79
BB17BEXPWD	Academic experiences at NPSAS: withdrew from course	370	92.0	0.72
BB17BPINTERN	Academic activities prior to earning BA degree: paid internship	370	93.0	0.81
BB17BGPA	Cumulative GPA at NPSAS	70	94.6	0.75
BB17BEXPRPT	Academic experiences at NPSAS: repeated course for higher grade	370	94.7	0.84
BB17BEXPIN	Academic experiences at NPSAS: received an incomplete grade	370	95.2	0.68
BB17BEXPDL	Academic experiences at NPSAS: placed on Dean's List	370	95.2	0.86
BB17BEXPGH	Academic experiences at NPSAS: graduated with academic honors	370	95.5	0.91
BB17BEXPAP	Academic experiences at NPSAS: placed on academic probation	370	97.6	0.76
BB17BUGNUM	Number of other pre-bachelor's schools (experiment)	350	98.0	0.77
BB17BGPATYP	GPA at NPSAS measured on 4.00 scale	380	98.2	0.71
BB17BGPANO	Cumulative GPA at NPSAS: no GPA offered	360	100.0	†

† Not available. Statistics were not computed because the reinterview responses had less than two nonmissing levels.
NOTE: The relational statistic presented is Cramer's *V*, unless otherwise footnoted. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.2.7. Looked for Work

Table B-26 shows reinterview items related to looking for work, with the agreement rates displayed in ascending order. These items ranged from 71 to 100 percent agreement. All items resulted from one main question that captured time that the respondent spent looking for work at a monthly level. The question asked, "At any point after [the date completed bachelor's degree], which months were you actively looking for employment?" This question had individual month-level items formatted as a calendar form. All months between the dates a respondent completed their bachelor's degree requirements and the last month a respondent reported working were displayed for selection.

Given the monthly-level structure of this reinterview question, there is a wider spread with the agreement scale and lower relational statistic values. To illustrate, consider that the agreement rates for summer months were as follows: *June 2015* (71

percent), *May 2015* (73 percent), and *July 2015* (74 percent) with low correlation values (0.41, and 0.45). Yet, *January 2015* produced an agreement rate of 94 percent and correlation of 0.74. The range of agreement rates and relational statistic values indicate overall reliable data, with some noise around months that are likely to be the anchor points of change (i.e. leaving college, first job after graduation, etc.). It is important to note that this particular monthly-level employment question, "looking for employment" has slightly more ambiguous definitional boundaries than other comparable monthly-level questions in the field test survey, such as asking respondents for actual months employed at each employer. Aside from these considerations, the reliability estimates demonstrate that quality monthly-level data is possible to obtain.

Table B-26. Reliability estimates for Looked for Work items included in the reinterview, by item and item label: 2016

Item	Item label	Number of cases	Percent agreement	Relational statistic
BB17DLK15JN	Looking for work: June 2015	270	70.7	0.41
BB17DLK15MY	Looking for work: May 2015	270	72.6	0.45
BB17DLK15JL	Looking for work: July 2015	270	74.1	0.45
BB17DEVERLK	Looked for work since completing bachelor's degree	170	76.1	0.55
BB17DLK15AG	Looking for work: August 2015	270	77.4	0.49
BB17DLK15SP	Looking for work: September 2015	270	80.1	0.53
BB17DLK16MR	Looking for work: March 2016	270	80.8	0.53
BB17DLK16MY	Looking for work: May 2016	270	81.6	0.57
BB17DLK16JA	Looking for work: January 2016	270	82.3	0.55
BB17DLK16AP	Looking for work: April 2016	270	82.7	0.58
BB17DLK16JL	Looking for work: July 2016	270	82.7	0.56
BB17DLK15OC	Looking for work: October 2015	270	83.5	0.57
BB17DLK15DC	Looking for work: December 2015	270	83.8	0.59
BB17DLK16FB	Looking for work: February 2016	270	83.8	0.59
BB17DLK16JN	Looking for work: June 2016	270	84.2	0.59
BB17DLK15NV	Looking for work: November 2015	270	84.6	0.61
BB17DLK15MR	Looking for work: March 2015	270	91.7	0.59
BB17DLK15AP	Looking for work: April 2015	270	92.5	0.66
BB17DLK14DC	Looking for work: December 2014	270	92.9	0.65
BB17DLK15FB	Looking for work: February 2015	270	93.6	0.70
BB17DLK15JA	Looking for work: January 2015	270	94.0	0.74
BB17DLK16AG	Looking for work: August 2016	270	95.9	0.65
BB17DLKNOLK	Never looked for work	270	97.0	0.19
BB17DLK14SP	Looking for work: September 2014	270	98.5	0.49
BB17DLK14OC	Looking for work: October 2014	270	98.9	0.57
BB17DLK16SP	Looking for work: September 2016	270	98.9	0.40
BB17DLK14NV	Looking for work: November 2014	270	99.3	0.70
BB17DLK16OC	Looking for work: October 2016	270	99.3	†
BB17DLK14AG	Looking for work: August 2014	270	99.6	0.81
BB17DLK14JL	Looking for work: July 2014	270	100.0	†
BB17DLK16NV	Looking for work: November 2016	270	100.0	†

† Not available. Statistics were not computed because the reinterview responses had less than two nonmissing levels.
NOTE: The relational statistic presented is Cramer's *V*, unless otherwise footnoted. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.2.8. Teaching Certification Items

Table B-27 shows the reliability estimates in ascending order for certified to teach and subjects in which certified to teach items. All the teaching items in the reinterview were administered only to teachers who selected a teaching occupation in the full survey; therefore, there are fewer cases[7] to calculate reliability estimates for

[7] Cramer's *V* will be more likely to not detect a statistical difference whereas the Pearson product-moment correlation should be less affected.

this content area. The item agreement rates range from a low of 85 to a high of 100 percent.

The reinterview item with highest number of cases (150) in which to calculate estimates was, *currently certified, in any state, as pre-K through 12 teacher* (BB17ECURCRT), which still produced an agreement rate of 86 percent. There was an exceptional 100 percent agreement for the 90 cases that received the *Subject areas certified to teach: math or computer science (*BB17ECMATH). The agreement rate for *Subjects areas certified to teach: general secondary education* (BB17ECGENB) was at 85 percent. These differences across reliability estimates by subject area could be caused by changes in subjects taught, perceptions of the subject areas' definitions, or changes in active certification between the completion of the full survey and the reinterview.

Table B-27. Reliability estimates for Teaching Certification items included in the reinterview, by item and item label: 2016

Item	Item label	Number of cases	Percent agreement	Relational statistic
BB17ECGENB	Subject areas certified to teach: general secondary education	90	84.7	0.40
BB17ECURCRT	Currently certified, in any state, as pre-K through 12 teacher	150	85.9	0.69
BB17EMISC	Subject areas certified to teach: miscellaneous	20	86.4	†
BB17ECOTHER	Subject areas certified to teach: other	90	87.1	0.71
BB17ECESL	Subject areas certified to teach: English as a second language	20	90.9	0.74
BB17ECVOCTC	Subject areas certified to teach: vocational/career/technical	20	90.9	0.61
BB17ECOTH	Subject areas certified to teach: any other	20	90.9	0.45
BB17ECGENA	Subject areas certified to teach: elementary education	90	92.9	0.85
BB17ECART	Subject areas certified to teach: arts and music	20	95.5	0.90
BB17ECENGL	Subject areas certified to teach: English or language arts	20	95.5	0.89
BB17ECSPCED	Subject areas certified to teach: special education	90	96.5	0.90
BB17EPREK	Subject areas certified to teach: early childhood education (Pre-K)	90	97.7	0.94
BB17ECSCIEN	Subject areas certified to teach: natural sciences	90	97.7	0.74
BB17ECSOSCI	Subject areas certified to teach: social sciences	90	98.8	0.94
BB17ECMATH	Subject areas certified to teach: math or computer science	90	100.0	1.00
BB17ECFLNG	Subject areas certified to teach: foreign language	20	100.0	1.00
BB17ECHELTH	Subject areas certified to teach: health or physical education	20	100.0	1.00

† Not available.
NOTE: The relational statistic presented is Cramer's *V*, unless otherwise footnoted. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.2.9. Rent and Car Payment

Finally, table B-28 shows the reliability estimates in ascending order for reinterview items pertaining to home mortgage or rent payments and car payments. The structure of the questions was modified prior to the B&B:16/17 field test survey in order to gather monthly-level data on respondents' financial situations after completing their bachelor's degree requirements. Many of the reinterview items were

at the monthly level. The agreement rate across these items ranged from a low of 78 percent to a high of 100 percent.

Items not specific to a month or monetary amount had the highest agreement rates, likely due to the relative certainty of these statuses overtime. For example, for the 380 respondents who answered *Residence: owned home outright* (BB17FOWNHM), there was a high agreement rate of 98 percent. Alternatively, some of the lower agreement rates included reported dates on which respondents began making current payments on rent or mortgages, or car loans and leases. For example, *Date began paying currently monthly rent or mortgage* (BB17FHOMEMY) had an agreement rate of 78 percent for the 240 cases who received the item. Despite the potential complexity of obtaining monthly-level data on key financial situations, the reliability estimates are still within a high range.

Table B-28. Reliability estimates for Rent and Car Payment items included in the reinterview, by item and item label: 2016

Item	Item label	Number of cases	Percent agreement	Relational statistic
BB17FHOMEMY	Date began paying currently monthly rent or mortgage	240	77.9	0.81
BB17FHOMPRV	Had rent or mortgage payment during previous months	170	81.3	0.63
BB17FHOM16JN	Rent or mortgage payment: June 2016	70	81.9	0.44
BB17FCARMY	Date began paying current car loan or lease	130	83.5	0.70
BB17FHOM16MY	Rent or mortgage payment: May 2016	70	86.1	0.72
BB17FHOM15SP	Rent or mortgage payment: September 2015	70	86.1	0.56
BB17FHOM16AP	Rent or mortgage payment: April 2016	70	87.5	0.75
BB17FHOM15JN	Rent or mortgage payment: June 2015	70	87.5	0.70
BB17FHOM15AG	Rent or mortgage payment: August 2015	70	87.5	0.54
BB17FHOM16MR	Rent or mortgage payment: March 2016	70	88.9	0.77
BB17FHOM16JL	Rent or mortgage payment: July 2016	70	88.9	0.39
BB17FHOM16JA	Rent or mortgage payment: January 2016	70	88.9	0.75
BB17FHOM16FB	Rent or mortgage payment: February 2016	70	88.9	0.77
BB17FCARPRV	Had car loan or lease in during previous months	80	90.1	0.69
BB17FHOM15OC	Rent or mortgage payment: October 2015	70	90.3	0.71
BB17FHOM15MY	Rent or mortgage payment: May 2015	70	90.3	0.79
BB17FRENT	Residence: paid rent	380	90.4	0.81
BB17FNONE	Residence: did not pay mortgage or rent	380	90.9	0.77
BB17FCARAMT[1]	Current car loan or lease amount	130	91.5	0.84
BB17FHOM15DC	Rent or mortgage payment: December 2015	70	91.7	0.79
BB17FCAR16MY	Car loan or lease: May 2016	10	91.7	0.67
BB17FCAR16MR	Car loan or lease: March 2016	10	91.7	0.77
BB17FCAR16JN	Car loan or lease: June 2016	10	91.7	†
BB17FCAR16JL	Car loan or lease: July 2016	10	91.7	†
BB17FCAR16JA	Car loan or lease: January 2016	10	91.7	0.67
BB17FCAR16FB	Car loan or lease: February 2016	10	91.7	0.67
BB17FCAR16AP	Car loan or lease: April 2016	10	91.7	0.67
BB17FCAR15SP	Car loan or lease: September 2015	10	91.7	0.85
BB17FCAR15OC	Car loan or lease: October 2015	10	91.7	0.85
BB17FCAR15NV	Car loan or lease: November 2015	10	91.7	0.82
BB17FCAR15JL	Car loan or lease: July 2015	10	91.7	0.82
BB17FCAR15JA	Car loan or lease: January 2015	10	91.7	0.84
BB17FCAR15FB	Car loan or lease: February 2015	10	91.7	0.84
BB17FCAR15DC	Car loan or lease: December 2015	10	91.7	0.67
BB17FCAR15AG	Car loan or lease: August 2015	10	91.7	0.85
BB17FCAR14SP	Car loan or lease: September 2014	10	91.7	†
BB17FCAR14DC	Car loan or lease: December 2014	10	91.7	0.84
BB17FHOM15NV	Rent or mortgage payment: November 2015	70	93.1	0.82
BB17FMTGAMT[1]	Current monthly rent or mortgage payment	240	93.8	0.86
BB17FHOM16AG	Rent or mortgage payment: August 2016	70	94.4	†
BB17FHOM15JL	Rent or mortgage payment: July 2015	70	94.4	0.79
BB17FCARLOAN	Had car loan or lease	370	94.7	0.89
BB17FMORTG	Residence: paid mortgage	380	96.3	0.85
BB17FHOM15AP	Rent or mortgage payment: April 2015	70	97.2	0.93
BB17FOWNHM	Residence: owned home outright	380	98.1	0.66
BB17FHOM16SP	Rent or mortgage payment: September 2016	70	98.6	†
BB17FHOM16OC	Rent or mortgage payment: October 2016	70	98.6	†
BB17FHOM15MR	Rent or mortgage payment: March 2015	70	98.6	0.96
BB17FHOM15JA	Rent or mortgage payment: January 2015	70	98.6	0.96
BB17FHOM15FB	Rent or mortgage payment: February 2015	70	98.6	0.96

See notes at end of table.

Table B-28. Reliability estimates for Rent and Car Payment items included in the reinterview, by item and item label: 2016—Continued

Item	Item label	Number of cases	Percent agreement	Relational statistic
BB17FHOM14DC	Rent or mortgage payment: December 2014	70	98.6	0.96
BB17FHOMAMT[1]	Previous rent or mortgage payment	70	100.0	0.97
BB17FHOM16NV	Rent or mortgage payment: November 2016	70	100.0	†
BB17FHOM14SP	Rent or mortgage payment: September 2014	70	100.0	†
BB17FHOM14OC	Rent or mortgage payment: October 2014	70	100.0	†
BB17FHOM14NV	Rent or mortgage payment: November 2014	70	100.0	†
BB17FHOM14JL	Rent or mortgage payment: July 2014	70	100.0	†
BB17FHOM14AG	Rent or mortgage payment: August 2014	70	100.0	†
BB17FCARAMT2[1]	Previous car loan or lease amount	10	100.0	1.00
BB17FCAR16SP	Car loan or lease: September 2016	10	100.0	†
BB17FCAR16OC	Car loan or lease: October 2016	10	100.0	†
BB17FCAR16NV	Car loan or lease: November 2016	10	100.0	†
BB17FCAR16AG	Car loan or lease: August 2016	10	100.0	†
BB17FCAR15MY	Car loan or lease: May 2015	10	100.0	1.00
BB17FCAR15MR	Car loan or lease: March 2015	10	100.0	1.00
BB17FCAR15JN	Car loan or lease: June 2015	10	100.0	1.00
BB17FCAR15AP	Car loan or lease: April 2015	10	100.0	1.00
BB17FCAR14OC	Car loan or lease: October 2014	10	100.0	1.00
BB17FCAR14NV	Car loan or lease: November 2014	10	100.0	1.00
BB17FCAR14JL	Car loan or lease: July 2014	10	100.0	†
BB17FCAR14AG	Car loan or lease: August 2014	10	100.0	†

† Not available. Statistics were not computed because the reinterview responses had less than two nonmissing levels.
[1] The relational statistic presented is Pearson's product-moment correlation coefficient r.
NOTE: The relational statistic presented is Cramer's *V*, unless otherwise footnoted. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Overall, results of the reinterview analysis indicate the survey yields data of high quality, with consistently reliable results. The reliability estimates reflect the expected performance of the particular items. Questions related to some objective or absolute status such as *graduating with academic honors* or *owning a home* produced exceptional reliability estimates. Likewise, items that collected details that required recall about past behavior, like, *months spent looking for work* produced somewhat lower, but still reasonably high reliability estimates. Given the goals of this B&B:16/17 study to obtain monthly-level data on employment, finances and other life experiences, these overall reliability estimates provide support that this level of complex detail is not only possible, but of good quality.

B.3.2.10. Cognitive and Usability Testing

In addition to the metrics used to analyze performance of the B&B:16/17 field test survey, cognitive and usability testing also informed changes to the full-scale survey. Cognitive and usability testing was performed to aid refinement of the survey by providing insight into the cognitive processes of cognitive interview respondents who had characteristics similar to B&B:16/17 full-scale respondents. For all surveys,

regardless of the type of device used (i.e., computer, tablet, or smart phone), the interviewer used pre-scripted cognitive probes to elicit information about questions of interest during the interview process. Spontaneous probes were also used at the interviewer's discretion when the respondent asked questions, seemed hesitant to provide a confident answer, or made comments regarding the questions being tested.

Respondents provided feedback on their comprehension of questions, retrieval of relevant information, decision processes for answering questions, navigation through the instrument and interface with response options, and ability to align their responses to each question's response options. One round of cognitive testing was conducted between October 2016 and January 2017 using items from the B&B:16/17 field test survey. The questions used for cognitive testing were a subset of employment, teaching, and background questions that were new or in revised format and had not been tested in previous B&B surveys.

Recruitment for cognitive interviewing was targeted to reach, screen, and enroll enough respondents to complete 30 interviews. Respondents who completed the requirements for their bachelor's degree between July 1st, 2014 and June 30th, 2015 and have been employed since receiving their bachelor's degree, were recruited to reflect the types of students participating in the B&B full-scale study. Table B-29 shows the final status of the 30 interviews completed by the individuals screened for cognitive testing.

Table B-29. Participant recruitment for cognitive testing, by recruitment status: 2017

Recruitment status	Number of respondents	Percent
Total	**1,410**	**100.0**
Screened but not eligible	1,200	85.1
Eligible but not scheduled	160	11.3
Scheduled but canceled before interview	10	0.7
Scheduled but not interviewed ("no-shows")	10	0.7
Completed interview	30	2.1

NOTES: Categories are mutually exclusive. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Due to the focus on the experiences of pre-K-12 teachers in the B&B:16/17 study, recruitment targeted pre-K-12 teachers in addition to respondents with other occupations. Table B-30 shows the total number of completed surveys by the occupation of the respondent.

Table B-30. Participants of cognitive testing, by occupation: 2017

Occupation	Number of respondents	Percent
Total	**30**	**100.0**
Pre-K-12 teacher	10	23.3
Other occupation	20	76.7

NOTES: 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

In addition, the use of three devices—computers, tablets, and smartphones— were tested in the cognitive interviews. This allowed for feedback on the formatting of questions, ease of use, and overall experience of taking the survey on various devices.

Table B-31 shows the number of completed surveys by device type.

Table B-31. Participants of cognitive testing, by device type: 2017

Device type	Number of respondents	Percent
Total	**40**	**100.0**
Computer	20	53.3
Smartphone	10	30.0
Tablet	10	16.7

NOTES: 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

In general, cognitive interview participants offered positive feedback on the survey and found it be easy to complete on all devices. Participants did identify specific areas for improvement. The most common trend noted was that respondents felt uncertainty in how to properly answer questions for different employment scenarios. For example, respondents, who worked in job settings where their hours changed frequently or the actual hours worked differed from what was required of them, had trouble answering questions on their average hours worked. To address this, salaried B&B:16/17 full-scale respondents were asked for changes to their required number of hours worked rather than the average number of hours they worked. Respondents also felt uncertainty when providing the number of jobs held at each employer due to varying interpretations of the term "unique job" and uncertainty of whether to provide the number of official job titles or the number of job duties held; this was especially difficult for respondents whose job duties changed frequently. To improve clarity for full-scale respondents, the phrase "unique job" was changed to "job title" in the full-scale survey. Another common experience of respondents was difficulty selecting a job title using the occupation coder. Many respondents could not find

their exact job title and felt like they were settling for a job title that was a close match. Others, who found their exact job title, felt that the provided description of the job title was not a close enough match to their official job description, leaving the respondents unsure if they had selected the correct job title. In the full-scale survey question wording, respondents were instructed to "select the closest match from the options returned."

B.3.2.11. Field Test Experiments

The B&B:16/17 field test included two experiments: one involving data collection, and another involving survey design. The data collection experiment employed varying data collection protocols by base-year respondent type to find the optimum strategy to minimize sampling design weight variation and nonresponse bias and boost response rates. The survey design experiment tested the impact of gated versus non-gated sections capturing employment and post-baccalaureate education (the "loop" experiment). This section will describe and provide the results of both experiments.

B.3.2.12. Evaluation of Experiment #1: Finding the optimum strategy to minimize sampling design weight variation and nonresponse bias and boost response rates

The approach for the B&B:16/17 field test involved increasing the subsampling rate of base-year survey nonrespondents from 10 percent to 50 percent, in order to minimize sampling weight variation. Base-year survey nonrespondents and base-year survey respondents were separated into groups targeted for different intensities of data collection protocols (see section 3.1.1). An observational Mahalanobis modeling procedure assisted in identifying potential contributors to nonresponse bias (for Mahalanobis distances see Stevens 1984).

Results. Table B-32 and table B-33 combined provide an overview of the response rates for each data collection protocol by data collection phase and the associated test statistics. The base-year survey nonrespondents with the aggressive protocol (Group 1) had a significantly higher response rate (37 percent) than the base-year survey nonrespondents (Group 2) with the default protocol (25 percent) ($t(2{,}097) = 3.52$, $p \leq .001$). In contrast, using the same default protocol as given to the Group 2 base year survey nonrespondents, the base-year survey late respondents (Group 3) had a 70 percent response rate to the B&B:16/17 field test survey; that is, base-year survey late respondents, unlike the base-year survey nonrespondents given the same treatment, had a good likelihood of responding to the follow-up survey with the default data collection protocol. The base-year survey early respondents

(Group 4) responded to the follow-up survey at a 75 percent rate with a relaxed protocol; that is, they needed the least prompting and encouragement of all the groups to complete the follow-up survey. The difference between Group 3 and 4 is statistically significant at an alpha of 0.05 ($t(2{,}097) = 2.08$, $p \leq .05$)[8].

Table B-32. *t*-test of response rates, by data collection phase and experimental condition: 2017

	Experimental condition			
Data collection phase	**Group 1: NPSAS:16 field test survey nonrespondents– Aggressive protocol**	**Group 2: NPSAS:16 field test survey nonrespondents– Default protocol**	***t*-score**	***p*-value**
Total	**0.372**	**0.250**	3.52***	**0**
Early completion phase	0.084	0.044	2.29*	0.02
Production phase	0.227	0.121	3.67***	0
Nonresponse conversion phase	0.096	0.097	-0.02	0.98

* $p \leq 0.05$.
***$p \leq 0.001$.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Table B-33. *t*-test of response rates, by data collection phase and experimental condition: 2017

	Experimental condition			
Data collection phase	**Group 3: NPSAS:16 field test survey late respondents– Default protocol**	**Group 4: NPSAS:16 field test survey early respondents– Relaxed protocol**	***t*-score**	***p*-value**
Total	0.698	0.751	2.08*	0.04

* $p \leq 0.05$.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

NPSAS:16 field test survey nonrespondents were randomly assigned to different data collection protocols—that is, Group 1 received the aggressive protocol and Group 2 the default protocol—allowing for an assessment of the effects of different interventions in those protocols on response rates across the different data collection phases. In the early completion phase (phase 1), the survey protocol for Group 1 (NPSAS:16 field test survey nonrespondents—aggressive protocol) differed from that for Group 2 (NPSAS:16 field test survey nonrespondents—default protocol). Group 1 received a prepaid incentive and was contacted via telephone. In order to investigate whether the prepaid incentive and/or the addition of telephone as a survey mode increased response rates, we compared the results at the end of the first data collection phase for Group 1 to those of Group 2, who received a promised incentive and no telephone option. Compared to Group 2 (4 percent), the response rate in Group 1 was almost twice as high (8 percent) at the end of the first data

[8] Group 3 and 4 were not randomly assigned and all comparisons should be made with caution which is why an analysis of response rates by data collection phase for these groups is not reported.

collection phase ($t(2{,}097) = 2.29$, $p \leq .05$). In order to assess the individual effects of offering a telephone mode and the prepaid incentives, the analyses were replicated assuming that those cases who responded on the phone or those cases who accepted the prepaid incentive would not have participated had this not been offered. Replicating the analyses assuming that those cases in Group 1 who responded via the telephone in phase 1 would not have participated in the survey had they not been contacted by an interviewer, shows that the difference in response rates between both groups would no longer be statistically significant ($z = 1.03$, $p = 0.30$). This finding suggests that offering a telephone option does increase response rates.

Investigating the effects of the incentives, overall, 80 out of 360 sample members in Group 1 accepted the prepaid incentive, 70 of who did so via PayPal and 10 via check. Sixty of these 80 sample members accepted the prepaid incentive in phase 1 and ten of those 60 actually completed the survey in phase 1 (20 sample members completed in a later phase). Analyses assuming that the ten respondents who accepted the prepaid incentive and participated in phase 1 would not have participated had they not received the incentive show that the difference in response rates between Groups 1 and 2 would no longer be significant ($z = 1.17$, $p = 0.24$). This finding suggests that offering prepaid incentives does increase response rates. However, prepaid incentives and telephone interviewing both occurred in phase 1, making it impossible to separate the effects. The fact that 30 out of 60 sample members accepted the prepaid incentive in phase 1 without actually participating in the survey, and the fact that many of the respondents who accepted the prepaid incentive only participated much later after being introduced to other design features (such as an abbreviated questionnaire), suggest that the prepaid incentives might not be as effective as anticipated.

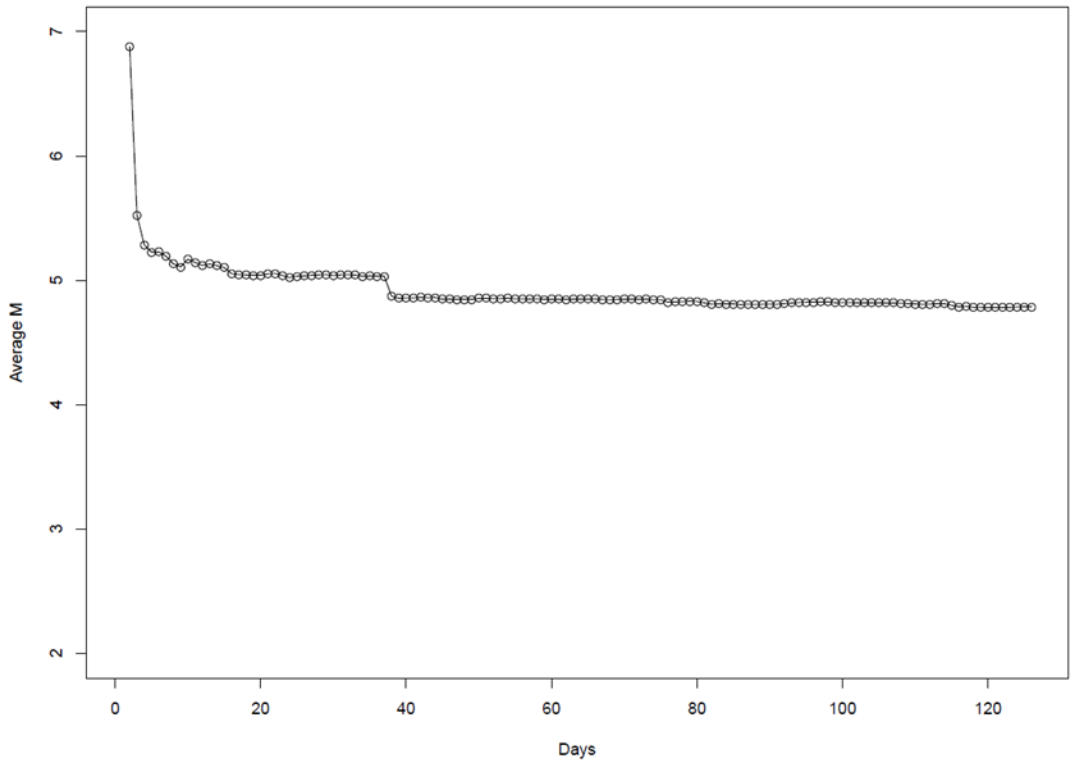
The production phase (phase 2) introduced the abbreviated survey in the aggressive data collection protocol for Group 1 only. Compared to Group 2 (12.1 percent) who did not receive the offer to complete the abbreviated survey in this phase, Group 1 had a significantly higher response rate (22.7 percent; $t(2{,}097) = 3.67$, $p \leq .001$). Introducing the abbreviated survey at a later data collection stage (phase 3) for Group 2 did not have the same effect on response rates we observed in phase 2 for Group 1. There are at least two possible explanations – one is that the cumulative effect of the aggressive protocol contributed to the increased response rates in the production phase. The other is that sample members in Group 2 started to ignore e-mails sent later in the field test data collection period and thus remained unaware of this offer.

a. Observational Mahalanobis & Nonresponse Bias

Mahalanobis distances are often employed to detect outliers (Stevens 1984), and provide the distance of one observation from the mean of other observations given a set of predictors. In the context of B&B:16/17 field test, Mahalanobis distances were calculated to identify sample members who were most unlike current respondents and presumably most likely to contribute to bias if they did not complete the survey.

Results. Figure B-1 displays the average Mahalanobis distance over the course of the field test data collection period. After a drastic decline in the first 20 days of data collection, the average Mahalanobis distance only decreased marginally. With the exception of one outlier, the distribution of both respondents and nonrespondents was very similar.

Figure B-1. Daily average Mahalanobis distance: 2016



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Based on frame data, B&B:16/17 staff conducted nonresponse bias analyses for 23 binary indicators derived from gender, age, institutional sector of the NPSAS institution, location by United States region of the NPSAS institution, and total enrollment counts. These analyses confirmed that there was very little nonresponse

bias. Table B-34 summarizes the results. While the average absolute relative bias in mean statistics was larger for Group 1 and Group 2, the NPSAS:16 field test survey nonrespondents, than for Group 3 and Group 4, only one out of 23 indicators (4 percent) in Group 1 yielded a statistically significant difference.

Table B-34. Average absolute relative bias, median absolute relative bias, and percentage of significant deviations, by data collection group: 2016

		Data collection group			
Nonresponse bias	Total	Group 1: Base-year survey nonrespondents–Aggressive protocol	Group 2: Base-year survey nonrespondents–Default protocol	Group 3: Base-year survey late respondents–Default protocol	Group 4: Base-year survey early respondents–Relaxed protocol
Average absolute rel. bias	5.64	14.30	18.33	4.87	3.98
Median absolute rel. bias	4.51	9.98	14.29	2.66	2.57
Percent significant deviation	0.00	4.35	0.00	0.00	0.00

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

If response propensity were correlated with response quality, that is, respondents in lower response propensity strata, such as the NPSAS:16 survey nonrespondents, provided lower quality responses, we would expect to see differences in response distributions across the different data collection groups. Looking at substantive differences across data collection groups[9], there were no statistically significant differences in reporting behavior from respondents in the survey. The reported number of undergraduate and postbaccalaureate postsecondary institutions, employment, the number of employers, and whether respondents had any dependents did not differ when comparing Group 1 to Group 2, or when comparing Groups 1 and 2 to Groups 3 and 4. These results were reassuring in that increased data collection efforts bringing in more respondents from lower response propensity strata, more specifically, Group 1, did not seem to decrease data quality.

B.3.2.13. Evaluation of Experiment #2: Survey Design

Respondents in surveys are often asked to respond to a series of follow-up questions (loops) that are repeated based on their response to gate items; for example, obtaining details about each employer a respondent has had. To determine the number of times a respondent goes through the loop, researchers can use one of two formats: (1) "how many" or (2) "go-again," also sometimes referred to as the "grouped" or the "interleafed" formats respectively (Eckman et al., 2014). The "how many" format asks respondents to report the number of occurrences followed by questions asking details of each occurrence. The "go-again" format asks respondents

[9] Comparing response distributions across groups, we do not see any evidence of differential nonresponse bias in each group and hence do not correct for differential selectivity.

to start with the first (or last) occurrence followed by more detailed questions. After answering the follow-up questions, respondents are asked if they have had any other occurrences. If "yes", they continue to iterate through the loops. Such a task can become burdensome for respondents in either format, especially as the number of occurrences increases, potentially threatening data quality.

The expectation is to see that the reported number of occurrences will be lower in the "go-again" format as respondents learn that each additional occurrence triggers a set of follow-up questions. Thus, respondents in this format have a potential benefit, that is, reduced burden, of underreporting the number of occurrences. Respondents in the "how many" format do not learn about the follow-up questions until after they report the number of events and hence have no prior knowledge of what is to follow. While the "how many" design should lead to higher reports of the number of events or occurrences, it might have adverse effects on data quality for the follow-up questions, potentially leading respondents to speed through the survey, provide a "don't know" response, leave responses blank, or break off from the survey. Past research supports evidence that the "how many" format provides more accurate responses for the filter question than the "go again" format, whereas the "go again" format provides higher quality data for the follow-up questions (Eckman et al., 2014; Eckman and Kreuter, 2015).

Data from the B&B:16/17 field test were analyzed where respondents were randomly assigned to one of the two loop formats asking about three areas: 1) number of undergraduate postsecondary institutions attended, 2) the number of postbaccalaureate postsecondary institutions attended, and 3) the number of postbaccalaureate employers and jobs. We evaluated the difference between loop formats in terms of number of reported occurrences, completion time, item nonresponse, and breakoff rates.

More specifically, the groups were assigned as follows:

- *Treatment group* – Sample members received the "how many" format for the loops in the three looping areas in the B&B:16/17 field test survey.
- *Control group* – Sample members received the "go-again" format for the loops in the three looping areas in the B&B:16/17 field test survey.

Table B-35 displays the number of cases assigned to the "go-again" (n = 570) and the "how many" (n = 560) condition by final case disposition. Cases in each condition received different question formats asking about undergraduate postsecondary institutions, postbaccalaureate postsecondary institutions, and postbaccalaureate employers and jobs. Respondents who completed the abbreviated

survey (referred to as abbreviated completed in table B-35) completed the section on postbaccalaureate employers and did not receive questions on postsecondary institutions. Respondents saw a maximum of seven loops per section (i.e., could report up to seven jobs within employers, for up to seven employers). Respondents who failed to provide a number of occurrences in the "how many" condition skipped the loop and were excluded from the following analyses.

Table B-35. Number and percentage of cases assigned to the "go-again" and the "how many" conditions, by final case disposition and loop format: 2016

			Loop format			
	Total		Go-again		How many	
Final case disposition	Number	Percent	Number	Percent	Number	Percent
Total	**1,130**	**100.0**	**570**	**100.0**	**560**	**100.0**
Final breakoff/partial	60	5.5	20	4.1	40	6.9
Abbreviated completed	150	12.9	70	12.2	80	13.7
Complete	920	81.6	470	83.7	450	79.4

NOTE: Excluding pending partial cases. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Results. Consistent with earlier research (Eckman et al., 2014; Eckman and Kreuter, 2015) the results suggest that data quality differs by loop format.

a. Number of reported occurrences

Table B-36 shows the distribution of questions leading into the experimental conditions in the different topical sections. Only if respondents confirmed, for example, that they did attend an undergraduate postsecondary institution were they asked about the number of institutions ("how many" condition only) and follow-up questions for attended (both conditions). As expected, the number of "Yes" responses to the gate questions leading to follow-up questions in the experiment did not differ significantly between both conditions across substantive sections.

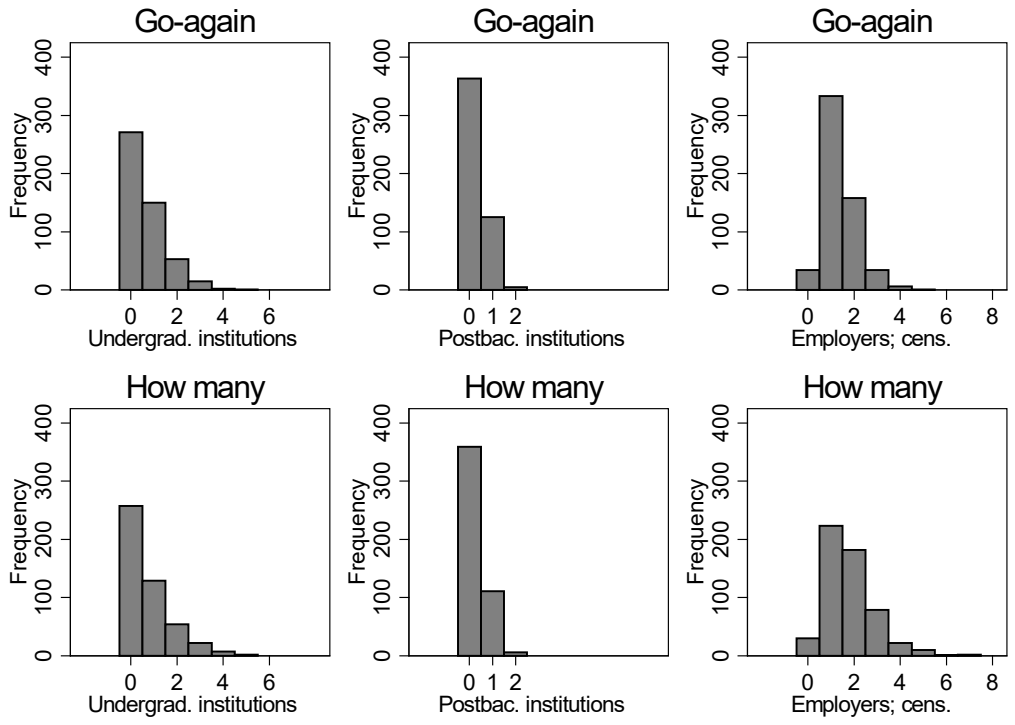
Table B-36. Distribution of questions leading into the experimental conditions in the different topical sections, by loop section and loop format: 2016

			Loop format			
	Total		Go-again		How many	
Loop section	Number	Percent	Number	Percent	Number	Percent
Total	**1,130**	**100.0**	**560**	**100.0**	**570**	**100.0**
Undergraduate postsecondary institutions (yes/no)						
No	530	46.7	270	47.9	260	45.6
Yes	440	38.5	220	39.0	210	37.9
Missing	10	0.6	#	0.2	10	1.1
Abbreviated	160	14.2	70	12.9	90	15.4
Postbaccalaureate postsecondary institutions (yes/no)						
No	720	63.9	360	64.1	360	63.7
Yes	250	21.9	130	23.0	120	20.7
Missing	#	0.1	#	#	#	0.2
Postbaccalaureate employers and jobs (yes/no)						
No	60	5.7	30	6.0	30	5.3
Yes	1,050	93.0	530	94.0	520	92.0
Missing	20	1.3	#	#	20	2.7

Rounds to zero.
NOTE: Respondents who did not provide information on the number of occurrences in the how many condition (i.e., the number of institutions, employers or jobs) skipped the loop experiment and are captured in the missing category. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Figure B-2 displays the number of occurrences reported in each section. A visual inspection shows that the number of undergraduate and postbaccalaureate postsecondary institutions reported was very similar across both loop formats, whereas the reported number of employers differs. The distribution of responses regarding the number of employers in the "how many" format is flatter and has a longer tail compared to the "go-again" condition such that more respondents report two or more employers in the "how-many" condition.

Figure B-2. Number of occurrences reported in each loop section: 2016



NOTE: For "Employers; cens" the number of employers was censored at 7 (n=1).
SOURCE: U.S. Department of Education, National Center for Education Statistics, The 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) field test.

A formal test confirmed the results obtained from the visual inspection (see table B-37). The difference between the "how many" (0.72) and the "go-again" condition (0.64) in the number of reported institutions was nonsignificant in the undergraduate postsecondary institutions section ($t(926.37) = -1.44, p = .15$). The difference between the "how many" (0.26) and the "go-again" condition (0.27) in the postbaccalaureate postsecondary institutions section ($t(967) = 0.51, p = .61$) was also nonsignificant. This result was plausible given the low reported number of institutions - respondents in the "go-again" condition did not have a chance to learn that each reported institution triggers a set of follow-up questions and hence do not underreport. Analyzing the subset of respondents who reported at least two undergraduate postsecondary institutions increased the difference between both groups ("go again" = 2.31, "how many" = 2.49; $t(153.73) = -1.70, p \leq .10$). Again, the assumption is that a higher estimate is indicative of higher accuracy. Only 10 respondents reported two or more postbaccalaureate postsecondary institutions, rendering formal tests invalid.

Table B-37. Test of number of events reported in each loop section, by loop section and loop format:2016

Loop section	Total	Loop format		*t*-score	*p*-value
		Go-again	How many		
Undergraduate postsecondary institutions	960	0.64	0.72	-1.44	0.15
Postbaccalaureate postsecondary institutions	970	0.27	0.26	0.51	0.61
Postbaccalaureate employers (cens.)	1,120	1.38	1.79	-7.35***	0
Postbaccalaureate jobs (cens.)	1,090	1.51	2.27	-8.82***	0

***$p \leq 0.001$.
NOTE: Based on respondents who completed the loop sections. Average number of jobs across employers. For "Employers; cens" the number of employers was censored at 7 and for jobs at 12. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

The average number of reported postbaccalaureate employers and jobs was generally higher in the "how many" condition. Respondents in the "go-again" condition reported on average 1.38 employers with an average of 1.51 jobs across all employers and 1.10 jobs per employer. In the "how many" condition, respondents reported 1.79 employers with 2.27 jobs across all employers and 1.32 jobs per employer. The differences in these reports were statistically significant (employers: $t(972.25) = -7.35$, $p \leq .001$; jobs across all employers: $t(757.53) = -8.82$, $p \leq .001$; jobs per employer: $t(602.63) = -5.43$, $p \leq .001$) and were driven by respondents who reported two or more employers.[10]

b. Completion time

Time stamps captured the total time and the load time to derive the average time spent on each form within each section. Response time measures the time that the respondent saw the screen after it was loaded (in seconds). The load time refers to the time the website took to load. The total time is the sum of the two. Due to backups and timeouts, some timing information was missing. These cases were deleted from the analyses before aggregation (by variable and not listwise across the different variables) and outliers were censored (by variable). Thus, response times and load times may not add up to total time. All time data was standardized by the number of forms a respondent saw, accounting for the number of loops. Table B-38 displays the number of cases for whom time information is available.

[10] Since we are dealing with count data, we replicated all tests using a Negative Binomial regression (the assumptions for a more parsimonious Poisson regression do not hold). The results are identical.

Table B-38. Cases with available timing information, by loop section and loop format

			Loop format			
	Total		Go-again		How many	
Loop section	Number	Percent	Number	Percent	Number	Percent
Undergraduate postsecondary institutions	440	100.0	220	50.8	210	49.2
Postbaccalaureate postsecondary institutions	250	100.0	130	52.6	120	47.4
Postbaccalaureate employers and jobs	1,020	100.0	530	52.3	480	47.7

NOTE: Based on respondents who completed the loop sections. Backups and timeouts caused missing time stamps. These cases were deleted from the analyses. Outliers were censored. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Table B-39 shows the results of testing for differences in the average response time, load time, and total time per form across experimental conditions (average times are displayed in seconds; the t-test is based on the log-transformed data per form). Overall, response, load, and total time did not differ within the undergraduate or the postbaccalaureate postsecondary institutions section. These results are plausible given that the number of loops in each condition was similar and suggest that respondents expended a similar cognitive effort in both conditions (see table B-39).

In the postbaccalaureate employers and jobs section, respondents in the "how many" condition spent approximately half a second less on each form (11.40 sec.) compared to the "go-again" condition (11.96 sec.). This difference is statistically significant ($t(875.76) = 3.47, p \leq .001$). These differences could potentially be due to respondents expending less cognitive effort in combination with higher item nonresponse rates in the "how many" condition (see table B-39). Load time was significantly longer in the "how many" condition compared to the "go-again" condition ($t(974.72) = -3.36, p \leq .001$) although this difference is marginal (0.82 sec. vs 0.99 sec.). Longer loading times in the "how many" condition are plausible due to a more complex skip logic and internal routing. As a result of these counteracting trends, the difference in total time is decreased, albeit still significant ($t(940.49) = 2.56, p \leq .05$). Respondents in the "go-again" condition spent on average 12.87 seconds on each form whereas respondents in the "how many" condition spent on average 12.44 seconds per form.

Table B-39. Test of mean time to complete a form in each section, by loop section and loop format (in seconds): 2016

Loop section	Loop format: Go-again	Loop format: How many	*t*-score	*p*-value
Undergraduate postsecondary institutions				
Response time per form	12.55	12.87	-0.61	0.55
Load time per form	0.57	0.60	-0.34	0.74
Total time per form	13.17	13.47	-0.63	0.53
Postbaccalaureate postsecondary institutions				
Response time per form	13.01	13.65	-0.73	0.47
Load time per form	0.71	0.70	0.05	0.96
Total time per form	13.73	14.34	-0.91	0.36
Postbaccalaureate employers and jobs				
Response time per form	11.96	11.40	3.42***	0
Load time per form	0.82	0.99	-3.34***	0
Total time per form	12.87	12.44	2.54*	0.01

* $p \leq 0.05$.
*** $p \leq 0.001$.
NOTE: Based on respondents who completed the loop sections. Backups and timeouts caused negative time and missing time stamps. Outliers were censored. Therefore, response and load times may not add up to total time. *t*-tests are based on the log-transformed data per form.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

c. Item nonresponse

Measuring item nonresponse was complicated by the fact that respondents in the "go-again" condition who failed to report another institution or employer will by design not have any item nonresponse for these missing occurrences. Respondents in the "how many" condition were presented with the number of loops corresponding to the number of occurrences reported and hence had an increased number of opportunities to skip items. Thus, by design, item nonresponse was expected to be significantly higher in the "how many" condition. As a result, it was investigated whether a respondent in either condition ever failed to respond to a follow-up question.

The same pattern for the substantive responses and the completion time emerged. Item nonresponse did not differ by experimental condition in the undergraduate or the postbaccalaureate postsecondary institutions sections. As shown in table B-40, more respondents in the "how many" condition (65 percent) skipped at least one item compared to the "go-again" condition (53 percent) in the postbaccalaureate employers and jobs section. This difference is statistically significant ($z = -3.86$, $p \leq .001$).

Table B-40. Test of item nonresponse rates in each section, by loop section and loop format: 2016

Loop section	Total	Loop format		*z*-score	*p*-value
		Go-again	How many		
Undergraduate postsecondary institutions	440	0.05	0.06	-0.50	0.62
Postbaccalaureate postsecondary institutions	250	0.11	0.10	0.13	0.90
Postbaccalaureate employers and jobs	1,050	0.53	0.65	-3.86***	0

***$p \leq 0.001$.
NOTE: Based on respondents who started the loop sections. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

d. Breakoff rates

The breakoff analyses investigated whether or not a respondent broke off during the survey. There were no significant differences in the breakoff rates in the undergraduate and postbaccalaureate postsecondary institution sections for both conditions (see table B-41). Breakoff rates were significantly higher (z= -1.98, $p \leq .05$) in the "how many" condition (15 percent) compared to the "go-again" condition (11 percent) in the postbaccalaureate employers and jobs section. There are two possible explanations for this finding. The first is that the "how many" condition forced respondents through more loops and hence increased respondent burden which might have led to breakoffs. On the other hand, the breakoff rate in the "go-again" condition was underestimated as it was unknown what the breakoff rate would have been in the "go-again" condition, had the respondents not underreported. As no information about in which loop the breakoff occurred was available, the two scenarios cannot be differentiated from each other.

Table B-41. Test of breakoff rates in each section, by loop section and loop format: 2016

Loop section	Total	Loop format		*z*-score	*p*-value
		Go-again	How many		
Undergraduate postsecondary institutions	440	0.03	0.05	-0.81	0.42
Postbaccalaureate postsecondary institutions	250	0.01	0	0.95	0.34
Postbaccalaureate employers and jobs	1,050	0.11	0.15	-1.98*	0.05

* $p \leq 0.05$.
NOTE: Based on respondents who started the loop sections. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

B.3.3 Data Collection Quality Control

Throughout B&B:16/17 field test data collection, Quality Circle (QC) meetings were held every 2 weeks, and as data collection came to a close, project staff held several debriefing meetings with call center staff. During these meetings, and through an anonymous survey, staff were encouraged to share their experiences on the

B&B:16/17 field test and share any recommendations for the full-scale study. Call center staff provided feedback on training, contacting sample members and gaining cooperation, and administering the survey.

With regard to training, interviewers were welcomed an opportunity to practice mock interviews during and after in-person training sessions. B&B:16/17 field test staff were experienced in working on NCES studies, so the training content was adapted to accommodate their level of experience. They especially valued additional practice with Frequently Asked Questions (FAQs) since they later found that many sample members were hesitant to participate, and extensive knowledge of the study helped them gain cooperation. Interviewers acknowledged that project staff provided them with extensive study background, so that they could fully understand the study's design, which helped them prepare for making telephone calls. Interviewers also appreciated being provided with an extensive pronunciation guide for difficult-to-pronounce words in the survey, as well as practice with new predictive survey coders. For future training sessions, interviewers suggested additional training on refusal aversion (preventing refusals before they happen), particularly through an emphasis on FAQs and study basics.

Interviewers were able to easily access base-year call histories, mailings sent, and tracing records, as part of their case review before making each telephone call. They appreciated having this information as part of their case history review, as it helped them to tailor their approach for each call. Reviewing this information helped staff to reduce the number of unnecessary telephone calls, select the most appropriate time and day of the week to call, and consequently, helped staff avoid refusals. Interviewers valued the flexibility in the front-end scripts, noting that personalizing introduction scripts helped them retain sample member attention in the first few minutes of a call. Interviewers also noted that being prepared with answers to questions about the study and its purpose helped put sample members and contacts at ease and increased the likelihood of gaining their cooperation.

Interviewers reported overall positive experiences administering the survey, but the length of the survey sometimes presented challenges in keeping respondents engaged. Interviewers also provided feedback on new or experimental items in the survey, and their experiences with particular items that were difficult for respondents to understand. Project staff used this feedback to inform the full-scale survey.

Section B.4. Recommendations for B&B:16/17 Full-scale Study

The B&B:16/17 field test was conducted to test and evaluate study methods and results before implementing the full-scale study. This section includes recommendations for data collection procedures, survey design, and administrative records matching in the full-scale study based on field test results.

B.4.1 Data Collection and Student Survey Recommendations

B.4.1.1. Data Collection Procedures

This section will describe data collection procedures that will be adjusted for the full-scale study, based on results from the field test data collection experimental design, the observational Mahalanobis modeling procedure, and feedback from DCIs.

B&B:16/17 use the aggressive data collection protocol for the NPSAS:16 base-year survey nonrespondents and the default protocol for the NPSAS:16 base-year survey late respondents. While the relaxed protocol worked relatively well for the NPSAS:16 field test survey early respondents (Group 4), the plan is to slightly modify this data collection protocol in the full-scale study.

The following modifications to the data collection protocols were proposed to further increase response rates and reduce the potential for nonresponse for the full-scale study:

- There will be no offer of a prepaid incentive in the aggressive data collection group. Instead of offering a prepaid incentive, the survey completion incentive for the NPSAS:16 non-located survey nonrespondents will be increased to $55, and the survey completion incentive for the NPSAS:16 located survey nonrespondents and abbreviated respondents increased to $50.
- Incentivize NPSAS:16 located survey nonrespondents and abbreviated respondents, and NPSAS:16 late respondents, with a $5 early bird incentive if they complete the survey within the first three weeks of data collection. Early

bird or early response incentives have been shown to lead to faster responses and an increase in response rates and participation rates within the incentive period (e.g., LeClere et al., 2012; Coppersmith et al., 2016). This can increase efficiencies by reducing overall data collection cost and length of the data collection for these cases. However, results show that early response incentives do not necessarily contribute to an increase in the final response rates (Coppersmith et al., 2016).

- Earlier, it was shown that among base-year survey nonrespondents who participated in the B&B:16/17 field test survey, 22 percent were deemed ineligible by the survey. Base-year respondents had a 4.5 percent ineligibility rate. Therefore, an address update with an eligibility screener (tied to a $10 monetary token of appreciation upon completion) will be sent to all sample members upon OMB approval of the full-scale package. NPSAS non-study members will not receive the $10 for completion of the screener and will not be fielded in the survey even if found eligible the screener. The intent of this is to remove non-study members from the sample completely if found to be ineligible.
- Compared to the B&B:08/09 field test (81 percent) response rates for base-year survey respondents, the B&B:16/17 field test base-year survey response rates of Group 3 and Group 4 (NPSAS:16 respondents), (combined 73 percent) were considerably lower, which was in part due to lower located rates among the NPSAS base year respondents (B&B:08/08 field test: 87 percent; B&B:16/17 field test: 86 percent) and to lower participation rates among those who were located (B&B:08/08 field test: 93 percent; B&B:16/17 field test: 82 percent). Combined with the evidence from the B&B:16/17 field test, the recommendation is to increase incentives for the NPSAS:16 base-year early respondents (Group 4) to $30 to match those used in the default protocol (Group 3), and to integrate light CATI interviewing with the Student Survey

The B&B:16/17 field test provided project staff with valuable information for the development of the full-scale student survey. Modifications made between the field test and full-scale surveys that were informed by Technical Review Panel (TRP) feedback, DCI feedback, cognitive interview results, data collection experiments, and field test data analyses. All modifications were made to improve survey efficiency and reduce respondent burden. The following modifications to the full-scale student survey included removing or revising questions from field test and the addition of new questions and are summarized in table B-42. For further detail on the modifications made to the B&B:16/17 full-scale student survey, see table B-43.

Given the goals to improve survey efficiency and reduce respondent burden, several items were removed from the full-scale survey due to their level of burden relative to their analytic value or interest or availability in alternative data sources. For example, a set of questions that asked respondents to recall their exam scores on graduate entrance exams such as the GRE, MCAT, LSAT, and GMAT (see table B-42; items BB17CGRED – BB17CGMATSC), were removed from the full-scale survey due to high cognitive and time burden (e.g. BB17CGRESCN took an average of 27.8 seconds to complete) and high levels of missingness in item response. The number of questions asking about respondents' proficiency and use of a second language was also reduced by removing some questions for similar reasons (see table B-42; items BB17FLNGCLS – BB17FLNGCUR, BB17FLNGPLN). Additionally, a series of questions that asked for the amount borrowed, repayment status, and monthly payment amounts on federal student loans (see table B-42; items BB17IFEDVER – BB17IFDMEST) was removed from the full-scale survey because this information is available in reliable administrative data sources.

As detailed in the evaluation of the survey design experiment, the decision was made to use the "how many" format in the B&B:16/17 full-scale data collection. The "how many" format asks respondents to respond with a count in three areas (the number of undergraduate postsecondary institutions attended, the number of postbaccalaureate postsecondary institutions attended, the number of postbaccalaureate employers and jobs). After answering with a count, respondents will see receive a set of detailed questions for each area commensurate with their initial count responses. This format contrasts with the "go-again' format which produces detailed question loops until a respondent answers no to having additional occurrences. Despite the marginal loss in data quality in the follow-up questions, increased accuracy in the estimated number of occurrences in the "how many" condition provided critical information even without the follow-up questions, and allowed researchers to better impute missing information.

Other modifications to the B&B:16/17 full-scale student survey were revisions to question wording in order to improve respondent comprehension and data quality. One question, which was a new item in the field test survey, asked respondents how many "unique jobs" they had with each employer that they listed. Through field test and cognitive interview results and TRP feedback, B&B project staff determined that field test respondents were not interpreting this question consistently. To address this issue, the question wording was revised to ask for the number of "job titles" rather than "unique jobs" at each employer (see table B-42; item BB17DEMPJOBS). Two questions in the student survey asked about professional certifications and licenses (see table B-42; items BB17DLICFILT and BB17DLICOND01). The wording of these questions was revised for the full-scale survey to match a

comparable Adult Training and Education Survey (ATES)[11] question and achieve cross-study data consistency and quality.

In addition to reducing the number of questions for the full-scale student survey and revising question wording, B&B project staff also added items to improve survey efficiency, respondent comprehension, and data quality. For instance, a simple yes/no question was added to ask whether or not respondents were salaried in a given job, which afforded B&B staff to add conditional language to subsequent questions that asked about the number of hours required to work versus the number of hours worked, based on a person's status as either salaried or not salaried, respectively (see table B-42; items BB17DJBSAL01 – BB17DEMPH401).

B.4.2 Administrative Records Matching Recommendations

Administrative records matching for the B&B:16/17 full-scale study will be similar to procedures conducted for NPSAS:16 full-scale study. 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 student in the B&B:16/17 full-scale sample will be sent to CPS three times: twice for the 2016–17 application data (once as students are selected for data collection purposes and one final time for deliverable data purposes). Each student will be sent to CPS one time for the 2016–17 data to be used in final data files. Students will likely be matched with the NSLDS database for federal loan and Pell Grant data at three different times during data collection: two interim matches will be performed in order to have preliminary data with which to work, as well as one last match for final data.

In addition to matching with CPS and NSLDS, the full-scale study will involve administrative record matches with the NSC for enrollment and degree data and, tentatively, the Veterans Benefits Administration (VBA) as NPSAS:16 had a veteran oversample. The match with NSC will be performed once all students have been sampled and will only occur one time toward the end of data collection. The database matches with the VBA will occur in a similar timeframe and will also be performed only one time for all sampled students.

[11] The Adult Training and Education Survey (ATES) is administered as part of the National Household Education Surveys Program (NHES). See https://nces.ed.gov/nhes/.

Table B-42. Summary list of field test items revised, added to, or removed from the B&B:16/17 full-scale survey, by section and item name: 2016

Section	Item name	Label	Revision in full-scale instrument
Undergraduate Education	BB17BNPVERMJ2	Verify preloaded double majors for BA degree at NPSAS	Added to improve survey efficiency and reduce burden.
Undergraduate Education	BB17BVERNPMAJ	Verify preloaded single major for BA degree at NPSAS	Added to improve survey efficiency and reduce burden.
Undergraduate Education	BB17BUGNAM	Names of postsecondary institutions attended prior to completing BA degree	Removed because included in field test only for loop experiment.
Undergraduate Education	BB17BOTSC01	Enrolled at another postsecondary institution prior to completing bachelor's degree	Removed because included in field test only for loop experiment.
Postbaccalaureate Education/Training	BB17CSCHNAM	Names of post-BA institutions attended	Removed because included in field test only for loop experiment.
Postbaccalaureate Education/Training	BB17CHRDSHP01	Hardship posed by financial cost of post-BA degree/certificate	Removed due to limited analytic utility.
Postbaccalaureate Education/Training	BB17CENR01	Attended other postsecondary institutions since completing bachelor's degree	Removed because included in field test for loop experiment.
Postbaccalaureate Education/Training	BB17CALTPLN	Alternative plans if had not enrolled in post-BA degree/certificate	Removed due to limited analytic utility.
Postbaccalaureate Education/Training	BB17CAPP	Applied for admission to any post-BA degree/certificate programs	Removed due to limited analytic utility.
Postbaccalaureate Education/Training	BB17CNOATT	Reasons why applied for admission to post-BA degree/certificate programs, but did not attend	Removed due to limited analytic utility.
Postbaccalaureate Education/Training	BB17CEFUT	Likelihood of enrolling in (additional) post-BA degree/certificate program	Removed due to limited analytic utility.
Postbaccalaureate Education/Training	BB17CEXPEVR	Highest degree expected ever	Added as a longitudinal measure of education aspirations.
Postbaccalaureate Education/Training	BB17CGRED	Took GRE after August 1, 2011	Removed due to questionable data quality and to reduce respondent burden.
Postbaccalaureate Education/Training	BB17CMCATSCD	Took MCAT after March 1, 2015	Removed due to questionable data quality and to reduce respondent burden.
Postbaccalaureate Education/Training	BB17CGRESCO, BB17CGRESCN, BB17CMCATSCO, BB17CMCATSCN, BB17CLSATSC, BB17CGMATSC,	Test scores for GRE, MCAT, LSAT, and GMAT	Removed due to questionable data quality and to reduce respondent burden.
Financial Aid	BB17IFEDVER	Verify took out post-BA federal student loans	Removed because information available through administrative data sources.
Financial Aid	BB17IFDREPAY	Currently repaying federal student loans	Removed because information available through administrative data sources.
Financial Aid	BB17IFDNOPAY	Why not currently repaying federal student loans	Removed because information available through administrative data sources.
Financial Aid	BB17IFDPAYMT	Federal student loan current repayment status	Removed because information available through administrative data sources.
Financial Aid	BB17IIDR	Participation in income-driven repayment plan for federal student loans	Removed because information available through administrative data sources.
Financial Aid	BB17IFDMOS	Amount typically paid each month on federal student loans	Removed because information available through administrative data sources.
Financial Aid	BB17IFDMEST	Estimate of total current monthly payment for federal student loans	Removed because information available through administrative data sources.
Financial Aid	BB17IUGPVAMT	Amount borrowed in undergraduate private student loans	Removed to reduce respondent burden.
Financial Aid	BB17IUGPVEST	Estimate of amount borrowed in undergraduate private loans	Removed to reduce respondent burden.
Financial Aid	BB17IPVINT	Current interest rate on private student loans	Removed due to questionable data quality and to reduce respondent burden.

See notes at end of table.

Table B-42. Summary list of field test items revised, added to, or removed from the B&B:16/17 full-scale survey, by section and item name: 2016—Continued

Section	Item name	Label	Revision in full-scale instrument
Financial Aid	BB17IEOUTLN	Level of stress regarding payment of student loans	Removed due to limited analytic utility.
Financial Aid	BB17ILNPROG, BB17ILNPROGB	Approve or disapprove of the fictitious loan repayment program (PayLate and Caves loan repayment programs)	Removed because used in the field test only for purposes of measuring survey fatigue and measurement error.
Postbaccalaureate Employment	BB17DLICFILT	Held a professional certification or state or industry license at any time between completing BA degree and June 2017	Revised question wording to match comparable Adult Training and Education Survey (ATES) question.
Postbaccalaureate Employment	BB17DEMPJOBS	Number of job titles at each employer held between completing BA degree and June 2017	Revised question wording to ask about “job titles” rather than “unique jobs”
Postbaccalaureate Employment	BB17DEMPLOY01	Employer 1: name	Removed because included in field test only for loop experiment.
Postbaccalaureate Employment	BB17DHIRE01	Hiring incentive received when began working with employer	Removed because hiring incentives less applicable to recent bachelor’s degree recipients.
Postbaccalaureate Employment	BB17DLICOND01	Professional certification or license required by a federal, state, or local government agency to do job	Revised question wording to match comparable ATES question.
Postbaccalaureate Employment	BB17DJBSAL01	Salaried employee	Added gate item to clarify wording for salaried and non-salaried respondents in follow-up hours worked items.
Postbaccalaureate Employment	BB17DEMPHS01	Average hours worked per week when first started at job	Revised question wording to clarify wording for salaried and non-salaried respondents.
Postbaccalaureate Employment	BB17DEMPHC01	Average hours worked per week changed at job	Revised question wording to clarify wording for salaried and non-salaried respondents.
Postbaccalaureate Employment	BB17DEMPHN01	Number of times average hours worked per week changed at job	Revised question wording to clarify wording for salaried and non-salaried respondents.
Postbaccalaureate Employment	BB17DEMPH101–BB17DEMPH401	Change(s) in average hours worked per week/ date(s) of change(s) in average hours worked per week	Revised question wording to clarify wording for salaried and non-salaried respondents.
Postbaccalaureate Employment	BB17DOT01	Reasons worked more than 40 hours per week	Removed due to limited analytic utility.
Postbaccalaureate Employment	BB17DNSFA01	Bachelor’s degree required for job duties	Removed due to limited analytic utility.
Postbaccalaureate Employment	BB17DLICREL01	Professional certification or license related to job	Removed due to limited analytic utility.
Postbaccalaureate Employment	BB17DOTHJOB01	Any other jobs at employer since completing BA degree	Removed because included in field test only for loop experiment.
Postbaccalaureate Employment	BB17DOTHEMP01	Any other employers	Removed because included in field test only for loop experiment.
Postbaccalaureate Employment	BB17DSIDEJB	Worked any side jobs between completing BA degree	Added to collect information about trends in the current economy.
Postbaccalaureate Employment	BB17DSIDEPAY	How much earned from side jobs	Added to collect information about trends in the current economy.
Postbaccalaureate Employment	BB17DNW01	Activities while not working for pay and not enrolled	Revised to add a response option to capture unpaid internships.
Postbaccalaureate Employment	BB17DMAIN01	Primary activity while not working or enrolled	Removed to reduce respondent burden.
Postbaccalaureate Employment	BB17DSEARCH	Currently looking for a job	Removed to reduce respondent burden.
Teaching	BB17EHOWPREP	Steps taken to prepare to teach at pre-K - 12th grade level	Revised to add alternative route to certification response option.
Teaching	BB17ETCHLIKE	Likelihood will teach at the pre-K - 12th grade level now or in the future	Removed due to poor predictive value of item.
Teaching	BB17EALTCRT	Entered teaching through an alternative route to certification	Removed because information now collected on teacher preparation item.

See notes at end of table.

Table B-42. Summary list of field test items revised, added to, or removed from the B&B:16/17 full-scale survey, by section and item name: 2016—Continued

Section	Item name	Label	Revision in full-scale instrument
Teaching	BB17EPRAXIS	Taken the Praxis	Removed due to limited analytic utility.
Teaching	BB17EPXSSC	Praxis score	Removed due to limited analytic utility.
Teaching	BB17EMOVE	Likelihood of moving into non-teaching job in elementary or secondary education	Removed because item less applicable to recent bachelor's degree recipients.
Background	BB17FLNGCLS	Last time non-English language class was taken	Removed to reduce the amount of detail related to second languages.
Background	BB17FLNGPST	Frequency of non-English language spoken at home growing up	Removed to reduce the amount of detail related to second languages.
Background	BB17FLNGCOM	Proficiency of non-English language	Removed to reduce the amount of detail related to second languages.
Background	BB17FLNGCUR	Regularly interact with others in non-English language	Removed to reduce the amount of detail related to second languages.
Background	BB17FLNGPLN	Plan to use non-English language in career	Removed to reduce the amount of detail related to second languages.
Background	BB17FSEX	Biological sex	Added to collect information on impact of sexual orientation/gender identity on employment outcomes and career paths.
Background	BB17FGENDER	Gender identity	Added to collect information on impact of sexual orientation/gender identity on employment outcomes and career paths.
Background	BB17FLGBTQ	Sexual orientation	Added to collect information on impact of sexual orientation/gender identity on employment outcomes and career paths.
Background	BB17FAWARE	Sexual orientation awareness	Added to collect information on impact of sexual orientation/gender identity on employment outcomes and career paths.
Background	BB17FVOTE	Registered to vote in state in which currently live	Removed due to limited analytic utility.
Background	BB17FVTNEL	Voted in 2016 presidential election	Added to capture recent civic participation.
Background	BB17FDAYAMT	Total amount for childcare each month	Added to collect month-level financial data on childcare payments.
Background	BB17FDAYDAT	Month/year began paying current childcare payment	Added to collect month-level financial data on childcare payments.
Background	BB17FDAYPRV	Different daycare amount between BA degree date and current childcare payment	Added to collect month-level financial data on childcare payments.
Background	BB17FDAYMOS	Months paid different daycare amount between BA degree and current childcare payment	Added to collect month-level financial data on childcare payments.
Background	BB17FDAYAMT2	Average monthly payment for previous childcare payment	Added to collect month-level financial data on childcare payments.
Background	BB17FCCPAY	Total amount paid toward all credit card statements last month	Removed due to limited analytic utility.
Background	BB17FFIN1YR	Financial literacy: Understanding of inflation	Removed to reduce respondent burden.
Background	BB17FFIN5YEAR	Financial literacy: Understanding of interest rate	Removed to reduce respondent burden.
Background	BB17FSTOCK	Financial literacy: Understanding of risk diversification	Removed to reduce respondent burden.
Incentives	RESUME1	Agree to upload resume	Added because resumes being considered as additional data source.
Incentives	RESUPLOAD	Resume upload	Added because resumes being considered as additional data source.
Incentives	RESUMEDESC	Resume up-to-date	Added because resumes being considered as additional data source.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016

Section and Item name	Description
Undergraduate Education	
BB17BNPVERMJ2 *(Added)*	When we last spoke with you during the 2015-2016 school year, you told us you were majoring in [MAJOR 1] and [MAJOR 2]. Were your final majors for your bachelor's degree at [NPSAS INSTITUTION]… [MAJOR 1] ◯ Yes ◯ No [MAJOR 2] ◯ Yes ◯ No
BB17BVERNPMAJ *(Added)*	In the 2015-2016 school year, you told us you were majoring in [{if MAJOR 1 ne missing} [MAJOR 1] {else} [MAJOR 2]]. Was [{if MAJOR 1 ne missing} [MAJOR 1] {else} [MAJOR 2]] your final major for your bachelor's degree at [NPSAS INSTITUTION]? [{if BB17BDBLMAJ = 1} (Since you indicated a double major, we will ask you about your other major next.) ◯ Yes ◯ No
BB17BUGNAM *(Removed)*	What are the names of the [X] colleges, universities, or trade schools? Undergraduate school 1: Undergraduate school n:
BB17BOTSC01 *(Removed)*	You already told us that you have attended the following schools between high school and the time you completed your bachelor's degree requirements at [NPSAS]: [undergraduate school 1] [undergraduate school n] Have you attended any other colleges, universities, or trade schools as an undergraduate student between the time you graduated from high school and the time you completed your bachelor's degree requirements at [NPSAS] in [BA DATE]? (Include summer enrollment and any other undergraduate classes you have taken that earned college credit, including enrollment for credit at any schools where you studied abroad.) ◯ Yes ◯ No
Postbaccalaureate Education and Training	
BB17CSCHNAM *(Removed)*	What are the names of the [X] colleges, universities, or trade schools? Post-BA school 1: Post-BA school n:

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

<table>
<tr><th>Section and Item name</th><th>Description</th></tr>
<tr><td>BB17CHRDSHP01
(Removed)</td><td>Please indicate how much you agree with the following statement.

The financial cost of obtaining my [degree/certificate] at [postbaccalaureate institution] posed a significant hardship for me.

Would you say...

◯ Strongly disagree
◯ Disagree
◯ Neither agree not disagree
◯ Agree
◯ Strongly agree</td></tr>
<tr><td>BB17CENR01
(Removed)</td><td>Other than your attendance at:

[post-BA school 1]
[post-BA school n]

Have you attended any other school for a degree or certificate at any point after completing your bachelor’s degree requirements in [BA DATE]?

◯ Yes
◯ No</td></tr>
<tr><td>BB17CALTPLN
(Removed)</td><td>If you had not enrolled in your most recent degree or certificate program after completing your bachelor’s degree, would you have...

<table><tr><th></th><th>Yes</th><th>No</th></tr><tr><td>Enrolled in a different program?</td><td>◯</td><td>◯</td></tr><tr><td>Worked for pay, or worked more hours?</td><td>◯</td><td>◯</td></tr><tr><td>Done something else?</td><td>◯</td><td>◯</td></tr></table></td></tr>
<tr><td>BB17CAPP
(Removed)</td><td>Have you applied for admission to any college or graduate school programs at any point after completing your bachelor's degree requirements in [BA COMPLETION DATE]?

◯ Yes
◯ No</td></tr>
<tr><td>BB17CNOATT
(Removed)</td><td>Why did you apply for additional education but not attend?

(Please check all that apply.)

☐ Applied, but have not yet received decision
☐ It wasn’t the right fit (for example: school, program, environment, location)
☐ Financial reasons (for example: too expensive, did not receive enough financial aid)
☐ Was not accepted
☐ Personal reasons
☐ Any other reasons</td></tr>
<tr><td>BB17CEFUT
(Removed)</td><td>How likely do you think it is that you will enroll in another program, degree, or certificate at either the undergraduate or graduate level? Would you say...

◯ Not at all likely
◯ Somewhat likely
◯ Likely
◯ Very likely</td></tr>
</table>

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17CEXPEVR *(Added)*	What is the highest level of education you ever expect to complete at any school? (Provide your best guess even if you are not sure.) ◯ Bachelor's degree (usually a 4-year degree) ◯ Graduate level courses, no graduate degree or certificate expected ◯ Post-baccalaureate certificate ◯ Master's degree ◯ Post-master's certificate ◯ Professional doctoral degree (including: chiropractic, dentistry, law, medicine, etc.) ◯ Doctoral degree, research/scholarship (including: PhD, EdD, etc.)
BB17CGRED *(Removed)*	Did you take the GRE after August 1, 2011? ◯ Yes ◯ No
BB17CGRESCO *(Removed)*	What was your GRE score? Verbal reasoning: ☐ Quantitative reasoning: ☐ Analytic writing: ☐
BB17CGRESCN *(Removed)*	What was your GRE score? Verbal reasoning: ☐ Quantitative reasoning: ☐ Analytic writing: ☐
BB17CMCATSCD *(Removed)*	Did you take the MCAT after March 1, 2015? ◯ Yes ◯ No
BB17CMCATSCO *(Removed)*	What was your MCAT score? Total score: ☐ Verbal reasoning: ☐ Biological sciences: ☐ Physical sciences: ☐

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17CMCATSCN *(Removed)*	What was your MCAT score? Total score: ☐ Biological sciences: ☐ Physical sciences: ☐ Social sciences: ☐ Critical analysis: ☐
BB17CLSATSC *(Removed)*	What was your LSAT score? Score: ☐
BB17CGMATSC *(Removed)*	What was your GMAT score? Total score: ☐ Verbal reasoning: ☐ Quantitative reasoning: ☐ Analytic writing ☐ Integrated reasoning: ☐
Financial Aid	
BB17IFEDVER *(Removed)*	Our records indicate that you previously told us you received federal student loans. Is that correct? ◯ Yes ◯ No
BB17IFDREPAY *(Removed)*	Are you currently repaying your federal student loans? ◯ Yes ◯ No
BB17IFDNOPAY *(Removed)*	Why are you not currently repaying your federal student loans? ◯ Deferring payment (for example, current enrollment, grace period, forbearance) ◯ Already paid off ◯ Other reason

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17IFDPAYMT *(Removed)*	What is the current repayment status of your federal student loans? ◯ Repaying the original payment amount ◯ Repaying a different amount due to lean modification, consolidation or extension ◯ Repaying through collections after a loan default ◯ Some federal loans have been paid off but I am still repaying others ◯ Repaying interest only ◯ Any other status
BB17IIDR *(Removed)*	Are you participating in an income-driven repayment plan for your federal student loans? ◯ Yes ◯ No
BB17IFDMOS *(Removed)*	How much do you typically pay each month on your federal student loans? Please provide the amount you pay each month, even if it is different from your minimum monthly payment. $ [ ].00 per month
BB17IFDMEST *(Removed)*	Please indicate the range that best represents the total current monthly payment for your federal student loans. Would you say it was... ◯ $0.00 ◯ $0.01 - $49.00 ◯ $50.00 - $99.99 ◯ $100.00 - $149.99 ◯ $150.00 - $199.99 ◯ $200.00 - $249.99 ◯ $250.00 - $499.99 ◯ $500.00 - $749.99 ◯ $750.00 - $999.99 ◯ $1,000.00 or more ◯ Don't know
BB17IUGPVAMT *(Removed)*	How much did you borrow in private loans for your undergraduate education prior to [BA COMPLETION DATE]? $ [ ].00 per month
BB17IUGPVEST *(Removed)*	Please indicate the range for how much you borrowed in private loans for your undergraduate education prior to [BA COMPLETION DATE]. Would you say it was... ◯ $0 ◯ $1 - $9,999.00 ◯ $10,000 - $19,999 ◯ $20,000 - $29,999 ◯ $30,000 - $39,999 ◯ $40,000 - $49,999 ◯ $50,000 - $59,999 ◯ $60,000 - $69,999 ◯ $70,000 - $79,999 ◯ $80,000 - $89,999 ◯ $90,000 - $99,999 ◯ $100,000 or more ◯ Don't know

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17IPVINT *(Removed)*	What is the current interest rate on your private loans? (If you have more than one private loan, enter the rate of your largest private loan.) [ ]%
BB17IEOUTLN *(Removed)*	Please indicate your level of stress regarding your student loans. Would you say your level of stress is... ◯ Very low ◯ Low ◯ Moderate ◯ High ◯ Very high
BB17ILNPROG *(Removed)*	Do you approve or disapprove of the PayLate Loan Repayment program? ◯ Approve ◯ Disapprove ◯ Don't know
BB17ILNPROGB *(Removed)*	Do you approve or disapprove of the Caves Loan Repayment program? ◯ Approve ◯ Disapprove ◯ Don't know
Postbaccalaureate Employment	
BB17DLICFILT *(Revised)*	A professional certification or license shows you are qualified to perform a specific job and includes things like Licensed Realtor, Certified Medical Assistant, Certified Construction Manager, or an IT certification. As of June 2017, did you hold an active professional certification or a state or industry license? (Do not include business licenses such as a liquor license or vending license.) ◯ Yes ◯ No
BB17DEMPJOBS *(Revised)*	How many job titles did you have at each of your employers? We are interested in all paid jobs, including full-time and part-time jobs, graduate assistantships, paid internships, and self-employment. [If SELF-EMPLOYED]: Employment that is per event or performance should be considered one job. (For example, if you were a musician, all events and performances as a musician would be considered one job. If you had more than one self-employed business, please count each business as a separate job title.) [Employer 1]: [ ] job title(s) [Employer n]: [ ] job title(s)
BB17DEMPLOY01 *(Removed)*	Please tell us about the first employer you had after completing your bachelor's degree in [BA DATE]. If you started working for an employer before graduation, but continued after graduation we would like to know about that employer first. What is the employer or company name (for example: IBM, Starbucks)? [ ]

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17DHIRE01 *(Removed)*	Which of the following hiring incentives did you receive, if any, when you began as a(n) [job title] with [employer]? *(Please check all that apply.)* ☐ Recruitment incentive ☐ Relocation incentive ☐ Student loan repayment ☐ Other ☐ None of these
BB17DLICOND01 *(Revised)*	Did you have a license that was required by a federal, state, or local government agency for the work you did as a(n) [job title]? ◯ Yes ◯ No
BB17DJBSAL01 *(Added)*	Were you a salaried employee as a(n) [job title] with [employer] prior to July 2017? (A salaried employee's pay does not vary with the number of hours worked.) ◯ Yes ◯ No
BB17DEMPHS01 *(Revised)*	How many hours per week [were you required to work/did you work (on average)] when you first started as a(n) [job title] with [employer]? ☐ hour(s) per week
BB17DEMPHC01 *(Revised)*	Prior to July 2017, did the number of hours you [were required to work/average number of hours worked] per week {[X hours]} change while you worked as a(n) [job title] with [employer]? ◯ Yes ◯ No
BB17DEMPHN01 *(Revised)*	Prior to July 2017, how many times did the average number of hours you [were required to work/worked] per week change while you worked as a(n) [job title] with [employer]? ☐ time(s)
BB17DEMPH101 *(Revised)*	What was the first change to the average number of hours you [were required to work/worked] per week? From: [starting hours] To: ☐ hours per week Date new hours began: *(Please select both a month and a year from the dropdowns.)* Month: - Select one - Year: - Select one -

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17DEMPH201 *(Revised)*	What was the second change to the average number of hours you [were required to work/worked] per week? From: [hours change 1] To: ☐ hours per week Date new hours began: *(Please select both a month and a year from the dropdowns.)* Month: - Select one - Year: - Select one -
BB17DEMPH301 *(Revised)*	What was the third change to the average number of hours you [were required to work/worked] per week? From: [hours change 2] To: ☐ hours per week Date new hours began: *(Please select both a month and a year from the dropdowns.)* Month: - Select one - Year: - Select one -
BB17DEMPH401 *(Revised)*	What was the last change to the average number of hours you [were required to work/worked] per week? From: [hours change 3] To: ☐ hours per week Date new hours began: *(Please select both a month and a year from the dropdowns.)* Month: - Select one - Year: - Select one -
BB17DOT01 *(Removed)*	Why are you working [X] hours per week as a(n) [job title] with [employer]? *(Please check all that apply.)* ☐ To earn extra money ☐ Responsibilities of your position demand more than 40 hours per week ☐ Other reason not listed

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17DNSFA01 *(Removed)*	Do your job duties as a(n) [job title] require a bachelor's degree or higher? ○ Yes ○ No
BB17DLICREL01 *(Removed)*	Is your professional certification or license related to the work you do as a(n) [job title]? ○ Yes ○ No
BB17DOTHJOB01 *(Removed)*	Other than your job as: [job title 1] [job title n] Have you had any jobs other than those listed above at [employer name] at any point after [BA DATE]? Please consider a change in your primary duties, not just your job title, as a unique job. ○ Yes ○ No
BB17DOTHEMP01 *(Removed)*	Other than your employment for: [employer 1] [employer n] Have you had any employers other than those listed above at any point after [BA DATE]? ○ Yes ○ No
BB17DSIDEJB *(Added)*	Not including the work you have already reported, between [BA COMPLETION DATE] and June 2017 did you do any informal work or side jobs for pay that did not have a formal contract? Examples could include babysitting, dog walking, yard care, tutoring, etc. ○ Yes ○ No
BB17DSIDEPAY *(Added)*	Between [BA DATE COMPLETION] and June 2017, about how much money did you make from your informal work or side jobs? $ [ ].00
BB17DNW01 *(Revised)*	Between [[span of dates where not enrolled and not working], when you were both not working and not enrolled in school, were you... *(Please check all that apply.)* ☐ Working in an unpaid internship ☐ Looking for work ☐ Taking a break from work ☐ Not working due to personal health issues (for example: disabled) ☐ Caring for children ☐ Caring for other family members ☐ Something else ☐ Always either working and/or enrolled in school after completing bachelor's degree requirements in [BA COMPLETION DATE]

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17DMAIN01 *(Removed)*	What were you primarily doing when you were not working during this time ([span of dates where not enrolled and not working])? ○ Looking for work ○ Taking a break from work ○ Enrolled in school ○ Not working due to personal health issues (for example: disabled) ○ Caring for children ○ Caring for other family members ○ Something else
BB17DSEARCH *(Removed)*	Are you currently looking for a job? (Indicate "yes" if you are looking for full-time, part-time, or graduate school jobs such as assistantships and fellowships.) ○ Yes ○ No
Teaching	
BB17EHOWPREP *(Revised)*	Which of the following steps have you taken to prepare to teach at the pre-K through 12 level? *(Please check all that apply.)* ☐ Prepared at a college or university that provides certification ☐ Online-only certification program ☐ Alternative entry program such as Teach for America or Troops to Teachers ☐ Completed a student teaching assignment ☐ None of these
BB17ETCHLIKE *(Removed)*	What is the likelihood that you will teach at the pre-K through 12 level now or in the future? Are you... ○ Very unlikely ○ Somewhat likely ○ Neither unlikely nor likely ○ Somewhat unlikely ○ Very likely
BB17EALTCRT *(Removed)*	Did you enter teaching through an alternative route to certification? (Teach For America and Troops to Teachers are examples of alternative routes to certification.) ○ Yes ○ No
BB17EPRAXIS *(Removed)*	Have you taken the *Praxis Core* Academic Skills for Educators, formerly *Praxis I*, exam? ○ Yes ○ No
BB17EPXSSC *(Removed)*	What was your score on the *Praxis* Core Academic Skills for Educators, formerly *Praxis I*, exam? Score: ☐
BB17EMOVE *(Removed)*	How likely do you think it is that you will move into a non-teaching job in elementary or secondary education (for example: administrator or school counselor)? ○ Not at all likely ○ Somewhat likely ○ Likely ○ Very Likely

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

<table>
<tr><th>Section and Item name</th><th>Description</th></tr>
<tr><td colspan="2">Background</td></tr>
<tr><td>BB17FLNGCLS
(Removed)</td><td>When was the last time you took a class to learn [non-English language]?

◯ Currently taking a class
◯ Within the last 2 years
◯ 2 to 5 years ago
◯ More than 5 years ago
◯ Have never taken a formal class</td></tr>
<tr><td>BB17FLNGPST
(Removed)</td><td>Growing up, did you speak [non-English language] at home always, sometimes, or never?

◯ Always
◯ Sometimes
◯ Never</td></tr>
<tr><td>BB17FLNGCOM
(Removed)</td><td>In comparison to your English, how proficient in [non-English language] are you in the following...
<table>
<tr><th></th><th>More proficient</th><th>Same as</th><th>Less proficient</th><th>Not proficient at all</th></tr>
<tr><td>Writing it?</td><td>◯</td><td>◯</td><td>◯</td><td>◯</td></tr>
<tr><td>Understanding it when it is spoken to you?</td><td>◯</td><td>◯</td><td>◯</td><td>◯</td></tr>
<tr><td>Speaking it?</td><td>◯</td><td>◯</td><td>◯</td><td>◯</td></tr>
<tr><td>Reading it?</td><td>◯</td><td>◯</td><td>◯</td><td>◯</td></tr>
</table></td></tr>
<tr><td>BB17FLNGCUR
(Removed)</td><td>Do you regularly interact with others in [non-English language]?

◯ Yes
◯ No</td></tr>
<tr><td>BB17FLNGPLN
(Removed)</td><td>Do you plan to use [non-English language] in your career?

◯ Yes
◯ No</td></tr>
<tr><td>BB17FSEX
(Added)</td><td>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</td></tr>
<tr><td>BB17FGENDER
(Added)</td><td>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
☐ A different gender identity
☐ Questioning or unsure</td></tr>
</table>

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

<table>
<tr><th>Section and Item name</th><th>Description</th></tr>
<tr><td>BB17FLGBTQ
(Added)</td><td>Do you think of yourself as...

◯ Lesbian or gay, that is, homosexual
◯ Straight, that is, heterosexual
◯ Bisexual
◯ Another sexual orientation
◯ Questioning or unsure</td></tr>
<tr><td>BB17FAWARE
(Added)</td><td>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.)?

<table><tr><th></th><th>Most</th><th>Some</th><th>None</th></tr><tr><td>Members of your immediate family (e.g. family and siblings)</td><td>◯</td><td>◯</td><td>◯</td></tr><tr><td>People you socialize with (e.g. friends and acquaintances)</td><td>◯</td><td>◯</td><td>◯</td></tr><tr><td>People you work with (e.g. supervisors and coworkers)</td><td>◯</td><td>◯</td><td>◯</td></tr></table></td></tr>
<tr><td>BB17FVOTE
(Removed)</td><td>Are you registered to vote in the state in which you currently live?

◯ Yes
◯ No</td></tr>
<tr><td>BB17FVTNEL
(Added)</td><td>Did you vote in the November 2016 presidential election?

◯ Yes
◯ No</td></tr>
<tr><td>BB17FDAYAMT
(Added)</td><td>How much (on average) do you [or your spouse or your partner] pay each month for childcare?

$ [ ] .00 per month</td></tr>
<tr><td>BB17FDAYDAT
(Added)</td><td>In what month and year did you begin paying the childcare amount of [$x.xx] per month?

Month: -Select one-

Year: -Select one-</td></tr>
<tr><td>BB17FDAYPRV
(Added)</td><td>Did you pay for your childcare in [MONTH BEFORE CURRENT CHILDCARE PAYMENT BEGAN]?

◯ Yes
◯ No</td></tr>
</table>

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17FDAYMOS *(Added)*	What months between [BA COMPLETION DATE] and [MONTH BEFORE CURRENT CHILDCARE PAYMENT BEGAN] were you paying for childcare? 2015 July August September October November December Select/unselect all 2016 January, July February, August March, September April, October May, November June, December Select/unselect all 2017 January, July February, August March, September April, October May, November June, December Select/unselect all 2018 January February March April May Select/unselect all
BB17FDAYAMT2 *(Added)*	For the months that you paid for childcare between [BA COMPLETION DATE] and [MONTH BEFORE CURRENT CHILDCARE PAYMENT BEGAN], what was your average monthly cost? (if you do not know the exact amount, please provide your best guess.) $ ____ .00 per month ☐ Don't know

See notes at end of table.

Table B-43. Detail of field test items removed, revised, or added to the full-scale instrument, by section and item name: 2016—Continued

Section and Item name	Description
BB17FCCPAY *(Revised)*	What was the total amount you paid toward your credit card statement last month? $ _____ .00
BB17FFIN1YR *(Removed)*	Finally, for the last few questions, we want to learn more about graduates' understanding of broad financial concepts. Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After 1 year, how much would you be able to buy with the money in this account? ◯ More than today ◯ Exactly the same ◯ Less than today
BB17FFIN5YR *(Removed)*	Suppose you had $100 in a savings account and the interest was 2 percent per year. After 5 years, how much do you think you would have in the account if you left the money to grow? ◯ More than $102 ◯ Exactly $102 ◯ Less than $102
BB17FSTOCK *(Removed)*	Is this statement true or false? Buying a single company's stock usually provides a safer return than a stock mutual fund. ◯ True ◯ False ◯ Don't know
Incentives	
RESUME1 *(Added)*	In addition to your survey responses, we would like to learn more about your employment experiences by offering you the option to upload your resume. Your resume will not be disclosed, or used, in any personally identifiable form outside of this survey. Would you like to upload your resume? ◯ Yes, upload resume now ◯ No, I do not want to upload my resume ◯ I do not have a resume
RESUPLOAD *(Added)*	Please click the "Upload Resume" button to locate your resume and start the upload process. Once your resume has been uploaded, click "Next."
RESUMEDESC *(Added)*	Thank you for uploading your resume. Thinking about your employment since completing your bachelor's degree, which of the following best describes your resume? ◯ Up to date and accurately reflects employment history ◯ Mostly up to date and reflects a general employment history ◯ Not up to date or excludes several employers

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Field Test.

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Appendix D. Data Elements for Full-scale Survey

The core data elements used in the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) full-scale survey covered general topics that were organized into six key content areas: Eligibility, Undergraduate Education, Postbaccalaureate Education and Training, Financial Aid, Postbaccalaureate Employment, Teaching, and Background. Table D-1 provides a list of the data elements by content area.

Some data elements were only administered to certain subgroups of respondents, as also noted in table D-1. For example, respondents who indicated being married or living with a partner in marriage like relationship at the time of completing the B&B:16/17 full-scale survey were administered an additional set of questions about their spouse or partner's employment, income, postsecondary education, and student loan borrowing and repayment.

Table D-1. Data elements, by content area: 2017

Content area	Data element
Eligibility	Confirm award of bachelor's degree between July 1, 2015 and June 30, 2017
	Confirm completion of bachelor's degree requirements between July 1, 2015 and June 30, 2016
	Confirm completion of bachelor's degree at NPSAS institution
	Marital status / financial responsibilities shared with another / household composition
Undergraduate education	Major(s) or field(s) of study
	Number of times formally changed major
	Continuous enrollment at NPSAS institution
	Earned undergraduate certificate/diploma or associate's degree before bachelor's degree at NPSAS institution
	Award date of undergraduate certificate/diploma or associate's degree earned at NPSAS institution
	Undergraduate enrollment at other postsecondary schools between high school and bachelor's degree: • Start and end date of enrollment • Breaks in enrollment • Nondegree or degree/certificate program classes • Degree/certificate earned / data awarded • Credits attempted to transfer from other postsecondary enrollment / proportion accepted at NPSAS institution
	GPA at NPSAS institution
	Activities during undergraduate education
	Satisfaction with quality of education received at the NPSAS Institution
	Satisfaction with undergraduate major choice

See notes at end of table.

Table D-1. Data elements, by content area: 2017—Continued

Content area	Data element
Postbaccalaureate education/training	Institutions attended since completing bachelor's degree
	Degree or certificate program enrollment(s) at each institution (respondents with postbaccalaureate enrollment only): • Degree or certificate type • Primary major • Date first enrolled for degree or certificate and date last enrolled for degree or certificate • Enrollment intensity (full-time, part-time, or mixed) • Received master's degree en route to doctoral degree • Online courses attended • How paid for degree or certificate • Attended institution for additional degree or certificate
	Nondegree coursework and reasons for enrolling in nondegree coursework
	Main reason for choosing field of study
	Highest degree ever expected
	Graduate or professional school exam(s) taken
Financial aid	Type of undergraduate student loans
	Private student loan amount borrowed since completing bachelor's degree
	Private student loan debt repayment status, interest rate, and monthly payment(s)
	Help from family or friends paying back student loans
Postbaccalaureate employment	Worked for pay or held a paid internship since completing bachelor's degree
	Held an active professional certification or state or industry license
	Number of employer(s) between completing bachelor's degree and June 2017
	Employer information for each employer between completing bachelor's degree and June 2017: • Employer name • Number of job title(s) held • Type of company or organization • Primary industry of employer • Number of employees company wide • Ways in which heard of employer • Months worked at employer
	For each job title at each employer between completing bachelor's degree and June 2017: • Job title • Job was a paid internship • Professional certification or license required to do job • For each teaching position (preK–12 teachers only): – Type of position (regular, short or long-term substitute, teacher's aide, support, itinerant, student teacher) – School name – Teaching experience (grades and subjects taught, felt adequately prepared) • Date started job • Earnings and pay changes • Hours worked and changes to average hours worked • Job related to bachelor's degree major • Job considered part of career • Job satisfaction

See notes at end of table.

Table D-1. Data elements, by content area: 2017—Continued

Content area	Data element
Postbaccalaureate employment—Continued	Side jobs and pay
	Activities while not working
	Primarily student or employee
	Months actively looked for work between completing bachelor's degree and June 2017
	Job search activities
	Important factors when choosing a job
Teaching	Identify teachers and prospective teachers (current or past teachers, made formal preparations for teaching career or considered teaching)
	Applying for teaching positions / received offers
	Teacher preparation (college/university program, online program, alternate route, and student teaching)
	Teaching certification and subject area(s) of certification (preK–12 teachers only)
	A Teacher Education Assistance for College and Higher Education (TEACH) Grant Program awareness
	Loan forgiveness program (awareness, influence on decision to become a teacher, and participation)
	Factors influenced decision to become a preK–12 teacher (preK–12 teachers only)
	First teaching position (participated in formal teacher induction/mentor program, felt adequately prepared, received help from school or school district) (preK–12 teachers only)
	Left teaching (date and reason(s) left teaching)
Background	Date of birth
	Citizenship and nativity status
	Language (native language, second language, and non-English language use in job(s))
	Biological sex, gender identity, sexual orientation, and sexual orientation awareness
	Military status
	Civic and volunteer activity (voting history, number of hours volunteered)
	Total number of dependents and age of dependent children
	Childcare costs for dependent children (respondents with dependents only)
	Current and previous housing payments and home value
	Current and previous vehicle loan payment
	Number of credit cards and balance
	Retirement fund(s) (employer and non-employer based)
	Financial security and monetary donations to NPSAS institution
	Income for calendar year 2016 from all sources
	Spouse's or partner's information (employment status, income for 2016, highest level of education completed, attended college or graduate school in 2016-17 school year, amount borrowed or owed on student loans, repayment amount) (respondents with a spouse or partner only)
	Disability status
	Perception and influence of education costs
	Financial stress
	Financial literacy

NOTE: NPSAS = National Postsecondary Student Aid Study. preK = prekindergarten. GPA = grade point average
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Appendix E. Facsimile of Full-scale Instrument

BB17AAWRDT
To begin, in what month and year were you awarded your bachelor's degree?

- Month:
  January - December
- Year:
  Before 2014 - 2017

□ Check here if you were never awarded your degree

BB17ASAME
The date when you completed your requirements and the date when you were awarded your bachelor's degree may be different. In this survey, we will refer to the date you completed the requirements for your bachelor's degree. Did you **complete the requirements** for your bachelor's degree in [BA AWARD DATE]?

- 1=Yes
- 0=No

BB17AWHEN
In what month and year did you **complete the requirements** for your bachelor's degree during the 2015-16 school year (July 1, 2015 - June 30, 2016)?

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17AWHYSM
Do you know why you were listed as having completed the requirements for a bachelor's degree between July 1, 2015 and June 30, 2016?

BB17ANPSCH
Was the bachelor's degree you completed in [BA COMPLETION DATE] from [NPSAS INSTITUTION]?

- 1=Yes
- 0=No, a different school
  School name

BB17ABYE
We will review your responses and may need to contact you again.Please provide your e-mail address:

- Please provide an address where you can be contacted: Street Address:
- City:
- Zip Code:
- State:
- □ Address is an International Address
- Foreign Address:
- Foreign City:
- Foreign State/Province:
- Foreign Country:
- Foreign Zip/Postal Code:

- International Phone: 011-BB17AMARR

So [{if USERMODE = TIO} I {else} we] can customize this survey, [{if USERMODE = TIO} I {else} we] need to ask a few questions about you and your household. What is your current marital status?

- 1=Single, never married
- 2=Married
- 3=Separated
- 4=Divorced
- 5=Widowed
- 6=Living with partner in a marriage-like relationship

BB17AMARSMY

In what month and year were you married?

- Month:
  January - December
- Year:
  Before 1980 – 2018

BB17AHCOMP

With whom do you currently live?

(Please choose all that apply)

- Live alone
- Spouse or domestic partner
- Parents [{if married} or spouse's parents {if living with partner} or partner's parents]
- Other relatives (for example, siblings or grandparents)
- Children and/or other dependents
- With someone else (for example, one or more roommates)
  1=Yes
  0=No

BB17AFINCON

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

BB17AFINWHO

With whom in your household are you sharing financial responsibilities and decisions?

- Spouse or domestic partner
- Boyfriend or girlfriend
- Parent(s)
- Sibling(s)
- Friend(s) or roommate(s)
- Different individual(s) not previously described

BB17BINTRO
Before we continue, please note that most questions will focus on your activities through June 2017 so that all survey participants report on the same time period.

The following set of questions focuses on your education experiences.

BB17BDBLMAJ
Did you have a double major for your bachelor's degree at [NPSAS INSTITUTION]?

- 1=Yes
- 0=No

BB17BNPVERMJ2
When we last spoke with you during the 2015-2016 school year, you told us you were majoring in [MAJOR 1] and [MAJOR 2]. Were your final majors for your bachelor's degree at [NPSAS INSTITUTION]

- [MAJOR 1]
- [MAJOR 2]
  1=Yes
  0=No

BB17BVERNPMAJ
In the 2015-2016 school year, you told us you were majoring in [{if MAJOR 1 ne missing} [MAJOR 1] {else} [MAJOR 2]]. Was [{if MAJOR 1 ne missing} [MAJOR 1] {else} [MAJOR 2]] your final major for your bachelor's degree at [NPSAS INSTITUTION]? [{If BB17BDBLMAJ = 1} (Since you indicated a double-major, we will ask you about your other major next.)]

- 1=Yes
- 0=No

BB17BNPMAJPT
What was your major or field of study for your bachelor's degree at [NPSAS INSTITUTION]? (If you can't find your major, click "Major not listed" or "Next.")

- Major:

BB17BNPMJ2PT
What was your second major or field of study for your bachelor's degree at [NPSAS INSTITUTION]?

(If you can't find your major, click "Major not listed" or "Next.")

- Major:

BB17BNPCHNM
How many times did you formally change your major for your bachelor's degree at [NPSAS INSTITUTION]?

- 0=None
- 1=One
- 2=More than one

BB17BNPOMAJPT
What was your original declared major for your bachelor's degree at [NPSAS INSTITUTION]?

(If you can't find your major, click "Major not listed" or "Next.")

- Major:

BB17BNPCONT
Between the date you were first enrolled at [NPSAS INSTITUTION] for your bachelor's degree and when you completed the requirements for your degree in [BA COMPLETION DATE], did you take any breaks from [NPSAS INSTITUTION] that lasted more than four months?

- 1=Yes
- 0=No

BB17BNPUGDEG
Before completing the requirements for your bachelor's degree at [NPSAS INSTITUTION], did you earn an undergraduate certificate or diploma or an associate's degree at [NPSAS INSTITUTION]?

- 0=No
- 1=Yes, undergraduate certificate or diploma
- 2=Yes, associate's degree
- 3=Yes, both undergraduate certificate or diploma and associate's degree

BB17BNPAWDAT
In what month and year did you receive your undergraduate certificate or diploma from [NPSAS INSTITUTION]? (If you have received more than one undergraduate certificate or diploma from [NPSAS INSTITUTION] please report the date for the most recent.)

- Month:
  January - December
- Year:
  Before 1980 - 2016

BB17BOTHSCH
Other than [NPSAS INSTITUTION], did you attend any colleges, universities, or trade schools as an undergraduate student between the time you completed your high school requirements and [BA COMPLETION DATE]? Please include summer enrollment and any other undergraduate classes you have taken that earned college credit. **Do not include enrollment for credit at any schools where you studied abroad**.

- 1=Yes
- 0=No

BB17BUGNUM
Other than [NPSAS INSTITUTION], how many colleges, universities, or trade schools did you attend between the time you completed your high school requirements and [BA COMPLETION DATE]?

- |other(s)

BB17BSCHPT01

You told us you attended [NUMBER OF OTHER SCHOOLS] other schools between high school and completing the requirements for your bachelor's degree at [NPSAS INSTITUTION]. What is another school you attended?

(If you can't find your school, click "School not listed" or "Next.")

- School name:

BB17BBDAT01
In what month and year were you **first enrolled** at [UG SCHOOL NAME]?

- Month:
  January - December
- Year:
  Before 1980 - 2016

BB17BEDAT01
In what month and year were you **last enrolled** at [UG SCHOOL NAME] before completing your bachelor's degree requirements at [NPSAS INSTITUTION] in [BA COMPLETION DATE]?

- Month:
  January - December
- Year:
  Before 1980 – 2016

BB17BCONT01
Between [DATE BEGAN INSTITUTION, in words] and [DATE LEFT INSTITUTION, in words], did you take any breaks from [UG SCHOOL NAME] that lasted more than four months?

- 1=Yes
- 0=No

BB17BODEG01
Before you completed your bachelor's degree requirements from [NPSAS INSTITUTION] in [BA COMPLETION DATE], were you enrolled in non-degree program classes at [UG SCHOOL NAME], or were you working on a degree or certificate separate from your bachelor's degree at [NPSAS INSTITUTION]?

- 1=Undergraduate level classes, no degree program
- 2=Undergraduate certificate or diploma, including those leading to a license (example: cosmetology)
- 3=Associate's degree
- 4=Bachelor's degree

BB17BERN01
Did you complete your program of study and receive your [UG DEGREE NAME] from [UG SCHOOL NAME]?

- 1=Yes
- 0=No

BB17BUGYR01
What was your year or level during your last term of enrollment at [UG SCHOOL NAME] for your [UG DEGREE NAME] before your graduation from [NPSAS INSTITUTION] in [BA COMPLETION DATE]?

- 1=First year or freshman
- 2=Second year or sophomore
- 3=Third year or junior
- 4=Fourth year or senior
- 5=Fifth year or higher undergraduate
- 6=Unclassified undergraduate

BB17BAWDAT01
In what month and year did you complete the requirements for your [UG DEGREE NAME] from [UG SCHOOL NAME]?

- Month:
  January - December
- Year:
  Before 1980 - 2016

BB17BENR01
Were you enrolled and taking classes at both [UG SCHOOL NAME] and [NPSAS INSTITUTION] at the same time?

- 1=Yes
- 0=No

BB17BTNS01
Did you attempt to transfer any credits to [NPSAS INSTITUTION] from [UG SCHOOL NAME]?

- 1=Yes
- 0=No

BB17BTRNC01
Were all, some, or none of those credits accepted by [NPSAS INSTITUTION]?

- 1=All
- 2=Some
- 3=None

BB17BGPATYP
Was your grade point average (GPA) at [NPSAS INSTITUTION] measured on a 4.00 scale?

- 1=Yes
- 0=No

□ Not applicable, [NPSAS INSTITUTION] does not have GPA.

BB17BGPA
What was your cumulative GPA in all classes at [NPSAS INSTITUTION] for your bachelor's degree?

- | (Range: 0.00 to 4.00)

BB17BGPAEST
Overall, which best describes your grades at [NPSAS INSTITUTION]?

- 1=Mostly A's (3.75 and above)
- 2=A's and B's (3.25-3.74)
- 3=Mostly B's (2.75-3.24)
- 4=B's and C's (2.25-2.74)
- 5=Mostly C's (1.75-2.24)
- 6=C's and D's (1.25-1.74)
- 7=Mostly D's or below (1.24 or below)
- -1=Don't know my grades
- 9=I would describe my grades differently than what is listed here

BB17BNPEXP
While enrolled at [NPSAS INSTITUTION] for your bachelor's degree, did you...

Ever get placed on academic probation?

Graduate with academic honors (for example, magna cum laude, cum laude, etc.)?

- 1=Yes
- 0=No

BB17BEXCUR
When you were working on your bachelor's degree at [NPSAS INSTITUTION], were you involved in

- A fraternity or sorority
- Extracurricular clubs or groups
- Intramural or recreational sports
- Intercollegiate sports (for example, NCAA, NAIA)
  1=Yes
  0=No
  2=Not offered at [NPSAS INSTITUTION]

BB17BINTERN
Prior to completing your bachelor's degree in [BA COMPLETION DATE], did you participate in any of the following?

- Paid internship
- Unpaid internship
- Co-operative experience
- Practicum
  1=Yes
  0=No

BB17BINCHO
[If USERMODE = WEB]: How satisfied are you with the quality of the undergraduate education you received at [NPSAS INSTITUTION]? [If USERMODE = TIO]: How satisfied are you with the quality of the undergraduate education you received at [NPSAS INSTITUTION]? Are you...

- 1=Very satisfied
- 2=Satisfied
- 3=Neither satisfied nor dissatisfied
- 4=Dissatisfied
- 5=Very dissatisfied

BB17BMAJCHO
How satisfied are you with your choice of undergraduate [{If BB17BDBLMAJ=1} majors or fields of study? {else if BB17BDBLMAJ=0} major or field of study? {else} major(s) or field(s) of study?] [If USERMODE = TIO] Are you

- 1=Very satisfied
- 2=Satisfied
- 3=Neither satisfied nor dissatisfied
- 4=Dissatisfied
- 5=Very dissatisfied

BB17BCOBEN
Do you think your undergraduate education was worth its financial cost?

- 1=Yes
- 0=No

BB17CPSTGRD
Did you attend a college, university, or trade school for an additional degree or certificate at any point between completing your bachelor's degree in [BA COMPLETION DATE] and June 2017?

- 1=Yes
- 0=No

BB17CNUMSCH
How many colleges, universities, or trade schools did you attend at any point between [BA COMPLETION DATE] and June 2017?

- | school(s)

BB17CSCHPT01
You told us you attended [BB17CNUMSCH] schools between [BA COMPLETION DATE] and June 2017. What is another school you attended?(If you can't find your school, click "School not listed" or "Next.")

- School name:

BB17CDEG01
What was the [{if degree iteration > 1} other] type of degree or certificate you worked on at [POST-BA SCHOOL NAME] between [BA COMPLETION DATE] and June 2017?

- 1=Undergraduate certificate or diploma, including those leading to a license
- 2=Associate's degree
- 3=Bachelor's degree
- 4=Post-baccalaureate certificate
- 5=Master's degree
- 6=Post-master's certificate
- 7=Doctoral degree--**professional practice** (including: chiropractic, dentistry, law, medicine, optometry, osteopathic medicine, pharmacy, podiatry, or veterinary medicine)
- 8=Doctoral degree--**research/scholarship** (including the PhD, EdD, or other degrees that require original research or artistic achievement)
- 9=Doctoral degree--**other** (any doctor's degree that is not research/scholarship or professional practice)

BB17CPTMAJ01
As of June 2017, what was your primary major or field of study for [if iteration=1: your/else: this] [POST-BA DEGREE NAME] at [POST-BA SCHOOL NAME]? (If you can't find your major or field of study, click "Major not listed" or "Next.")

- Major:
  - □ Major not found in results

BB17CENMON01
In which months between [BA COMPLETION DATE] and June 2017 were you enrolled at [POST-BA SCHOOL NAME] for [If iteration=1: your/Else: this] [POST-BA DEGREE NAME] [If BB17CPTMAJ01 ne missing: in [BB17CPTMAJ01]/Else:]?

- [Calendar displaying months [BA COMPLETION DATE] – June 2017]

BB17CENST01
For the period of time you attended [POST-BA SCHOOL NAME] between [BA COMPLETION DATE] and June 2017 for [If iteration=1: your/Else: this] [POST-BA DEGREE NAME] [If BB17CPTMAJ01 ne missing: in [BB17CPTMAJ01]/Else:], 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

BB17CERN01
Did you complete your program of study and receive [{if iteration=1} your {else} this] [POST-BA DEGREE NAME] [if BB17CPTMAJ01 ne missing}in [BB17CPTMAJ01]] from [POST-BA SCHOOL NAME] before July 2017?

- 1=Yes
- 0=No

BB17CDGMY01
In what month and year before July 2017 was [{if iteration=1} your {else} this] [POST-BA DEGREE NAME] [{if BB17CPTMAJ01 ne missing} in [BB17CPTMAJ01]] awarded by [POST-BA SCHOOL NAME]?

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17CENRTDG01
Did you receive a master's degree prior to July 2017 from [POST-BA SCHOOL NAME] while enrolled in your [POST-BA DEGREE NAME] 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

BB17CENRTMY01
In what month and year prior to July 2017 did you receive your master's degree from [POST-BA SCHOOL NAME]?

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17CONLIN01
As part of [If iteration=1: your/Else: this] [POST-BA DEGREE NAME] [If BB17CPTMAJ01 ne missing: in [BB17CPTMAJ01]/Else:] at [POST-BA SCHOOL NAME], did you take any courses that were taught primarily online prior to July 2017?

- 1=Yes
- 0=No

BB17CFINAIDG01
Prior to July 2017, which of the following did you receive or use to pay for [If iteration=1: your/Else: this] [POST-BA DEGREE NAME] [If BB17CPTMAJ01 ne missing: in [BB17CPTMAJ01]/Else:] at [POST-BA SCHOOL NAME]?

(Please choose all that apply)

- Federal student loans
- Private student loans
- Grants or scholarships
- Assistantships or fellowships
- Federal Work-Study
- Employer assistance
- Personal loan or gift
- Your own money
- Other

1=Yes
0=No

BB17COTH01
Other than your: **[POST-BA DEGREE NAME]** [{if BB17CPTMAJ01 ne missing} in [BB17CPTMAJ01]] (from loop 1) **[POST-BA DEGREE NAME]** [{if BB17CPTMAJ01 ne missing} in [BB17CPTMAJ01]] (from loop 2) Did you attend [POST-BA SCHOOL NAME] for any additional degrees or certificates at any point between [BA COMPLETION DATE] and June 2017?

- 1=Yes
- 0=No

BB17CNDGCWK
At any point between when you completed your bachelor's degree requirements in [BA COMPLETION DATE] and June 2017, did you attend a college, university, or trade school for any coursework that was 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

BB17CRSCWK
Why did you decide to take non-degree coursework?

(Please choose all that apply)

- Needed for current employment
- Needed for career goals
- Needed for educational goals (for example: graduate school prerequisites)
- Desired for personal enrichment
- Other reason not listed
  1=Yes
  0=No

BB17CFACS
Of the following, which was the most important factor to you in choosing your field of postbaccalaureate/graduate level study?

- 1=Required for career path
- 2=Your aptitude in the field
- 3=Earnings potential
- 4=Ability to contribute to society via the field
- 5=Ability to balance work and family

BB17CEXPEVR
What is the highest level of education you **ever** expect to complete at any school?

(Provide your best guess even if you are not sure.)

- 4=Bachelor's degree (usually a 4-year degree)
- 5=Graduate level courses, no graduate degree or certificate expected
- 6=Post-baccalaureate certificate

- 7=Master's degree
- 8=Post-master's certificate
- 10=Professional doctoral degree (including: chiropractic, dentistry, law, medicine, etc.)
- 9=Doctoral degree, research/scholarship (including: PhD, EdD, etc.)

BB17CGRDEXM
Prior to July 2017, did you take any graduate or professional school entrance exams?

- 1=Yes
- 0=No

BB17CTESTS
Which of the following graduate or professional school entrance exam(s) did you take prior to July 2017?

(Please choose all that apply)

- GRE
- GRE Subject Test
- MCAT
- LSAT
- GMAT
- Other exam(s)
  1=Yes
  0=No

BB17IUGLN
Next, [{if USERMODE = TIO} I {else} we] have some questions about how you paid for your **undergraduate education**. Other than money you may have borrowed from family or friends, did you take out any type of student loans to help pay for your undergraduate education prior to completing the requirements for your bachelor's degree in [BA COMPLETION DATE]?

- 1=Yes
- 0=No
- -1=Don't know

BB17IUGLNTYP
Did you take out...

- Federal student loans (for example: Direct/Stafford Loans, Perkins Loans)
- Private student loans
- Other types of loans
  1=Yes
  0=No

BB17IPRVVER
Earlier in the survey you told us you received **private loans** for education you were enrolled in between completion of your bachelor's degree requirements in [BA COMPLETION DATE] and June 2017. Is that correct?

- 1=Yes
- 0=No

BB17IPBPVAMT
How much did you borrow in **private loans** between [BA COMPLETION DATE] and June 2017?

- $|.00
- Did not have any private student loans

BB17IPBPVEST
Please indicate the range for how much you borrowed in private loans between [BA COMPLETION DATE] and June 2017. 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
- □ Did not have any private student loans

BB17IPVREPAY
Were you repaying any of your **private loans** as of June 2017?

(Respond based on the status of any private student loans you had in June 2017, **including loans for your bachelor's degree and any taken out since earning your bachelor's degree**.)

- 1=Yes
- 0=No

BB17IPVNOPAY
Why were you not repaying your **private loans** as of June 2017?

- 1=Deferring payment in agreement with lender
- 2=Already paid off
- 3=Delinquent, not paying
- 4=Other

BB17IPVPAYMT
What was the repayment status of your private loans as of June 2017?

- Repaying the original payment amount
- Repaying a different payment amount due to loan modification, refinance, or extension
- Repaying after a loan delinquency or default
- Some private loans have been paid off but I am still repaying others
- Repaying interest only

- None of the above

BB17IPVINE
Please indicate the range that best represents the interest rate for your **private loans** as of June 2017. Would you say it was...

- 1=Less than 3.00%
- 2=3.00% - 4.99%
- 3=5.00% - 6.99%
- 4=7.00% - 8.99%
- 5=9.00% - 11.99%
- 6=12.00% - 14.99%
- 7=15.00% - 17.99%
- 8=18.00% - 20.99%
- 9=21.00% or higher
- -1=Don't know

BB17IPVMOS
As of June 2017, how much did you typically pay each month on your private loans? Please provide the amount you paid each month, even if it was different from your minimum monthly payment.

- $|.00 per month

BB17IPVEST
Please indicate the range that best represents the total monthly payment for your **private loans** as of June 2017. 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

BB17IELNPLAN
Over the past 12 months, were any of your student loan payments being paid in whole or in part by family or friends? [{If BB17AMARR in (2 6)} In your answer, please do not include any help that you may have received from your {if B17AMARR = 2} spouse. {else} partner.]

- 0=No
- 1=Yes, usually
- 2=Yes, occasionally

BB17DINTRO
In the next section, [{if USERMODE = TIO} I {else} we] would like to ask some questions about your employment between completing your bachelor's degree requirements in [BA COMPLETION DATE] and June 2017. We are interested in all paid employment, including full-time and part-time employment, [{if BB17CPSTGRD = 1} graduate assistantships,] paid internships, and self-employment.

BB17DANYJOBS
Did you work for pay at any time between completing your bachelor's degree in [BA COMPLETION DATE] and June 2017?

- 1=Yes
- 0=No

BB17DPINTRN
Did you have a paid internship at any time between [BA COMPLETION DATE] and June 2017?

- 1=Yes
- 0=No

BB17DLICFILT
As of June 2017, did you have an active professional certification or a state or industry license? Do not include business licenses, such as a liquor license or vending license.

(A professional certification or license shows you are qualified to perform a specific job and includes things like Licensed Realtor, Certified Medical Assistant, Certified Teacher, or an IT certification.)

- 1=Yes
- 0=No

BB17DNUMEMP
How many employers did you have between [BA COMPLETION DATE] and June 2017?

Count any self-employment or formal independent contractor work during this time as 1 employer. Do not count any informal work or side jobs in your number of employers. (For more information regarding what to include in your count of employers, click here.)

- | employer(s)

BB17DEMPNAM
What are the names of the [BB17DNUMEMP] employers you had between [BA COMPLETION DATE] and June 2017?(Please provide the names of your employers in order, beginning with the first employer you had after completing your bachelor's degree requirements in [BA COMPLETION DATE].)

- Employer 1:
- Employer 2:
- Employer 3:
- Employer 4:
- Employer 5:
- Employer 6:
- Employer 7:

BB17DEMPJOBS
How many job titles did you have at each of your employers? We are interested in all paid jobs, including full-time and part-time jobs, [{if BB17CPSTGRD = 1} graduate assistantships,] [{if BB17DPINTRN = 1} paid internships,] and self-employment. [{If SELF-EMPLOYED=1} Employment that is per event or performance should be considered one job. (For example, if you were a musician all events or performances as a musician would be considered one job. If you had more than one self-employed business, please count each business as a separate job title.)]

- [{If BB17DEMPNAM1 ne missing} BB17DEMPNAM1 {else if BB17DNUMEMP > 1} Employer 1] | job title(s)
- [{If BB17DEMPNAM2 ne missing} BB17DEMPNAM2 {else} Employer 2] | job title(s)
- [{If BB17DEMPNAM3 ne missing} BB17DEMPNAM3 {else} Employer 3] | job title(s)
- [{If BB17DEMPNAM4 ne missing} BB17DEMPNAM4 {else} Employer 4] | job title(s)
- [{If BB17DEMPNAM5 ne missing} BB17DEMPNAM5 {else} Employer 5] | job title(s)
- [{If BB17DEMPNAM6 ne missing} BB17DEMPNAM6 {else} Employer 6] | job title(s)
- [{If BB17DEMPNAM7 ne missing} BB17DEMPNAM7 {else} Employer 7] | job title(s)

BB17DZIPPL01
Thanks. Now we'd like to ask you some questions about your employment with [EMPLOYER NAME].] Did you primarily work for [EMPLOYER NAME] in

- 1=[BB17DEMPZIPEX01] ([BB17DEMPCYEX01], [BB17DEMPSTEX01] from iteration 1
- 2=[BB17DEMPZIP01] ([BB17DEMPCY01], [BB17DEMPST01] from iteration 2
- 3=[BB17DEMPZIP01] ([BB17DEMPCY01], [BB17DEMPST01] from iteration 3
- 4=[BB17DEMPZIP01] ([BB17DEMPCY01], [BB17DEMPST01] from iteration 4
- 5=[BB17DEMPZIP01] ([BB17DEMPCY01], [BB17DEMPST01] from iteration 5
- 6=[BB17DEMPZIP01] ([BB17DEMPCY01], [BB17DEMPST01] from iteration 6
- 7=[BB17DEMPZIP01] ([BB17DEMPCY01], [BB17DEMPST01] from iteration 7
- 99=A different ZIP code
- 8=I don't have a primary location

BB17DJBZIPEX01
What was the ZIP code for the primary location where you worked with [EMPLOYER NAME]? [All get parenthetical statement]: (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.")

- Check here if the location is not in the United States or a US territory
- Employer zip code
- Employer city:
- Employer state:
- □ No primary location for this job

BB17DEMPTYP01
What type of company or organization is [EMPLOYER NAME]? Is it...

- 1=The school where you were enrolled as a student
- 2=A for-profit company
- 3=A nonprofit company or organization
- 4=A local, state, or federal government (including public schools and public universities)

- 5=The military (including civilian employees of the military)
- 6=Other

BB17D1IND01
Would you classify [{if SELF-EMPLOYED = 1} the primary industry of your self-employment? {else} the primary industry for [EMPLOYER NAME] as

- 1=Education
- 2=Healthcare
- 3=Retail sales
- 4=Government
- 5=Something else

BB17DEDIND01
Which of the following best describes the education level of [EMPLOYER NAME]?

- 1=Preschool or Pre-K
- 2=K-12 school
- 3=College, university, trade school, other postsecondary institution
- 4=Education support services (non-government)
- 5=Other

BB17D2IND01
[{If BB17D1IND01 ne missing} Thanks. Would you say [EMPLOYER NAME]'s primary industry is... {else} Would you say [EMPLOYER NAME]'s primary industry is...]

- 5=Professional, scientific, and technical services
- 6=Food service and accommodations
- 7=Financial and insurance
- 8=Something else

BB17DINDTX01
What is [{if SELF-EMPLOYED = 1} the primary industry of your self-employment? {else} the primary industry for [EMPLOYER NAME]?](An industry is a way of classifying the primary business activity or service of a company or organization. For example, if you were a nurse working for an elementary school, you would report your employer's industry as education.)

- Industry:

BB17DNUMPL01
How many employees does [EMPLOYER NAME] have company-wide and not just at your specific location? Would you say...

- 1=1-5 employees
- 2=6-25 employees
- 3=26-50 employees
- 4=51-100 employees
- 5=101-1,000 employees
- 6=More than 1,000 employees

BB17DFNDJB01
How did you hear about your job with [EMPLOYER NAME]?

(Please choose all that apply)

- Friend or family member
- Internship
- Headhunter or recruiter
- Online job posting
- Colleague or mentor
- Faculty member or alumni
- Direct inquiry (for example: contacting employer directly)
- Already working for [EMPLOYER NAME]
- Other
  1=Yes
  0=No

BB17DWKMON01
Between [BA COMPLETION DATE] and June 2017, in which months were you [{if SELF-EMPLOYED = 1} self-employed {else} employed with [EMPLOYER NAME]?

[Calendar displaying months: [BA COMPLETION DATE] – June 2017]

- □ Also worked with [EMPLOYER NAME] prior to [BA COMPLETION DATE]

BB17DJBIN01
Was this other job with [EMPLOYER NAME] a paid internship?

- 1=Yes
- 0=No

BB17DOCCEX01
Now, [{if USERMODE = TIO} I'd {else} we'd] like to classify your next job [at EMPLOYER NAME]. [{If USERMODE = TIO} What was your next job title [at EMPLOYER NAME] so I can select the closest match from the options returned? {else} Enter your next job title [at EMPLOYER NAME] 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.")

BB17DLICOND01
Earlier in the survey you indicated having a professional certification or a state or industry license.

Was your professional certification or license required by a federal, state, or local government agency for the work you did [{If job title missing]} at your job {else} as a(n) [JOB TITLE]]?

- 1=Yes
- 0=No

BB17EJBTP01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, what {else} What] type of pre-K through 12th grade teaching position did you have working as a(n) [JOB TITLE] [{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]?

- 1=Regular classroom teacher (full- or part-time)

- 2=Itinerant teacher
- 3=Support teacher
- 4=Teacher's aide
- 5=Short-term substitute
- 6=Long-term substitute
- 7=Student teacher
- 8=Other teaching position

BB17EJBSPT01
What was the name of the school where you worked? (Your employer name and your school name may be the same. If you can't find your school, click School not listed or "Next.")

- 1=A public school operated by a school/county district
- 2=A private Catholic school
- 3=A private school--other religious affiliation
- 4=A private school--no religious affiliation
- 5=A public school operated by state/federal agency (ex: BIA, DOD, prison school)
- 6=Other (charter school, hospital school)

BB17EJBGR01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, what {else} What] were the lowest and highest grades that you taught as a(n) [JOB TITLE][[{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]]? (If you only taught one grade level, please select the same grade level for both the lowest and highest grades.)

- Lowest grade level:
  Pre-Kindergarten – Twelfth grade
- Highest grade level:
  Pre-Kindergarten – Twelfth grade
- □ Teach ungraded students

BB17EJBFD01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, what {else} What] subjects had you taught as a(n) [JOB TITLE] [[{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]]?

(Please choose all that apply)

- Early childhood education (pre-K)
- Elementary education (general curriculum in elementary or middle grades)
- General education in middle or secondary grades
- Mathematics or computer science
- Natural sciences (for example: biology, chemistry)
- Social sciences (for example: social studies, psychology)
- Special education
- Other subject areas not listed
  1=Yes
  0=No

BB17EFDOT01
What other subjects had you taught as a(n) [JOB TITLE] [[{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]]?

- Arts or music
- English as a second language (ESL)
- English or language arts
- Foreign languages
- Health, physical education
- Vocational, career, or technical education
- Miscellaneous (for example: driver education, humanities or liberal studies, library or information science, military science or ROTC, philosophy, religious studies, theology, or divinity)
- [If USERMODE = WEB] Other subject area not reported {else} Any other subject area not reported

BB17EPRMSB01
What was the primary subject you taught as a(n) [JOB TITLE] [{if SELF-EMPLOYED = 1}{else} with [EMPLOYER NAME]] [{If June 2017 selected on BB17DWKMON01 for respective employer} prior to July 2017 {else}]?

- 16=Early childhood education
- 1=Elementary education (general curriculum in elementary or middle grades)
- 12=General education in middle or secondary grades
- 8=Mathematics or computer science
- 9=Natural sciences (for example: biology, chemistry)
- 10=Social sciences (for example: social studies, psychology)
- 2=Special education
- 3=Arts and music
- 5=English as a second language (ESL)
- 4=English or language arts
- 6=Foreign languages
- 7=Health, physical education
- 11=Vocational, career, or technical education
- 13=Miscellaneous (for example: driver education, library or information science, military science or ROTC)
- 14=Other
- 15=[If 2 items selected on BB17EJBFD01 and/or BB17EFDOT01] Equal split among 2 subjects [else] Equal split among 2 or more subjects

BB17DUPCR01
Did you take junior or senior level courses in [PRIMARY SUBJECT TAUGHT] for your bachelor's degree at [NPSAS INSTITUTION]?

- 1=Yes
- 0=No

BB17EJBPR01
Did you feel adequately prepared to teach all of the subjects that you taught [{If June 2017 selected on BB17DWKMON01 for respective employer} prior to July 2017 {else}] as a(n) [JOB TITLE] [{if SELF-EMPLOYED}{else} with [EMPLOYER NAME]]?

- 1=Yes
- 0=No

BB17DSTDAT01
Earlier you told us you had [BB17DEMPJOB*] job(s) at [EMPLOYER NAME]. In which month and year did you first begin working [{If job title missing} at your job {else} as a(n) [JOB TITLE]] with [EMPLOYER NAME]?

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DBENANY01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, did {else} Did] you receive any benefits such as health insurance, retirement contributions, or paid vacations as a(n) [JOB TITLE] [{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]?

- 1=Yes
- 0=No

BB17DEMPSS01
Not including tips, bonuses, or commissions, how much did you make when you first started working as a(n) [JOB TITLE] [{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]?(If you are unsure of the amount, provide your best guess or an average amount.)

- $ |
  1=Per hour
  2=Per month
  3=Per year

BB17DEMPSC01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, did {else} Did] your pay of $[BB17DEMPSA01] [{if BB17DEMST01 = 1} per hour {else if BB17DEMST = 2} per month {else if BB17DEMST = 3} per year {else}] change while you worked [{If job title missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]?

- 1=Yes
- 0=No

BB17DEMPSN01
Since you started working as a(n) [{if SELF-EMPLOYED = 1 and [JOB TITLE] missing} **self-employed individual** {else if SELF-EMPLOYED = 1} **self-employed [JOB TITLE]** {else} **[JOB TITLE]** with **[EMPLOYER NAME]**, how many times did your pay change prior to July 2017?

- | time(s)

BB17DEMPS101
In this job [{if SELF-EMPLOYED = 1 and [JOB TITLE] missing} as a self-employed individual {else SELF-EMPLOYED = 1} self-employed [JOB TITLE] {else if [JOB TITLE] missing} with [EMPLOYER NAME] {else} as a(n) [JOB TITLE] with [EMPLOYER NAME], what was your **first** pay change?

To:

- $ |
  1=Per hour
  2=Per month
  3=Per year

Date new pay began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DEMPS201
What was your second pay change?

[If BB17DEMST01 = 1] $[BB17DEMSA101] per hour to: $| per hour [else if BB17DEMST01 = 2] $[BB17DEMSA101] per month to: $| per month [else if BB17DEMST01 = 3] $[BB17DEMSA101] per year to: $| per year $[BB17DEMSA101] to: $|

- 1=Per hour
- 2=Per month
- 3=Per year

Date new pay began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DEMPS301
What was your third pay change?

[If BB17DEMST01 = 1] $[BB17DEMSA201] per hour to: $| per hour [else if BB17DEMST01 = 2] $[BB17DEMSA201] per month to: $| per month [else if BB17DEMST01 = 3] $[BB17DEMSA201] per year to: $| per year $[BB17DEMSA201] to: $|

- 1=Per hour
- 2=Per month
- 3=Per year

Date new pay began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DEMPS401
What was your fourth pay change?

[If BB17DEMST01 = 1] $[BB17DEMSA301] per hour to: $| per hour [else if BB17DEMST01 = 2] $[BB17DEMSA301] per month to: $| per month [else if BB17DEMST01 = 3] $[BB17DEMSA301] per year to: $| per year [else] $[BB17DEMSA301] to: $|

- 1=Per hour
- 2=Per month
- 3=Per year

Date new pay began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DOVTIM01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, did {else} Did] you earn any tips, commission, or bonuses [{If job title missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED = 1} {else} with [EMPLOYER NAME]?

- 1=Yes
- 0=No

BB17DOVAVG01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, how {else} How] much did you make, on average, in tips, commission, or bonuses [{If job title missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME]?

- $|
  1=Week
  2=Month
  3=Quarter
  4=Year

BB17DJBSAL01
Were you a salaried employee [{If [JOB TITLE] missing} at your job {else} as a(n) [JOB TITLE]] with [EMPLOYER NAME] [{If June 2017 selected on BB17DWKMON01 for respective employer} prior to July 2017 {else}]? (A salaried employee's pay does not vary with the number of hours worked.)

- 1=Yes
- 0=No

BB17DEMPHS01
On average, how many hours per week did you work when you first started [{If [JOB TITLE] missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME]? If the number of hours you work week to week varied when you first started, provide an average number of hours using your best guess.

- |hour(s) per week

BB17DEMPHC01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, did {else} Did] the average number of hours worked per week ([BB17DEMPHS01] hours) change while you worked [{If **[JOB TITLE]** missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME]?

- 1=Yes
- 0=No

BB17DEMPHN01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, how {else} How] many times did the average number of hours you [{if salaried]} were required to work {else} worked] per week change while you worked [{If job title missing]} at your job {else} as a(n) **[JOB TITLE]**] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME]?

- | time(s)

BB17DEMPH101
What was the first change to the average number of hours you [{if salaried]} **were required to work** {else} worked] **per week**?

From: [BB17DEMPHS01] hours per week

- [BB17DEMPHS01] hours per week **to**: | hours per week

Date new hours began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DEMPH201
What was the second change to the average number of hours you [{if salaried]} were required to work {else} worked] per week?

From: [BB17DEMHA101] hours per week

- [BB17DEMHA101] hours per week **to**: | hours per week

Date new hours began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DEMPH301
What was the third change to the average number of hours you [{if salaried]} **were required to work** {else} worked] **per week**?

From: [BB17DEMHA201] hours per week

- [BB17DEMHA201] hours per week **to**: | hours per week

Date new hours began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DEMPH401
What was the fourth change to the average number of hours you [{if salaried]} **were required to work** {else} worked] **per week**?

From: [BB17DEMHA301] hours per week

- [BB17DEMHA301] hours per week **to**: | hours per week

Date new hours began:

- Month:
  January - December
- Year:
  Before 2014 - 2017

BB17DWHY01
Why did you work fewer than 30 hours per week [{if [JOB TITLE] missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME]?

(Please choose all that apply)

- Working while attending school
- Family responsibilities
- Full-time job not available
- Held more than one job
- Did not need or want to work more hours
- Other
  1=Yes
  0=No

BB17DPREFT01
Would you have preferred to work more than [HOURS WORKED FOR EMPLOYER] hours per week [{If job title missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME]?

- 1=Yes
- 0=No

BB17DJBBA01
Was a bachelor's degree required by [EMPLOYER NAME] for you to be hired as a(n) [JOB TITLE]?

- 1=Yes
- 0=No

BB17DNSF19B01
Would you say the skills required [{if [JOB TITLE] missing} for your job {else} for your job as a(n) [JOB TITLE]] were closely related, somewhat related, or not related to the skills you obtained in your bachelor's degree program at [NPSAS INSTITUTION]?

- 1=Closely related
- 2=Somewhat related
- 0=Not related

BB17DJBREL01
[{If June 2017 selected on BB17DWKMON01 for respective employer} Prior to July 2017, was {else} Was] the work you did [{If [JOB TITLE] missing]} at your job {else} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME] related to your undergraduate [INTERNSHIP/CO-OPERATIVE EXPERIENCE/PRACTICUM]?

- 1=Yes
- 0=No

BB17DCURL01
Did you consider your job [{If [JOB TITLE] ne missing]} as a(n) [JOB TITLE]] [{if SELF-EMPLOYED ne 1} with [EMPLOYER NAME] to be part of a career you were pursuing?

- 1=Yes
- 0=No

BB17DCURJOB01
In which of the following ways would you describe your job [{If [JOB TITLE] ne missing} as a(n) [JOB TITLE]], since it was not part of your career?

(Please choose all that apply)

- Working to obtain job experience
- Working to receive benefits
- Working to pay loans or bills (for example: best job available)
- Working to earn money for future education
- [If USERMODE = WEB] Other description [else] Any other description
  1=Yes
  0=No

BB17DJSAT01
Indicate your level of satisfaction with each of the following areas of your job [{if SELF-EMPLOYED = 1 and [JOB TITLE] missing} as a self-employed individual {else if SELF-EMPLOYED = 1} as a self-employed [JOB TITLE] {else if [JOB TITLE] missing} in this job with [EMPLOYER NAME] {else} [as a(n) [JOB TITLE] with [EMPLOYER NAME].

- Compensation (wages, bonuses, and tips)
- Benefits
- Job security
- Ability to balance work and personal life
  1=Dissatisfied
  2=Neither dissatisfied nor satisfied
  3=Satisfied

BB17DSIDEJB
Between [BA COMPLETION DATE] and June 2017 did you do any informal work or side jobs for pay that did not have a formal contract? Examples could include babysitting, dog walking, yard care, tutoring, etc.

- 1=Yes
- 0=No

BB17DSIDEPAY
Between [BA COMPLETION DATE] and June 2017, about how much money, in total, did you make from your informal work or side jobs?

- $|.00

BB17DNWINTRO
Now we would like to ask you about what you did during periods between [BA COMPLETION DATE] and June 2017 where you were not working for pay and not enrolled in any school.

BB17DNW01
Between [Non-working date range from current iteration], when you were both not working and not enrolled in school, were you...

(Please choose all that apply)

- Working in an unpaid internship
- Looking for work
- Taking a break from work
- Not working due to personal health issues (for example: disabled)
- Caring for children
- Caring for other family members
- Something else
- Always either working and/or enrolled in school after completing bachelor's degree requirements in [BA COMPLETION DATE]
  1=Yes
  0=No

BB17DWRKS
When you were last enrolled as a student and also working, would you say you were primarily...

- 1=A student working to meet expenses, or
- 2=An employee who decided to enroll in school

BB17DOTHOUT
The next section will focus on any job search experiences you may have had at any point between completing your bachelor's degree requirements in [BA COMPLETION DATE] and June 2017.

BB17DEVERLK
Between [BA COMPLETION DATE] and June 2017, did you ever actively look for employment, including looking for a different or additional job?

(Actively looking for work means you were engaged in activities such as submitting resumes and cover letters, scheduling phone and in-person interviews, etc.)

- 1=Yes
- 0=No

BB17DLKWRK
Between [BA COMPLETION DATE] and June 2017, which months did you actively look for employment, including looking for a different or additional job?

- [Calendar displaying months [BA COMPLETION DATE] – June 2017]
- □ Never looked for a job

BB17DACTLKWK
What did you do to look for a job?

(Please choose all that apply)

- Talked to friends or family members
- Completed an internship
- Used an employment agency
- Searched online job postings
- Talked with coworkers or mentors
- Talked with faculty members or alumni
- Other
  1=Yes
  0=No

BB17DEMPOTH
According to the information that you provided, you were not working for pay at any point between [BA COMPLETION DATE] and June 2017.

During this time, were you...

- Traveling (trip longer than two weeks)?
- Volunteering or participating in an unpaid internship?
- A full-time homemaker?
- Unable to work because of a disability?

- Temporarily laid off, on leave, or waiting to report to work for other reasons?
- Enrolled in school?
  1=Yes
  0=No

BB17DIMPBEN
Think about the factors that are important to you when choosing a job. Using a scale from 1 to 4 where 1 is "not at all important" and 4 is "very important," please indicate the importance of each of the following factors.

- Wages and bonuses
- Promotion opportunities
- Work that is directly related to your field of study
- Making your own decisions about how to get your work done
- Employer-provided benefits (for example: retirement, health insurance)
- Commute (for example: time, hassle)
  1=1 (Not at all important)
  2=2 (Somewhat important)
  3=3 (Important)
  4=4 (Very important)

BB17EINTRO
One of the goals of this study is to learn about recent college graduates' interest in the teaching profession even among graduates who did not major in an education field. The next set of questions asks about your level of interest in becoming a pre-kindergarten (pre-K) through 12th grade teacher.

BB17EEVRTCH
Have you ever worked as a regular classroom teacher, itinerant teacher, support teacher, teacher's aide, substitute teacher, or student teacher at the pre-K through 12th grade level?

- 0=No
- 1=Yes, currently work as a pre-K through 12th grade teacher, substitute, or aide
- 2=Yes, formerly worked as a pre-K through 12th grade teacher, substitute, or aide

BB17EPREPAR
Have you done anything to prepare for a teaching career at the pre-K through 12th grade level? (Please only include formal preparations, such as taking courses to complete an education degree, taking a certification exam, or completing a student teaching assignment.)

- 1=Yes
- 0=No
- -1=Don't know

BB17ECONSID
Have you ever considered a career in teaching at the pre-K through 12th grade level?

- 1=Yes
- 0=No
- -1=Don't know

BB17ETCHAPP
Between [BA COMPLETION DATE] and June 2017, did you apply for a pre-K through 12th grade teaching position?

- 1=Yes
- 0=No

BB17EOFFER
Did you receive any offers for teaching positions at the pre-K through 12th grade level?

- 1=Yes
- 0=No

BB17EHOWPREP
Which of the following steps have you taken to prepare to teach at the pre-K through 12th grade level?

- Prepared at a college or university that provides certification
- Online-only certification program
- Alternative entry program such as Teach for America or Troops to Teachers
- Completed a student teaching assignment
- None of these

BB17ESTTCLG
How long did your student teaching last?

- 1=4 weeks or less
- 2=5-7 weeks
- 3=8-11 weeks
- 4=12 weeks or more

BB17ECURCRT
Are you currently certified, in any state, to teach at the pre-K through 12th grade level?

- 1=Yes
- 0=No

BB17ECRTFLD
In what subject area(s) are you currently certified to teach?

(Please choose all that apply)

- Early childhood education (pre-K)
- Elementary education (general curriculum in elementary or middle grades)
- General education in middle or secondary grades
- Mathematics or computer science
- Natural sciences (for example: biology, chemistry)
- Social sciences (for example: social studies, psychology)
- Special education
- Other subject areas not listed
  1=Yes
  0=No

BB17ECRTOTH
In what other subject area(s) are you currently certified to teach?

- Arts or music
- English as a second language (ESL)
- English or language arts
- Foreign languages
- Health, physical education
- Vocational, career, or technical education
- Miscellaneous (for example: driver education, humanities or liberal studies, library or information science, military science or ROTC, philosophy, religious studies, theology, or divinity)
- [If USERMODE = WEB] Other subject area not reported {else} Any other subject area not reported

BB17ETCHGRT
Have you heard of the TEACH Grant Program?

- 1=Yes
- 0=No

BB17ELNFRGV
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

BB17ELNINCT
Did knowing about a teacher loan forgiveness program influence you to become a teacher?

- 1=Yes
- 0=No

BB17ELNPRT
Have you participated, or are you applying to participate, in a loan forgiveness program for teachers?

- 1=Yes
- 0=No

BB17ETHNKINFL
Before you began teaching, how did each of the following influence your decision to pursue a teaching career?

- Financial compensation of teachers
- Prestige of teaching occupation
- Working with kids
- Opportunity to contribute to society as a teacher
- Teacher accountability for student achievement
- Possibilities for career advancement in teaching
  1=Negative influence
  2=No influence
  3=Positive influence

BB17EFTCHIND
In your first teaching job after completing your bachelor's degree, 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

BB17EFTCHPRE
In your first teaching job after completing your bachelor's degree, did you feel adequately prepared to...

- Handle a range of classroom management or discipline situations?
- Use a variety of instructional methods?
- Teach your subject matter?
  1=Yes
  0=No

BB17EFTCHHLP
In your first teaching job after completing your bachelor's degree, did you receive help from your school or school district to...

- Discipline students?
- Select and implement appropriate instructional methods and curriculum?
- Work with parents and the community?
  1=Yes
  0=No

BB17ECURTCH
Are you still employed as a pre-K through 12th grade teacher?

(If you are on a break but plan to return to teaching when school is back in session, please answer "Yes.")

- 1=Yes
- 0=No

BB17ELEFT
When were you last employed as a pre-K through 12th grade teacher?

- Month:
  January - December
- Year:
  Before 1980 - 2018

BB17ETCHLEV
Did you leave teaching for any of the following reasons?

(Please choose all that apply)

- Involuntarily transferred
- Salary and/or benefits were inadequate
- Personal life reasons (for example: health reasons, to care for child(ren), change in residence)
- Dissatisfied with workplace conditions (for example: grade level or subject area, facilities)
- Dissatisfied with teaching as a career or wanted to pursue another career

- Returned to school
- Laid off
- {If USERMODE = WEB} Other reason(s) {else} Any other reason(s)
  1=Yes
  0=No

BB17FINTRO
In this last section, [{if USERMODE = TIO} I {else} we] have several questions that will help us understand the experiences of individuals from different backgrounds.

BB17FDOB
In what month and year were you born?

- Month:
  January - December
- Year:
  1920 - 2000

BB17FUSBORN
Were you born in the United States (including Puerto Rico or another U.S. territory)?

- 1=Yes
- 0=No

BB17FORIGIN
In what country were you born?

(Enter your country and select from the resulting options. If you can't find your country, click "Country Not Listed" and hit "Next.")

- Country Name
- Country Code

BB17FCITZN
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

BB17FENGL
Is English your native language?

- 1=Yes
- 0=No

BB17FNATIVE
What language do you consider to be your native language?

(Please choose your native language from the dropdown list below.)

- 1=American Sign Language or other sign language
- 2=Arabic
- 3=Bengali
- 4=Chinese
- 5=French or Canadian French
- 6=German
- 8=Greek (modern)
- 10=Hebrew (modern)
- 11=Hindi
- 12=Italian
- 13=Japanese
- 14=Javanese
- 15=Korean
- 16=Latin
- 17=Malay
- 18=Marathi
- 19=Portuguese
- 20=Punjabi
- 21=Russian
- 22=Spanish
- 23=Swahili
- 24=Tamil
- 25=Telugu
- 26=Turkish
- 27=Urdu
- 28=Vietnamese
- 99=Other

BB17FOTLANG
Do you know any other language(s)?

- 1=Yes
- 0=No

BB17FLANGS
Which second language do you know best?

(Choose the second language you know best from the dropdown list below. If you consider yourself to have more than one second language, choose one of these languages.)

- [Language list from BB17FNATIVE]
- □ Do not have a second best language

BB17FLNGCAR
Have you used your other (non-English) language in any jobs you've held since completing your bachelor's degree?

- 1=Yes
- 0=No

BB17FSEX
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

BB17FGENDER
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
- A different gender identity
  Please describe:
- Questioning or unsure
  Please describe:

BB17FLGBTQ
Do you think of yourself as...

- 1=Lesbian or gay, that is, homosexual
- 2=Straight, that is, heterosexual
- 3=Bisexual
- 4=Another sexual orientation
- 5=Questioning or unsure

BB17FAWARE
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.)?

- Members of your immediate family (e.g., parents and siblings)
- People you socialize with (e.g., friends and acquaintances)
- People you work with (e.g., supervisors and coworkers)
  1=Most
  2=Some
  0=None

BB17FMILIT
Are you a veteran of the U.S. Armed Forces, or are you currently serving in the Armed Forces either on active duty, in the reserves, or in the National Guard?

(Please choose all that apply)

- Veteran
- Active duty
- Reserves
- National Guard
  1=Yes
  0=No
- □ None of the above

BB17FVTNEL
Did you vote in the November 2016 presidential election?

- 1=Yes
- 0=No

BB17FEVRVT
Have you ever voted in a national, state, or local election?

- 1=Yes
- 0=No

BB17FCOMSRV
Not including paid community service, court-ordered service, or charitable donations, have you performed any community service or volunteer work in the last 12 months?

- 1=Yes
- 0=No

BB17FVLHRS
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

BB17FDEPS
Do you [{If married} or your spouse {If living with partner or BB17AFINSP = 1} or your partner] have any dependent children? (Dependent children need not live with you. Include any children for whom you [{If married} or your spouse {If living with partner or BB17AFINSP = 1} or your partner] provide 50% or more of their financial support.)

- 1=Yes
- 0=No

BB17FDEP2
How many dependent children do you support financially?

- | dependent(s)

BB17FDEPDOB
In what month and year were your dependent children born?

[Display for each BB17FDEP2]

- Month:
  January - December
- Year:
  Before 1985 – 2018

BB17FDEPDAT
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.

[Display for each BB17FDEP2]

- □ Same as date of birth
- Month:
  January - December
- Year:
  Before 1985 – 2018

BB17FDAYCAR
Are any of your dependent children in childcare that you [{if married} or your spouse {else if living with partner or BB17AFINSP = 1} or your partner] pay for?

- 1=Yes
- 0=No

BB17FDAYAMT
How much (on average) do you [{if married} or your spouse {else if living with partner or BB17AFINSP = 1} or your partner] pay each month for childcare?

- $|.00 per month

BB17FDAYDAT
In what month and year did you begin paying the childcare amount [{If childcare payment > 0} of $[BB17FDAYAMT] per month]?

- Month:
  January - December
- Year:
  Before 1980 - 2018

BB17FDAYPRV
Were you paying for childcare between [BA COMPLETION DATE] and [BB17FDAYDAT]? ({If married or in domestic partnership} If someone other than your [{If married} spouse {If living with partner or BB17AFINSP = 1} partner] paid for childcare on your behalf, please answer, "No.")

- 1=Yes
- 0=No

BB17FDAYMOS
What months between [BA COMPLETION DATE] and [BB17FDAYDAT] were you paying for childcare?

- [Calendar displaying months [BA COMPLETION DATE] – [BB17FDAYDAT]]

BB17FDAYAMT2
For the months that you paid for childcare between [BA COMPLETION DATE] and [BB17FDAYDAT], what was your average monthly cost? (If you do not know the exact amount, please provide your best guess.)

- $|.00 per month
- □ Don't know

BB17FOTHER
Do you [{If married} or your spouse {If living with partner or BB17AFINSP = 1} or your partner] have any other dependents that you support financially? (Dependents need not live with you [{If married} or your spouse {If living with partner or BB17AFINSP = 1} or your partner]. They may include siblings, parents, other relatives, or other individuals for whom you [{If married} or your spouse {If living with partner or BB17AFINSP = 1} or your partner] provide 50% or more of their financial support or are considered to be the primary caregiver.)

- 1=Yes
- 0=No

BB17FOTDEP
In what month and year did you begin providing financial support or become the primary caregiver to your other dependent(s)?

[For each other dependent]

- Month:
  January - December
- Year:
  Before 1985 – 2018

BB17FHOUSE
Do you own a home or pay rent? (If someone makes housing payments on your behalf, please answer, "None of the above.")

(Please choose all that apply)

- Pay mortgage
- Pay rent
- Own home(s) outright
  1=Yes
  0=No

- □ None of the above

BB17FMTGAMT
How much (on average) is your total monthly rent or mortgage payment? (Please indicate only the amount that you ([if married] or your spouse [else if living with partner or BB17AFINSP = 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

BB17FHOMDAT
In what month and year did you begin paying [{if BB17FMTGAMT > 0} $BB17FMTGAMT per month {else} the rent] for your current residence?

- Month:
  January - December
- Year:
  Before 1980 - 2018

BB17FHOMPRV
Were you paying a rent or mortgage between [BA COMPLETION DATE] and [BB17FHOMDAT]? ({If married or in domestic partnership} If someone other than your [{If married} spouse {If living with partner or BB17AFINSP = 1} partner] made housing payments on your behalf, please answer, "No.")

- 1=Yes
- 0=No

BB17FHOMEMOS
What months between [BA COMPLETION DATE] and [BB17FHOMDAT] were you paying a rent or mortgage?

- [Calendar displaying months [BA COMPLETION DATE] – [BB17FHOMDAT]]

BB17FHOMAMT
For the months that you had a rent or mortgage payment between [BA COMPLETION DATE] and [BB17FHOMDAT], what was your average monthly payment? (If you do not know the exact amount, please provide your best guess.)

- $|.00 per month
- □ Don't know

BB17FHOMVAL
What is the approximate current value of your home(s)? (If you do not know the exact amount, please provide your best guess.)

- $|.00

BB17FHOMOWE
About how much do you [{if married} or your spouse {else if living with partner or BB17AFINSP = 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

BB17FCARLOAN
Do you [{if married} or your spouse {if living with partner or BB17AFINSP = 1} or your partner] make loan or lease payments for a vehicle (car, truck, motorcycle, or other vehicle)? (If someone makes vehicle loan or lease payments on [{if married} behalf of you or your spouse {if living with partner or BB17AFINSP = 1} behalf of you or your partner {else} your behalf], please answer, "No.")

– 1=Yes
– 0=No

BB17FCARAMT
What is the total amount you [{If married} or your spouse {If living with partner or BB17AFINSP = 1} or your partner] pay each month for your vehicle loan(s) or lease(s)?

– $|.00 per month

BB17FCARDAT
In what month and year did you begin paying your vehicle payment [{If car payment > 0} of $[CAR PAYMENT AMOUNT] per month]?

– Month:
  January - December
– Year:
  Before 1980 - 2018

BB17FCARPRV
Were you paying a vehicle payment between [BA COMPLETION DATE] and [BB17FCARDAT]? ({If married or in domestic partnership} If someone other than your [{If married} spouse {If living with partner or BB17AFINSP = 1} partner] made vehicle payments on your behalf, please answer, "No.")

– 1=Yes
– 0=No

BB17FCARMOS
What months between [BA COMPLETION DATE] and [BB17FCARDAT] were you making a vehicle payment?

– [Calendar displaying months [BA COMPLETION DATE] – [BB17FCARDAT]]

BB17FCARAMT2
For the months that you had a vehicle payment between [BA COMPLETION DATE] and [BB17FCARDAT], what was your average monthly payment? (If you do not know the exact amount, please provide your best guess.)

– $|.00 per month
– □ Don't know

BB17FNUMCRD
Excluding debit or ATM cards, how many credit cards do you have in your own name that are billed to you?

– | card(s)

BB17FCARYBAL
Do you usually pay off your credit card balance each month, or carry the balance over from month to month?

- 1=Pay off balance
- 2=Carry balance

BB17FCRDBAL
What was the total balance on all your credit cards according to your last statements?

- $|.00

BB17FRETIR
Do you have a(n)...

- Employer-based retirement savings account (for example, 401k, 403b, pension)
- Non-employer based retirement savings account (for example, IRA)
  1=Yes
  0=No
  -1=Don't know

BB17FAMTRET
Not counting any contributions made on your behalf, in the past 12 months did you contribute to your...

- Employer-based retirement savings account (for example, 401k, 403b, Pension)
- Non-employer based retirement savings account (for example, IRA)
  1=Yes
  0=No
  -1=Don't know

BB17FFIN2000
How confident are you that you could come up with $2,000, from any available source, if an unexpected need arose within the next month? Could you...

- 1=Certainly could come up with the $2,000
- 2=Probably could come up with the $2,000
- 3=Probably could not come up with the $2,000
- 4=Certainly could not come up with the $2,000

BB17FDONATE
Since [BA COMPLETION DATE], have you made any monetary donations to [NPSAS INSTITUTION]?

(Please do not include any tuition, payments, or fees paid to [NPSAS INSTITUTION].)

- 1=Yes
- 0=No

BB17FINCOM
What was your income for calendar year 2016, prior to taxes and deductions? (Calendar year 2016 includes January 1, 2016 through December 31, 2016. Include all income you paid taxes on, including work, investment income, or alimony. Do not include any grants or loans you may have used to pay for school, or any money given to you by your family.)

- $ |

BB17FINEST
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 2016** (January 1, 2016 through December 31, 2016).

- 12=No income
- 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

BB17FSPEMP
Did your [{if married} spouse {else if living with partner or BB17AFINSP = 1} partner] work for pay in calendar year 2016 (January 1, 2016 through December 31, 2016)?

- 1=Yes
- 0=No

BB17FINCSP
What was your [{if married} spouse's {else if living with partner or BB17AFINSP = 1} partner's] income for calendar year 2016, prior to taxes and deductions? (Calendar year 2016 includes January 1, 2016 through December 31, 2016. Include all income your [{if married} spouse {else if living with partner or BB17AFINSP = 1} partner] paid taxes on, including work, investment income, or alimony. Do not include any grants or loans your [{if married} spouse {else if living with partner or BB17AFINSP = 1} partner] may have used to pay for school, or any money given to your [{if married} spouse {else if living with partner or BB17AFINSP = 1} partner] by family.)

- $ |
- □ Check here if you were not living with your [{if living with partner or BB17AFINSP = 1} partner {else} spouse] in 2016.

BB17FINSRA
Please indicate the range that best estimates your [{if married} spouse's {else if living with partner or BB17AFINSP = 1} partner's] income from all sources (including income from work, investments, alimony, etc.), prior to taxes and deductions, in calendar year 2016 (January 1, 2016 through December 31, 2016).

- 12=No income
- 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

BB17FSPLV
What is the highest level of education that your [{if married} spouse {else if living with partner or BB17AFINSP = 1} partner] 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)

BB17FSPCOL
Did your [{if married} spouse {else if living with partner or BB17AFINSP = 1} partner] attend college or graduate school during the 2016-17 school year? (Answer yes if she or he attended at any time between July 1, 2016 and June 30, 2017.)

- 0=No
- 1=Yes, full-time
- 2=Yes, part-time

BB17FSPLN
Did your spouse ever take out any student loans for his or her undergraduate and/or graduate education?

- 1=Yes
- 0=No

BB17FSPAMT
Please indicate the range for how much your spouse borrowed in student 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

BB17FSPOWE
How much of your spouse's student loans are still owed? Would you say all, some, or none?

- 1=All
- 2=Some
- 3=None

BB17FSPREPMT
Are your [{if living with partner or BB17AFINSP = 1} partner's {else} spouse's] student loans currently in repayment?

- 1=Yes
- 0=No

BB17FSPLNPY
Please indicate the range for how much your spouse pays each month for his or her student loans? Would you say it is...

- 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 or more
- -1=Don't know
- □ Not in repayment

BB17FACS16A
These next few questions will help us better understand the educational services available for people with disabilities.

Are you deaf or do you have serious difficulty hearing?

- 1=Yes
- 0=No

BB17FACS16B
Are you blind or do you have serious difficulty seeing even when wearing glasses?

- 1=Yes
- 0=No

BB17FACS17A
Because of a physical, mental, or emotional condition, do you have serious difficulty concentrating, remembering, or making decisions?

(When answering, consider conditions including, but not limited to, a serious learning disability, depression, ADD, or ADHD.)

- 1=Yes
- 0=No

BB17FACS17B
Do you have serious difficulty walking or climbing stairs?

- 1=Yes
- 0=No

BB17FMAIN1
What is the main type of condition or impairment you have?

- 1=Blindness or visual impairment (that cannot be corrected by wearing glasses)
- 2=Hearing impairment (for example, deaf or hard of hearing)
- 3=Orthopedic or mobility impairment
- 4=Speech or language impairment
- 5=Learning, mental, emotional, or psychiatric condition
- 6=Other health impairment or problem

BB17FMAIN2
Thanks. What specifically is this main type of condition or impairment?

- 1=Anxiety
- 2=Attention deficit disorder (ADD or ADHD)
- 3=Autism or Asperger's syndrome or other developmental disability
- 4=Depression
- 5=Specific learning disability or dyslexia
- 6=Traumatic brain injury (TBI)
- 7=Other

BB17FAFFCOST
Please indicate whether or not you had to do any of the following as a result of your financial cost for your undergraduate [{If indicated a graduate degree} and graduate] education.

- Worked more than desired
- Took a job outside your field of study or a less desirable job
- Took a job instead of enrolling for additional education
- Delayed buying a home
- Delayed getting married
- Delayed having children

  1=Yes
  0=No

BB17FSELLPO
Suppose you {(if married) and your spouse (if living with partner or BB17AFINSP = 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

BB17FSTRESS
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

BB17FFEDACT
If a borrower is unable to repay his or her federal student loan, what steps can the government take to collect the debt?

- Report that the student debt is past due to the credit bureaus
- Have the student's employer withhold money from his or her pay (garnish wages) until the debt, plus any interest and fees is repaid
- Retain tax refunds and Social Security payments until the debt, plus any interest and fees, is repaid
- □ None of the above

RESUME1
In addition to your survey responses, we would like to learn more about your employment experiences by offering you the option to upload your résumé. Your resume will not be disclosed, or used, in any personally identifiable form outside of this survey. Would you like to upload your résumé?

- 1=Yes, upload my résumé now
- 2=No, I do not want to upload my résumé
- 3=I do not have a résumé

RESUPLOAD
Please click the "Upload Résumé " button to locate your résumé and start the upload process. Once your résumé has been uploaded, click "Next."

RESUMEDESC
Thank you for uploading your résumé. Thinking about your employment since completing your bachelor's degree, which of the following best describes your résumé?

- 1=Up to date and accurately reflects employment history
- 2=Mostly up to date and reflects a general employment history
- 3=Not up to date or excludes several employers

INCTYP

To show our appreciation for completing the survey today, we would like to send you $[INCENTIVE AMOUNT], payable by PayPal or check. Please indicate your preferred payment type.

- 1=PayPal. The $[INCENTIVE AMOUNT] PayPal payment will be sent via e-mail within the next few hours.
- 2=Check. Please allow up to 4 weeks for processing and delivery of the $[INCENTIVE AMOUNT] check payment.
- 3=No, thanks. Decline the incentive.

Appendix F. Training Topics and Agenda for Interviewers

Data Collection Interviewer Training Manual Contents

1.0 2008/18 BACCALAUREATE AND BEYOND LONGITUDINAL STUDY 1-1
1.1. Data Collection Interviewer Training Manual 1-1
1.2. What Is the 2008/18 Baccalaureate and Beyond Longitudinal Study Field Test? 1-1
1.2.1. What Is the Purpose of the 2008/18 Baccalaureate and Beyond Longitudinal Study? 1-2
1.2.2. How Will the 2008/18 Baccalaureate and Beyond Field Test Survey Be Conducted? 1-3
1.2.3. The Use of Incentives 1-5
1.3. Baccalaureate and Beyond Security Procedures 1-5
1.4. Project Staff 1-6
1.5. Common Acronyms 1-6

2.0 2016/17 BACCALAUREATE AND BEYOND LONGITUDINAL STUDY 2-1
2.1. Data Collection Interviewer Training Manual 2-1
2.2. What Is the 2016/17 Baccalaureate and Beyond Longitudinal Study? 2-1
2.2.1. What Is the Purpose of the 2016/17 Baccalaureate and Beyond Longitudinal Study? 2-1
2.2.2. How Will the 2016/17 Baccalaureate and Beyond Longitudinal Study Be Conducted? 2-2
2.2.3. The Use of Incentives 2-3
2.3. Project Staff 2-3

3.0 GENERAL SURVEYING TECHNIQUES 3-1
3.1. Overview 3-1
3.2. Inbound Calls to the Help Desk 3-3
3.3. Types of Questions You Will Encounter 3-4
3.4. Responding to a Call 3-4
3.5. Identity Verification and Password Requests 3-6
3.6. Obtaining Cooperation—Outbound Calls 3-8
3.7. Initial Contact 3-10
3.7.1. Speaking to a Contact 3-11
3.7.2. Speaking to a Sample Member 3-11
3.7.3. Encountering Refusals 3-11
3.8. Best Practices in Conducting the Baccalaureate and Beyond Longitudinal Study Survey 3-12
3.8.1. Asking the Questions 3-12
3.8.2. Using Feedback 3-15
3.8.3. Recording Responses Accurately 3-17
3.8.4. Using Judgment in General Coding 3-17

4.0 CASE MANAGEMENT 4-1
4.1. Pre-CATI Tracing Activities 4-1
4.2. CATI Locating Procedures 4-1
4.3. Tracing Procedures 4-2

4.4. Scheduling a Callback 4-3
4.5. Telephone Answering Machine Message Protocol 4-4
4.6. Status Codes 4-4

5.0 QUALITY CONTROL 5-1
5.1. Ensuring Quality in the Survey 5-1
5.2. Training Components 5-1
5.2.1. Data Collection Interviewer Training Materials 5-1
5.2.2. Quality Circle Meetings 5-1
5.2.3. Continual Training 5-2
5.2.4. Performance Monitoring: QUEST 5-3
5.3. Electronic Incident Reports 5-3
5.3.1. Types of Problems You May Encounter 5-4
5.3.2. Submitting Electronic Incident Reports From the CATI-CMS 5-5
5.4. Conclusion 5-5

APPENDIXES
Appendix A Frequently Asked Questions – 2008/18 Baccalaureate and Beyond Longitudinal Study
Appendix B Frequently Asked Questions – 2016/17 Baccalaureate and Beyond Longitudinal Study
Appendix C Sample Members' Rights and Confidentiality
Appendix D Refusal Conversion Procedures
Appendix E 2008/18 Baccalaureate and Beyond Longitudinal Study Data Collection Materials
Appendix F 2016/17 Baccalaureate and Beyond Longitudinal Study Data Collection Materials
Appendix G Event, Line-Level, and Summary Status Codes
Appendix H Survey Reference Materials

Data Collection Interviewer Agenda

Baccalaureate and Beyond Longitudinal Study

Tuesday: 6:00-10:00 PM

Welcome
Overview of Training Objectives
Review of iLearning Modules
B&B Study Basics
Introduction to CATI-CMS
Break
B&B Security Procedures
CATI Front End Practice
Review of Professional Interviewing
Review of Training Objectives
Demonstration Survey
Wrap-Up/Questions

Wednesday: 6:00-10:00 PM

Welcome/Review of Objectives
The B&B Surveys
Break
FAQs
B&B Studies Comparison
Break
Coder Training/Practice
Review of Training Objectives
Wrap-Up/Questions

Thursday: 6:00-10:00 PM

Welcome/Review of Objectives
Round Robin Mock Survey 1
Break
Round Robin Mock Survey 2
Break
Paired Mock Surveys
Review of Training Objectives
Wrap-Up/Questions

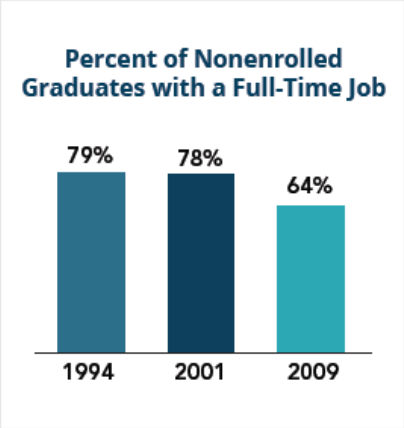
Appendix G. Notification Materials for Survey Data Collection

Study Brochure G-2
Data Collection Announcement Letter G-4
Data Collection Announcement E-mail G-6
Postcard 1 ..... G-7
Final Postcard G-9
Text Messages G-11
Flyer G-12
Incentive Letter G-13

Study Brochure

What have we learned from previous rounds of B&B?

In 1994, seventy-nine percent of bachelor's degree recipients had a full-time job in the year following their graduation, compared to 78 percent in 2001, and 64 percent in 2009.



SOURCE: U.S. Department of Education, National Center for Education Statistics (NCES), 1993/94, 2000/01, and 2008/09 Baccalaureate and Beyond Longitudinal Studies (B&B:93/94, B&B:2000/01, and B&B:08/09).

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/bandb1617 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 877-287-3782 to speak to one of our professional interviewers.

B&B HELP DESK

877-287-3782

bandb@rti.org

https://surveys.nces.ed.gov/bandb1617

Jennifer Wine, Ph.D.
B&B Project Director (RTI)
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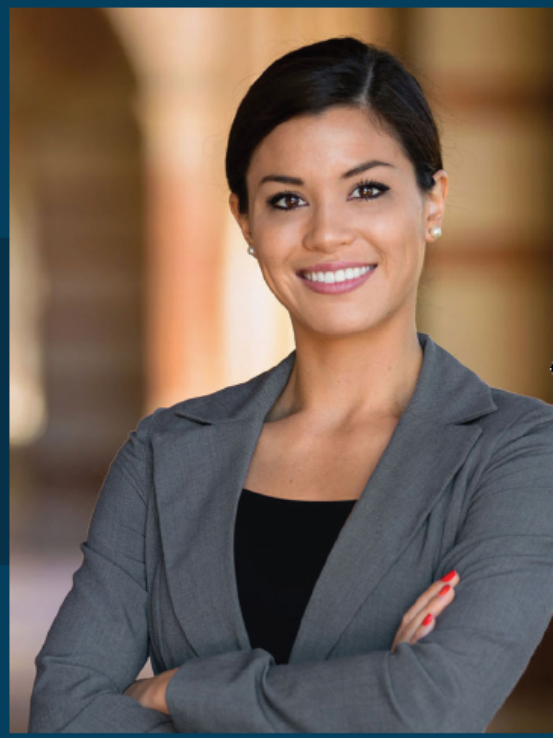
877-225-8470

Ted Socha
B&B Project Officer (NCES)
ted.socha@ed.gov
202-245-7071

nces.ed.gov

2016/17
BACCALAUREATE AND BEYOND
LONGITUDINAL STUDY



ies NATIONAL CENTER FOR EDUCATION STATISTICS
Institute of Education Sciences

NCES 2017-148

HS2

WHAT IS B&B?

The 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) is a national study of approximately 29,000 graduates from U.S. colleges and universities who will be asked about their experiences since completing a bachelor's degree.

The study will collect information on graduate and other education, experiences on the job market and in the labor force, earnings and expenses, family status, and personal and professional goals. In addition to survey responses, we collect related information from sources such as student loan and enrollment databases. There is a particular focus on careers in teaching and other employment outcomes.

WHO IS CONDUCTING B&B?

B&B:16/17 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.

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).

WHY AM I BEING ASKED TO PARTICIPATE?

You have been asked to participate in B&B:16/17 because you completed the requirements for your bachelor's degree during the 2015-16 academic year.

WHAT HAPPENS TO THE RESULTS?

Results from the current study are scheduled to be released in 2019 and will be posted on the NCES website (https://nces.ed.gov/) along with results from previous B&B studies. Your responses will be combined with those of other students and will be presented in summary form only. No individually-identifying information will be published.

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). By law, any NCES employee or NCES contractor who willfully discloses any identifiable information about you or your school is subject to a jail term of up to 5 years, a fine of up to $250,000, or both. Electronic transmission of your information will be monitored for viruses, malware, and other threats by Homeland Security in accordance with the Cybersecurity Enhancement Act of 2015.

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.

WHY IS MY PARTICIPATION IMPORTANT?

Your survey responses 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:16/17, no one else can be substituted for you.

Data Collection Announcement Letter

<<date>>

<<name>>
<<addr>>
<<city>>, <<st>> <<zip>>

Dear «fname» «lname»:

Recently, we contacted you about the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), an important study that will collect education, employment, and other information from you and others like you who received their bachelor's degree during the 2015-16 school year. Data collected from B&B will help researchers and policymakers better understand how earning a bachelor's degree impacts choices for additional education and employment paths.

Approximately 29,000 recent bachelor's degree recipients from schools across the nation have been randomly selected to participate in B&B. Sample members like you are being asked to complete a <<time>> survey. Having your resume handy will help you complete the survey more easily. <<IF GROUP 2-3 and incentive-eligible: **If you complete the survey by <<early_comp_date>> we will send you $<<incamt+early_bird>> payable by <<PayPal or>> check. After <<early_comp_date>>, we will send you $<<IncAmt>> once you complete the survey.**>> <<GROUPS 1 & 4 and incentive-eligible: **Once you complete the survey, we will send you $«IncAmt», payable by <<PayPal or>> check. .**>>

Log on to our secure website at <<Website URL>> to complete your survey on your computer, smartphone, or tablet:

Study ID = «caseid»
Password = «password»m *(password is case sensitive).*

Your participation is critical to the study's success. You represent other recent college graduates like you who were not selected for this study. Your participation in B&B is voluntary and will not affect any aid or other benefits you may receive.

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. If you have questions about the study send an email to bandb@rti.org, or, if you prefer to complete the survey over the phone, call the B&B help desk at 877-287-3782. You can also learn more by visiting the study website at <<Website URL>>.

Sincerely,

Jennifer Wine, Ph.D.
B&B Project Director
RTI International
jennifer@rti.org
877-225-8470

Ted Socha
B&B Project Officer
National Center for Education Statistics (NCES)
Ted.Socha@ed.gov
202-245-7071

Enclosure

«panelinfo»/«ctrl»

NCES is authorized to conduct B&B:16/17 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)(iii) and 99.35). The data are being collected for NCES by RTI International, a U.S.-based nonprofit research organization. [PLEDGE FILL]
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 1850-0926. 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 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), National Center for Education Statistics, Potomac Center Plaza, 550 12th St, SW, Room 4004, Washington, DC 20202.

Data Collection Announcement E-mail

SUBJECT: It's time to complete your B&B survey!

Dear <<fname>>,

Recently, we contacted you about the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), an important study that will collect education, employment, and other information from you and others like you who completed their bachelor's degree during the 2015-16 school year. Data collected from B&B will help researchers and policymakers better understand how earning a bachelor's degree impacts choices for additional education and employment paths.

Approximately 29,000 recent bachelor's degree recipients from schools across the nation have been randomly selected to participate in B&B. Sample members like you are being asked to complete a <<time>> survey. Having your resume handy will help you complete the survey more easily. <<IF GROUP 2-3 & INCENTIVE-ELIGIBLE: **If you complete the survey by <<early_comp_date>> we will send you $<<incamt+early_bird>> payable by <<PayPal or>> check. After <<early_comp_date>>, we will send you $<<IncAmt>> once you complete the survey.**>> <<GROUPS 1, 4 & INCENTIVE ELIGIBLE: **Once you complete the survey, we will send you $«IncAmt», payable by <<PayPal or>> check.** >>

Click here to complete your survey on your computer, smartphone or tablet.

<<Website URL>>
Study ID = <<caseid>>
Password = <<pswd>> *(password is case sensitive).*

If you have questions about the study send an email to bandb@rti.org, or, if you prefer to complete the survey over the phone, call the B&B help desk at 877-287-3782. You can also learn more by visiting the study website at <<Website URL>>.

Thank you in advance for making B&B a success.

Jennifer Wine, Ph.D.
B&B Project Director
RTI International
jennifer@rti.org
877-225-8470

Ted Socha
B&B Project Officer
National Center for Education Statistics (NCES)
Ted.Socha@ed.gov
202-245-7071

OMB Control Number: 1850-0926
Learn more about our confidentiality procedures at <<Website URL>>.

Postcard 1

Why are the college graduates sampled for the Baccalaureate & Beyond (B&B:16/17) study so important?

Because YOU represent thousands of other young adults from

across the country

who were not selected.

«FNAME», your participation matters.

It only takes <<time>> minutes to complete the B&B:16/17 survey!

IF INCENTIVE ELIGIBLE: [When you complete the survey, you'll receive $<<incamt>> payable by <<PayPal or>> check!]

<<Website URL>>

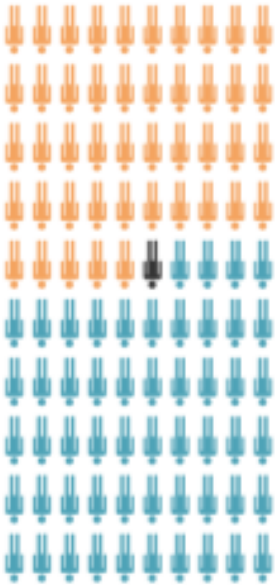
Study ID: «caseID»

PW: «password»

877-287-3782

Data collected from B&B will help researchers and policymakers better understand how earning a bachelor's degree impacts choices for additional education and employment paths. Having your resume or curriculum vitae handy will help you complete the survey more easily.

The 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) is a survey of individuals who earned their bachelor's degree during the 2015-16 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: 1850-0926
Learn more about our confidentiality procedures at
<<Website Confidentiality URL>>



WE NEED YOUR PARTICIPATION TO
REACH OUR GOAL.

You can help contribute to
important research.

Open
Here!

National Center for Education Statistics
U.S. Department of Education (ATTN: Data Capture)
5265 Capital Boulevard
Raleigh, NC 27616-2925
RTI Project # [INSERT PROJECT ID]

ADDRESS SERVICE REQUESTED

«casenamenosuffixALLCAPS»
«addr1»
«addr2»
«city», «state» «zip»

Final Postcard

You can influence educators and policymakers.

«fname»,

It is extremely important that you complete the interview so that educators and policymakers better understand the experiences of students as they transition into employment. Because the results from this study will help develop policy regarding participation in higher education, your experiences and opinions will help determine how future tax dollars are spent.

IF INCENTIVE ELIGIBLE: <<You'll receive **$ <inc_amt>** as a thank you, payable by <<PayPal or>> check.>>

The survey takes just **<<time>> minutes** of your time [IF INCENTIVE ELIGIBLE: and you'll receive **$<<inc_amt>>** as a thank you, payable by <<PayPal or>> check>>.

To complete the survey online: <<Website URL>>

To complete by phone: 877-287-3782

Study ID: «StudyID»

Password: «password»

Thank you for your participation.

The 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) is a survey of individuals who earned their bachelor's degree during the 2015-16 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: 1850-0926.

Learn more about our confidentiality procedures at <<Website Confidentiality URL>>.

OPEN
HERE

Only a limited number of people

<<with a major in [major]>>

were selected for this study.

You represent many others who were not selected.

www.ed.gov nces.ed.gov

National Center for Education Statistics
U.S. Department of Education (ATTN: Data Capture)
5265 Capital Boulevard
Raleigh, NC 27616-2925
RTI Project 0214099.101.002.424

ADDRESS SERVICE REQUESTED

«name»
«addr1»
«addr2»
«city», «st» «zip»

<<PanelInfo>>/<<ControlID>>

Text Messages

Text Message Reminder 1

Hi «fname»! Your B&B survey from the U.S. Department of Education is now online. [You will receive $«IncAmt+Early_AMT» to complete the survey today!] Click here to take the survey: [LINK]

Text Message Reminder 2

«fname», this is a reminder to complete your B&B survey. Follow this link to take the survey [and get $«IncAmt» as a token of appreciation]: [LINK]

Text Message Reminder 3

Your B&B survey is still available, «fname»! [If you participate we will say thank you with $«IncAmt».] Click this link to take the survey: [LINK]

Text Message Reminder 4

Hi «fname»! Your B&B survey now takes only 10 minutes[and you will get $«IncAmt» as a thank you]! Take the survey by clicking here: [LINK]

Text Message Reminder 5

Last chance, «fname»! Your B&B survey [and the $«IncAmt» thank you] is only available through June 30. Follow this link to take the survey: [LINK]

Text Message, Reminder 6

«fname», tomorrow is the last day to participate in B&B! [We will thank you with $«IncAmt»!] Take the survey by clicking here: [LINK]

Flyer

<<Fname>>

Start the summer off right

with $<<inc_amt>>.

THE B&B SURVEY CLOSES ON <<DATE>>.

THIS IS THE LAST CHANCE TO MAKE A DIFFERENCE.

Participating takes <<time>> minutes and you will receive $<<inc_amount>> as a token of our appreciation.

Data collected from B&B will help researchers and policymakers better understand how earning a bachelor's degree impacts choices for additional education and employment paths. These data are being collected for NCES by RTI International, a U.S.-based nonprofit research organization. Your participation in B&B is critical to the success of the study.

THANK YOU FOR YOUR PARTICIPATION

Login: <<Website URL>>

Or call 877-287-3782

Study ID: «StudyID»

Password: «password»

The 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) is a survey of individuals who earned their bachelor's degree during the 2015-16 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: 1850-0926.

Learn more about our confidentiality procedures at <<Website Confidentiality URL>>.

Incentive Letter

<<date>>

<<name>>
<<addr1>>
<<addr2>>
<<city>>, <<st>> <<zip>>

Dear «fname» «lname»:

On behalf of the National Center for Education Statistics (NCES) in the U.S. Department of Education's Institute of Education Sciences and the staff of the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), we would like to thank you. Your participation in B&B is very important in helping to ensure the success of the study.

Enclosed you will find a check for $«IncAmt» as a token of our appreciation.

If you have any questions, please do not hesitate to contact us at 877-225-8470.

Sincerely,

Jennifer Wine, Ph.D.	Ted Socha
B&B Project Director	NCES Project Officer
RTI International	National Center for Education Statistics (NCES)

Appendix H. Analysis Variables

Table H-1. Analysis variables: 2017

Variable name	Subject	Variable label
ID	Survey sample	Analysis ID
B1ACS16A	Demographic characteristics	Disability: Deaf or serious difficulty hearing, as of B&B:16/17 interview
B1ACS16B	Demographic characteristics	Disability: Blind or serious difficulty seeing, as of B&B:16/17 interview
B1ACS17A	Demographic characteristics	Disability: Serious difficulty remembering, concentrating, etc., as of B&B:16/17 interview
B1ACS17B	Demographic characteristics	Disability: Serious difficulty walking or climbing stairs, as of B&B:16/17 interview
B1AFFCHLD	Finances	Result of financial cost of undergraduate and graduate education: Delayed having children, as of B&B:16/17 interview
B1AFFEDJB	Finances	Result of financial cost of undergraduate and graduate education: Took job instead of enrolling in additional education, as of B&B:16/17 interview
B1AFFHOME	Finances	Result of financial cost of undergraduate and graduate education: Delayed buying a home, as of B&B:16/17 interview
B1AFFLESS	Finances	Result of financial cost of undergraduate and graduate education: Took job outside of field of study or a less desirable job, as of B&B:16/17 interview
B1AFFMARR	Finances	Result of financial cost of undergraduate and graduate education: Delayed getting married, as of B&B:16/17 interview
B1AFFWKMR	Finances	Result of financial cost of undergraduate and graduate education: Worked more than desired, as of B&B:16/17 interview
B1AGEATBA	Demographic characteristics	Age, as of BA completion
B1ALONE	Family	Household composition: Living alone, as of B&B:16/17 interview
B1APPLY	PreK–12 teaching: Experiences	Ever applied for a preK–12th grade teaching position, as of June 2017
B1ARTRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught arts/music
B1AWFAM	Demographic characteristics	Respondent's immediate family aware of sexual orientation, as of B&B:16/17 interview
B1AWSOC	Demographic characteristics	People respondent socializes with aware of sexual orientation, as of B&B:16/17 interview
B1AWWORK	Demographic characteristics	People respondent works with aware of sexual orientation, as of B&B:16/17 interview
B1BAL1ST	Employment: History	First job, within 12 months after BA completion: Satisfaction with work-life balance
B1BALRCNT	Employment: History	Most recent job, within 12 months after BA completion: Satisfaction with work-life balance
B1BAMJ2CIP	Undergraduate education	BA secondary major: CIP code
B1BAMJCIP	Undergraduate education	BA primary major: CIP code
B1BATOPBA	Postbaccalaureate education	Months between bachelor's completion and first post-bachelor's enrollment, within 12 months after BA completion
B1BEN1ST	Employment: History	First job, within 12 months after BA completion: Satisfaction with benefits
B1BENANY	Employment: History	Ever had a job that offered benefits, within 12 months after BA completion
B1BENANY1ST	Employment: History	First job, within 12 months after BA completion: Employer offered any benefits
B1BENANYRCNT	Employment: History	Most recent job, within 12 months after BA completion: Employer offered any benefits
B1BENBEN	Employment: Search	Importance of job factors, as of B&B:16/17 interview: Employer-provided benefits
B1BENCOM	Employment: Search	Importance of job factors, as of B&B:16/17 interview: Commute
B1BENFLEX	Employment: Search	Importance of job factors, as of B&B:16/17 interview: Making decisions
B1BENPRO	Employment: Search	Importance of job factors, as of B&B:16/17 interview: Promotion opportunities
B1BENRCNT	Employment: History	Most recent job, within 12 months after BA completion: Satisfaction with benefits

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1BENRELA	Employment: Search	Importance of job factors, as of B&B:16/17 interview: Work related to field of study
B1BENSAL	Employment: Search	Importance of job factors, as of B&B:16/17 interview: Wages and bonuses
B1BOCOM1ST	Employment: History	First job, within 12 months after BA completion: Amount of annualized tips, bonus, or commissions
B1BOCOMRCNT	Employment: History	Most recent job, within 12 months after BA completion: Amount of annualized tips, bonus, or commissions
B1BORAMT3	Financial aid: Borrowed cumulative	Cumulative amount borrowed for undergraduate and graduate education, as of June 2017
B1CARIND	Employment: History	Ever had a job that was part of career, within 12 months after BA completion
B1CARIND1ST	Employment: History	First job, within 12 months after BA completion: Part of a career
B1CARINDRCNT	Employment: History	Most recent job, within 12 months after BA completion: Part of a career
B1CARLOAN	Finances	Monthly vehicle loan or lease payment, as of B&B:16/17 interview
B1CERTART	PreK–12 teaching: Experiences	Certified to teach arts/music, as of B&B:16/17 interview
B1CERTENG	PreK–12 teaching: Experiences	Certified to teach English/language arts, as of B&B:16/17 interview
B1CERTESL	PreK–12 teaching: Experiences	Certified to teach ESL, as of B&B:16/17 interview
B1CERTFLG	PreK–12 teaching: Experiences	Certified to teach foreign languages, as of B&B:16/17 interview
B1CERTGENA	PreK–12 teaching: Experiences	Certified to teach elementary education, as of B&B:16/17 interview
B1CERTGENB	PreK–12 teaching: Experiences	Certified to teach general education (middle or secondary grades), as of B&B:16/17 interview
B1CERTHLTH	PreK–12 teaching: Experiences	Certified to teach health/physical education, as of B&B:16/17 interview
B1CERTMTH	PreK–12 teaching: Experiences	Certified to teach math/computer science, as of B&B:16/17 interview
B1CERTOTH	PreK–12 teaching: Experiences	Certified to teach other unspecified subject, as of B&B:16/17 interview
B1CERTPREK	PreK–12 teaching: Experiences	Certified to teach early childhood education (preK), as of B&B:16/17 interview
B1CERTSCI	PreK–12 teaching: Experiences	Certified to teach natural sciences, as of B&B:16/17 interview
B1CERTSOC	PreK–12 teaching: Experiences	Certified to teach social sciences, as of B&B:16/17 interview
B1CERTSPED	PreK–12 teaching: Experiences	Certified to teach special education, as of B&B:16/17 interview
B1CERTVOC	PreK–12 teaching: Experiences	Certified to teach vocational/career/technical education, as of B&B:16/17 interview
B1CITZN	Demographic characteristics	US citizenship status, as of B&B:16/17 interview
B1CLB	Undergraduate education	Involved in extracurricular club or group during undergraduate education
B1CLICENSE	Employment: Description	Had professional certification or state or industry license, within 12 months after BA completion
B1CNSCUM	Financial aid: Federal loans	Cumulative amount of federal loans consolidated, 12 months after BA completion
B1CONTEMP	Finances	Contributed to employer-based retirement account, within the 12 months before B&B:16/17 interview
B1CONTNON	Finances	Contributed to non-employer-based retirement savings account, within the 12 months before B&B:16/17 interview
B1COOP	Undergraduate education	Participated in a co-operative experience during undergraduate education
B1CRDBAL	Finances	Credit card balance, as of B&B:16/17 interview
B1CSTDYCR	Family	Monthly childcare costs, as of B&B:16/17 interview
B1CURBEN1ST	Employment: History	First job, within 12 months after BA completion: Reason for non-career job: To receive benefits
B1CURBENRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason for non-career job: To receive benefits
B1CURCRT	PreK–12 teaching: Experiences	Certified to teach, as of B&B:16/17 interview
B1CUREDU1ST	Employment: History	First job, within 12 months after BA completion: Reason for non-career job: To earn money for future education
B1CUREDURCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason for non-career job: To earn money for future education

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1CUREXP1ST	Employment: History	First job, within 12 months after BA completion: Reason for non-career job: To obtain job experience
B1CUREXPRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason for non-career job: To obtain job experience
B1CUROTH1ST	Employment: History	First job, within 12 months after BA completion: Reason for non-career job: Other reason
B1CUROTHRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason for non-career job: Other reason
B1CURPAY1ST	Employment: History	First job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills
B1CURPAYRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills
B1DEP2	Family	Number of dependent children, 12 months after BA completion
B1DEPAGEHIGH	Family	Age of oldest dependent child, 12 months after BA completion
B1DEPAGELOW	Family	Age of youngest dependent child, 12 months after BA completion
B1DERMAJHI	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Major or field of study
B1DFRECN	Financial aid: Federal loans	Number of economic hardship federal loan deferments, 12 months after BA completion
B1DFRENR	Financial aid: Federal loans	Number of school enrollment federal loan deferments, 12 months after BA completion
B1DFRFAM	Financial aid: Federal loans	Number of family or disability federal loan deferments, 12 months after BA completion
B1DFRGOV	Financial aid: Federal loans	Number of government program federal loan deferments, 12 months after BA completion
B1DFRMIL	Financial aid: Federal loans	Number of military or law enforcement federal loan deferments, 12 months after BA completion
B1DFRNUM	Financial aid: Federal loans	Total number of federal loan deferments, 12 months after BA completion
B1DFRREAS	Financial aid: Federal loans	Most common federal loan deferment reason, 12 months after BA completion
B1DFRTCH	Financial aid: Federal loans	Number of teacher, medical, or non-profit federal loan deferments, 12 months after BA completion
B1DISABLE	Demographic characteristics	Has some type of disability, as of B&B:16/17 interview
B1DLQNUM	Financial aid: Federal loans	Total number of delinquencies, 12 months after BA completion
B1DONATE	Finances	Donated to 2015–16 BA-granting institution, as of B&B:16/17 interview
B1DPNTS	Family	Household composition: Living with dependents, as of B&B:16/17 interview
B1DUPCRRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Took junior/senior courses in primary subject taught
B1EDUIND1ST	Employment: Employer	First employer, within 12 months after BA completion: Employer education level
B1EDUINDRCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Level of education industry
B1EERCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught elementary education
B1ELNINAW	PreK–12 teaching: Experiences	Teacher loan forgiveness programs: Influence and participation, as of B&B:16/17 interview
B1ELNPRT	PreK–12 teaching: Experiences	Teacher loan forgiveness awareness, as of B&B:16/17 interview
B1EMPDIS	Employment: Description	Reason not working for pay, between BA completion and June 2017: Disability
B1EMPHM	Employment: Description	Reason not working for pay, between BA completion and June 2017: Homemaker
B1EMPSLF	Employment: Employer	Ever self-employed, within 12 months after BA completion
B1EMPSLF1ST	Employment: Employer	First employer, within 12 months after BA completion: Self-employed

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1EMPSLFRCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Self-employed
B1EMPTMP	Employment: Description	Reason not working for pay, between BA completion and June 2017: Laid off, on leave, or waiting to report to work
B1EMPTRV	Employment: Description	Reason not working for pay, between BA completion and June 2017: Traveling
B1EMPTYP1ST	Employment: Employer	First employer, within 12 months after BA completion: Type of employer
B1EMPTYPRCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Type of employer
B1EMPVOL	Employment: Description	Reason not working for pay, between BA completion and June 2017: Volunteering or unpaid internship
B1ENGRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught English/language arts
B1ENR	Undergraduate education	Ever enrolled at BA-granting and another institution simultaneously
B1ENRPG	Postbaccalaureate education	Enrolled in a degree/certificate program, within 12 months after BA completion
B1EPREPALT	PreK–12 teaching: Experiences	Prepared to teach through an alternative entry program, as of B&B:16/17 interview
B1EPREPCOL	PreK–12 teaching: Experiences	Prepared to teach at a college or university that provides certification, as of B&B:16/17 interview
B1EPREPCOMP	PreK–12 teaching: Experiences	Prepared to teach through a student teaching assignment, as of B&B:16/17 interview
B1EPREPONL	PreK–12 teaching: Experiences	Prepared to teach through an online-only certification program, as of B&B:16/17 interview
B1EPRMSBRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Primary subject taught
B1ERNHIDG	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Completed program
B1ESLRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught ESL
B1ESTTCLG	PreK–12 teaching: Experiences	Length of student teaching
B1ETEACHGT	PreK–12 teaching: Experiences	TEACH grant awareness, as of B&B:16/17 interview
B1EVERLK	Employment: History	Ever looked for work within 12 months after BA completion
B1EVRCNS	Financial aid: Federal loans	Ever consolidated federal loans, 12 months after BA completion
B1EVRDCHG	Financial aid: Federal loans	Ever had any balance on a federal loan discharged, 12 months after BA completion
B1EVRDFRFB	Financial aid: Federal loans	Ever had a deferment or forbearance on a federal loan, 12 months after BA completion
B1EVRTCH	PreK–12 teaching: Experiences	Ever taught at preK through 12th grade level, as of B&B:16/17 interview
B1EVRVT	Public service participation	Ever voted in any election, as of B&B:16/17 interview
B1EXP16	Postbaccalaureate education	Enrolled in highest degree expected at time of NPSAS:16 interview, within 12 months after BA completion
B1EXP17	Postbaccalaureate education	Enrolled in highest degree expected at time of B&B:16/17 interview, within 12 months after BA completion
B1EXPAP	Undergraduate education	Ever on academic probation during undergraduate education
B1EXPEVR	Postbaccalaureate education	Highest level of education expected ever, as of B&B:16/17 interview
B1EXPGH	Undergraduate education	Graduated from BA-granting institution with academic honors
B1FACS	Postbaccalaureate education	Main factor in post-bachelor's field of study choice between BA completion and June 2017
B1FAMLNHLP	Financial aid: Debt and repayment	Family or friends helping to repay loans, within the 12 months before the B&B:16/17 interview
B1FBNUM	Financial aid: Federal loans	Total number of federal loan forbearances, 12 months after BA completion
B1FDAWRK1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Already working for employer

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1FDAWRKRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Already working for employer
B1FDCOL1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Colleague or mentor
B1FDCOLRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Colleague or mentor
B1FDDI1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Direct inquiry
B1FDDIRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Direct inquiry
B1FDFAC1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Faculty member or alumni
B1FDFACRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Faculty member or alumni
B1FDFAM1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Friends or family
B1FDFAMRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Friends or family
B1FDHHR1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Headhunter or recruiter
B1FDHHRRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Headhunter or recruiter
B1FDINT1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Internship
B1FDINTRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Internship
B1FDONL1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Online job posting
B1FDONLRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Online job posting
B1FDOTH1ST	Employment: Search	First employer, within 12 months after BA completion: Found job through: Other
B1FDOTHRCNT	Employment: Search	Most recent employer, within 12 months after BA completion: Found job through: Other
B1FEDALLPAID	Financial aid: Federal loans	All non-discharged federal loans paid in full, 12 months after BA completion
B1FEDALLPAIDM	Financial aid: Federal loans	Months between entering repayment and all non-discharged federal loans paid in full, 12 months after BA completion
B1FEDBORNUM	Financial aid: Federal loans	Total number of federal loans received, 12 months after BA completion
B1FEDBORYRS1	Financial aid: Federal loans	Number of years received undergraduate federal loans, 12 months after BA completion
B1FEDBORYRS2	Financial aid: Federal loans	Number of years received graduate federal loans, 12 months after BA completion
B1FEDBORYRS3	Financial aid: Federal loans	Total number of years received federal loans, 12 months after BA completion
B1FEDCUM1	Financial aid: Federal loans	Cumulative amount of undergraduate federal loans, 12 months after BA completion
B1FEDCUM1JN17	Financial aid: Federal loans	Cumulative amount of undergraduate federal loans, as of June 2017
B1FEDCUM2	Financial aid: Federal loans	Cumulative amount of graduate federal loans, 12 months after BA completion
B1FEDCUM2JN17	Financial aid: Federal loans	Cumulative amount of graduate federal loans, as of June 2017
B1FEDCUM3	Financial aid: Federal loans	Cumulative amount of federal loans, 12 months after BA completion
B1FEDCUM3JN17	Financial aid: Federal loans	Cumulative amount of federal loans, as of June 2017
B1FEDDUE1	Financial aid: Federal loans	Cumulative federal loan amount owed, principal and interest, for undergraduate education, 12 months after BA completion
B1FEDDUE2	Financial aid: Federal loans	Cumulative federal loan amount owed, principal & interest, for graduate education, 12 months after BA completion

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1FEDDUE3	Financial aid: Federal loans	Cumulative federal loan amount owed, principal and interest, for undergraduate and graduate education, 12 months after BA completion
B1FEDEVRPIF	Financial aid: Federal loans	Ever paid a non-discharged federal loan in full, 12 months after BA completion
B1FEDLNPMT	Financial aid: Federal loans	Monthly payment on federal student loans, 12 months after BA completion
B1FEDLNPMTJN17	Financial aid: Federal loans	Monthly payment on federal student loans, June 2017
B1FEDOWE1	Financial aid: Federal loans	Cumulative federal loan amount owed for undergraduate education, principal only, 12 months after BA completion
B1FEDOWE1JN17	Financial aid: Federal loans	Cumulative federal loan amount owed for undergraduate education, principal only, as of June 2017
B1FEDOWE2	Financial aid: Federal loans	Cumulative federal loan amount owed for graduate education, principal only, 12 months after BA completion
B1FEDOWE2JN17	Financial aid: Federal loans	Cumulative federal loan amount owed for graduate education, principal only, as of June 2017
B1FEDOWE3	Financial aid: Federal loans	Cumulative federal loan amount owed for undergraduate and graduate education, principal only, 12 months after BA completion
B1FEDOWE3JN17	Financial aid: Federal loans	Cumulative federal loan amount owed for undergraduate and graduate education, principal only, as of June 2017
B1FEDPAYPLAN	Financial aid: Federal loans	Type of federal loan repayment plan, 12 months after BA completion
B1FEDPCTDUE	Financial aid: Federal loans	Ratio of amount owed to amount borrowed in federal loans, 12 months after BA completion
B1FEDPCTOWE	Financial aid: Federal loans	Ratio of principal amount owed to amount borrowed in federal loans, 12 months after BA completion
B1FIN2000	Finances	Respondent's confidence in ability to come up with $2,000 within the next month, as of B&B:16/17 interview
B1FLRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught foreign languages
B1FRPLRCNT	PreK–12 teaching: Experiences	Most recent school, within 12 months after BA completion: Percent free or reduced price lunch eligible
B1FTRBEGSAL	Employment: Future	Estimated expected beginning salary, as of NPSAS:16 interview
B1FTRHIGHSAL	Employment: Future	Estimated highest possible beginning salary, as of NPSAS:16 interview
B1FTRLOWSAL	Employment: Future	Estimated lowest possible beginning salary, as of NPSAS:16 interview
B1GENDER	Demographic characteristics	Gender, as of B&B:16/17 interview
B1GMAT	Postbaccalaureate education	Took GMAT, as of June 2017
B1GPA	Undergraduate education	Overall GPA for 2015–16 BA degree
B1GPLUSCUM	Financial aid: Federal loans	Cumulative amount borrowed in graduate PLUS Loans, 12 months after BA completion
B1GRDEXM	Postbaccalaureate education	Took a graduate or professional entrance exam, as of June 2017
B1GRE	Postbaccalaureate education	Took GRE, as of June 2017
B1GREEK	Undergraduate education	Involved in Greek life during undergraduate education
B1HAVEDEPM00	Family	Have any dependents, month of BA completion
B1HAVEDEPM01	Family	Have any dependents, 1 month after BA completion
B1HAVEDEPM02	Family	Have any dependents, 2 months after BA completion
B1HAVEDEPM03	Family	Have any dependents, 3 months after BA completion
B1HAVEDEPM04	Family	Have any dependents, 4 months after BA completion
B1HAVEDEPM05	Family	Have any dependents, 5 months after BA completion
B1HAVEDEPM06	Family	Have any dependents, 6 months after BA completion
B1HAVEDEPM07	Family	Have any dependents, 7 months after BA completion
B1HAVEDEPM08	Family	Have any dependents, 8 months after BA completion
B1HAVEDEPM09	Family	Have any dependents, 9 months after BA completion
B1HAVEDEPM10	Family	Have any dependents, 10 months after BA completion
B1HAVEDEPM11	Family	Have any dependents, 11 months after BA completion
B1HAVEDEPM12	Family	Have any dependents, 12 months after BA completion

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1HIDEG	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Degree type
B1HIDGASST	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Had assistantships or fellowships
B1HIDGEMPAID	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used employer tuition assistance
B1HIDGENST	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Enrollment intensity
B1HIDGFED	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used federal student loans
B1HIDGGIFT	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used personal loan or gift
B1HIDGGRANT	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used grants or scholarships
B1HIDGIPDS	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: IPEDS ID
B1HIDGMAJ	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Major or field of study (23 categories)
B1HIDGONLIN	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Took online courses
B1HIDGOTHAID	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used other financial aid type
B1HIDGPOCKET	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used own money
B1HIDGPRIV	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Used private loans
B1HIDGSEC	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Institution sector
B1HIDGWRKSDY	Postbaccalaureate education	Highest degree enrollment, within 12 months after BA completion: Had federal work-study
B1HOMOWE	Finances	Amount owed on mortgage for primary residence, as of B&B:16/17 interview
B1HOMVAL	Finances	Value of residence, as of B&B:16/17 interview
B1HOTH	Family	Household composition: Living with other types of individuals, as of B&B:16/17 interview
B1HOURST1ST	Employment: History	First job, within 12 months after BA completion: Average starting hours
B1HOURSTRCNT	Employment: History	Most recent job, within 12 months after BA completion: Average starting hours
B1HOUSE	Finances	Housing status, as of B&B:16/17 interview
B1HPERCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught health/physical education
B1HRCHNG1ST	Employment: History	First job, within 12 months after BA completion: Number of hours changes
B1HRCHNGRCNT	Employment: History	Most recent job, within 12 months after BA completion: Number of hours changes
B1HRS12RCNT	Employment: History	Most recent job, within 12 months after BA completion: Hours worked in month 12
B1IDR	Financial aid: Federal loans	Enrolled in an income-based repayment plan, 12 months after BA completion
B1IDRPLAN	Financial aid: Federal loans	Type of income-based repayment plan, 12 months after BA completion
B1INCHO	Undergraduate education	Satisfaction with quality of undergraduate education, as of B&B:16/17 interview
B1INCOM	Finances	Gross income, 2016 calendar year
B1INCSP	Family	Spouse or domestic partner's gross income, 2016 calendar year
B1IND01	PreK–12 teaching: Experiences	Participated in formal teacher induction program in first teaching job since 2015–16 BA

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1INDU1ST	Employment: Employer	First employer, within 12 months after BA completion: Industry
B1INDURCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Industry
B1INFLACCT	PreK–12 teaching: Experiences	Teaching influences, as of B&B:16/17 interview: Teacher accountability
B1INFLADV	PreK–12 teaching: Experiences	Teaching influences, as of B&B:16/17 interview: Possibilities for career advancement
B1INFLCONT	PreK–12 teaching: Experiences	Teaching influences, as of B&B:16/17 interview: Opportunity to contribute to society
B1INFLFIN	PreK–12 teaching: Experiences	Teaching influences, as of B&B:16/17 interview: Financial compensation
B1INFLKIDS	PreK–12 teaching: Experiences	Teaching influences, as of B&B:16/17 interview: Working with kids
B1INFLPRES	PreK–12 teaching: Experiences	Teaching influences, as of B&B:16/17 interview: Prestige of occupation
B1INFWK	Employment: Status	Had informal work between BA completion and June 2017
B1INFWKEN	Employment: Description	Earnings from informal work, between BA completion and June 2017
B1INTERN	Employment: Description	Had a paid internship, within 12 months after BA completion
B1INTERN1ST	Employment: History	First job, within 12 months after BA completion: Internship
B1INTERNRCNT	Employment: History	Most recent job, within 12 months after BA completion: Internship
B1JOBPRIOR1ST	Employment: History	First job, within 12 months after BA completion: Held job prior to BA completion
B1JOBPRIORRCNT	Employment: History	Most recent job, within 12 months after BA completion: Held job prior to BA completion
B1LANGS	Demographic characteristics	Second language, as of B&B:16/17 interview
B1LEVRCNT	PreK–12 teaching: Experiences	Most recent school, within 12 months after BA completion: Level
B1LFP12M	Employment: Description	Employment and enrollment status, 12 months after BA completion
B1LGBTQ	Demographic characteristics	Sexual orientation, as of B&B:16/17 interview
B1LICREQ1ST	Employment: History	First job, within 12 months after BA completion: License required for work
B1LICREQRCNT	Employment: History	Most recent job, within 12 months after BA completion: License required for work
B1LKCOL	Employment: Search	Job search activities, between BA completion and June 2017: Talked to coworkers or mentors
B1LKEMA	Employment: Search	Job search activities, between BA completion and June 2017: Used an employment agency
B1LKFAC	Employment: Search	Job search activities, between BA completion and June 2017: Talked to faculty members or alumni
B1LKFAM	Employment: Search	Job search activities, between BA completion and June 2017: Talked to friends or family
B1LKINT	Employment: Search	Job search activities, between BA completion and June 2017: Completed an internship
B1LKONL	Employment: Search	Job search activities, between BA completion and June 2017: Searched online job postings
B1LKOTH	Employment: Search	Job search activities, between BA completion and June 2017: Other
B1LKWKM00	Employment: History	Looked for work, month of BA completion
B1LKWKM01	Employment: History	Looked for work, 1 month after BA completion
B1LKWKM02	Employment: History	Looked for work, 2 months after BA completion
B1LKWKM03	Employment: History	Looked for work, 3 months after BA completion
B1LKWKM04	Employment: History	Looked for work, 4 months after BA completion
B1LKWKM05	Employment: History	Looked for work, 5 months after BA completion
B1LKWKM06	Employment: History	Looked for work, 6 months after BA completion
B1LKWKM07	Employment: History	Looked for work, 7 months after BA completion
B1LKWKM08	Employment: History	Looked for work, 8 months after BA completion
B1LKWKM09	Employment: History	Looked for work, 9 months after BA completion
B1LKWKM10	Employment: History	Looked for work, 10 months after BA completion
B1LKWKM11	Employment: History	Looked for work, 11 months after BA completion
B1LKWKM12	Employment: History	Looked for work, 12 months after BA completion

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1LNGCAR	Demographic characteristics	Used non-English language in a job since BA completion, as of B&B:16/17 interview
B1LNNFPMT	Financial aid: Private loans	Monthly payment on private student loans, as of June 2017
B1LOCRCNT	PreK–12 teaching: Experiences	Most recent school, within 12 months after BA completion: Locale
B1LSAT	Postbaccalaureate education	Took LSAT, as of June 2017
B1LVCAR	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with teaching as a career or wanted to pursue another career
B1LVCOND	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with workplace conditions
B1LVLAID	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Laid off
B1LVOTH	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Other
B1LVPERS	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Personal life reasons
B1LVSAL	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Inadequate salary and/or benefits
B1LVSCHL	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Returned to school
B1LVTRSF	PreK–12 teaching: Experiences	Reasons left teaching, as of B&B:16/17 interview: Involuntarily transferred
B1MAIN1	Demographic characteristics	Main disability condition/impairment, as of B&B:16/17 interview
B1MAJCHO	Undergraduate education	Satisfaction with choice of undergraduate major, as of B&B:16/17 interview
B1MAJORS23	Undergraduate education	BA major (detailed), 2015–16
B1MAJORS4Y	Undergraduate education	Field of study: Undergraduate (10 categories)
B1MARCHA	Demographic characteristics	Family status, 12 months after BA completion (considering only dependent children)
B1MARCHB	Demographic characteristics	Family status, 12 months after BA completion (considering all dependents)
B1MARR	Demographic characteristics	Marital status, as of B&B:16/17 interview
B1MARRM00	Demographic characteristics	Marital status, month of BA completion
B1MARRM01	Demographic characteristics	Marital status, 1 month after BA completion
B1MARRM02	Demographic characteristics	Marital status, 2 months after BA completion
B1MARRM03	Demographic characteristics	Marital status, 3 months after BA completion
B1MARRM04	Demographic characteristics	Marital status, 4 months after BA completion
B1MARRM05	Demographic characteristics	Marital status, 5 months after BA completion
B1MARRM06	Demographic characteristics	Marital status, 6 months after BA completion
B1MARRM07	Demographic characteristics	Marital status, 7 months after BA completion
B1MARRM08	Demographic characteristics	Marital status, 8 months after BA completion
B1MARRM09	Demographic characteristics	Marital status, 9 months after BA completion
B1MARRM10	Demographic characteristics	Marital status, 10 months after BA completion
B1MARRM11	Demographic characteristics	Marital status, 11 months after BA completion
B1MARRM12	Demographic characteristics	Marital status, 12 months after BA completion
B1MATRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught math/computer science
B1MCAT	Postbaccalaureate education	Took MCAT, as of June 2017
B1MEMPM00	Employment: History	Employed, month of BA completion
B1MEMPM01	Employment: History	Employed, 1 month after BA completion
B1MEMPM02	Employment: History	Employed, 2 months after BA completion
B1MEMPM03	Employment: History	Employed, 3 months after BA completion
B1MEMPM04	Employment: History	Employed, 4 months after BA completion
B1MEMPM05	Employment: History	Employed, 5 months after BA completion
B1MEMPM06	Employment: History	Employed, 6 months after BA completion
B1MEMPM07	Employment: History	Employed, 7 months after BA completion
B1MEMPM08	Employment: History	Employed, 8 months after BA completion
B1MEMPM09	Employment: History	Employed, 9 months after BA completion
B1MEMPM10	Employment: History	Employed, 10 months after BA completion

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1MEMPM11	Employment: History	Employed, 11 months after BA completion
B1MEMPM12	Employment: History	Employed, 12 months after BA completion
B1MILIT	Public service participation	Military status, as of B&B:16/17 interview
B1MTGAMT	Finances	Monthly rent or mortgage payment amount, as of B&B:16/17 interview
B1NATIVE	Demographic characteristics	Native language
B1NDCWK	Postbaccalaureate education	Enrolled in nondegree coursework between BA completion and June 2017
B1NEMP	Employment: History	Spent time not working and not enrolled, within 12 months after BA completion
B1NEMPBW	Employment: History	Spent time taking a break from work during non-working and non-enrollment spans, between BA completion and June 2017
B1NEMPCC	Employment: History	Spent time caring for children during non-working and non-enrollment spans, between BA completion and June 2017
B1NEMPCF	Employment: History	Spent time caring for family during non-working and non-enrollment spans, between BA completion and June 2017
B1NEMPHI	Employment: History	Spent time with personal health issues during non-working and non-enrollment spans, between BA completion and June 2017
B1NEMPLW	Employment: History	Spent time looking for work during non-working and non-enrollment spans, between BA completion and June 2017
B1NEMPSE	Employment: History	Spent time doing something else during non-working and non-enrollment spans, between BA completion and June 2017
B1NEMPUI	Employment: History	Spent time in an unpaid internship during non-working and non-enrollment spans, between BA completion and June 2017
B1NFCUM	Financial aid: Private loans	Cumulative nonfederal loans borrowed, as of June 2017
B1NFSTAT	Financial aid: Private loans	Repayment status for private loans, as of June 2017
B1NPCHNM	Undergraduate education	Number of times changed major for BA degree
B1NPCONT	Undergraduate education	Breaks in attendance from BA-granting institution
B1NPOMAJ	Undergraduate education	Original BA major
B1NSF19B	Employment: History	Ever had a job that was closely related to major or field of study, within 12 months after BA completion
B1NSF19B1ST	Employment: History	First job, within 12 months after BA completion: Related to bachelor's degree program
B1NSF19BRCNT	Employment: History	Most recent job, within 12 months after BA completion: Related to BA program
B1NSFA1ST	Employment: History	First job, within 12 months after BA completion: Requires a BA
B1NSFARCNT	Employment: History	Most recent job, within 12 months after BA completion: Requires a BA
B1NUMCRD	Finances	Number of credit cards, as of B&B:16/17 interview
B1NUMEMP	Employment: Description	Number of employers, within 12 months after BA completion
B1NUMINST	Undergraduate education	Number of institutions attended before BA completion
B1NUMJOB1ST	Employment: Employer	First employer, within 12 months after BA completion: Number of jobs
B1NUMJOBRCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Number of jobs
B1NUMNCD	Family	Number of non-child dependents, 12 months after BA completion
B1NUMP1ST	Employment: Employer	First employer, within 12 months after BA completion: Number of employees
B1NUMPRCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Number of employees
B1NUMSCH	Postbaccalaureate education	Number of colleges, universities, or trade schools enrolled in, within 12 months after BA completion
B1NUTRNACC	Undergraduate education	Successfully transferred credits to BA-granting institution
B1NUTRNCRD	Undergraduate education	Ever attempted to transfer credits to BA-granting institution
B1OCC231ST	Employment: History	First job, within 12 months after BA completion: Occupation, 23 categories
B1OCC23RCNT	Employment: History	Most recent job, within 12 months after BA completion: Occupation, 23 categories
B1OCC331ST	Employment: History	First job, within 12 months after BA completion: Occupation, 33 categories

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1OCC33RCNT	Employment: History	Most recent job, within 12 months after BA completion: Occupation, 33 categories
B1ORIGIN	Demographic characteristics	Country of birth
B1OTHRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught other unspecified subject
B1OTREL	Family	Household composition: Living with other relatives, as of B&B:16/17 interview
B1OWEINLRP	Financial aid: Federal loans	Outstanding interest amount, 12 months after BA completion
B1PARIL	Family	Household composition: Living with parents or in-laws, as of B&B:16/17 interview
B1PAY1ST	Employment: History	First job, within 12 months after BA completion: Satisfaction with compensation
B1PAYCHG1ST	Employment: History	First job, within 12 months after BA completion: Number of pay changes
B1PAYCHGRCNT	Employment: History	Most recent job, within 12 months after BA completion: Number of pay changes
B1PAYRCNT	Employment: History	Most recent job, within 12 months after BA completion: Satisfaction with compensation
B1PBENCONT	Postbaccalaureate education	Bachelor's to post-bachelor's enrollment continuous
B1PBENM00	Postbaccalaureate education	Enrolled month of BA completion
B1PBENM01	Postbaccalaureate education	Enrolled 1 month after BA completion
B1PBENM02	Postbaccalaureate education	Enrolled 2 months after BA completion
B1PBENM03	Postbaccalaureate education	Enrolled 3 months after BA completion
B1PBENM04	Postbaccalaureate education	Enrolled 4 months after BA completion
B1PBENM05	Postbaccalaureate education	Enrolled 5 months after BA completion
B1PBENM06	Postbaccalaureate education	Enrolled 6 months after BA completion
B1PBENM07	Postbaccalaureate education	Enrolled 7 months after BA completion
B1PBENM08	Postbaccalaureate education	Enrolled 8 months after BA completion
B1PBENM09	Postbaccalaureate education	Enrolled 9 months after BA completion
B1PBENM10	Postbaccalaureate education	Enrolled 10 months after BA completion
B1PBENM11	Postbaccalaureate education	Enrolled 11 months after BA completion
B1PBENM12	Postbaccalaureate education	Enrolled 12 months after BA completion
B1PBPVAMT	Financial aid: Private loans	Amount borrowed in private loans, between BA completion and June 2017
B1PCEMP	Employment: Description	Percent of time employed, within 12 months after BA completion
B1PCENR	Postbaccalaureate education	Percent of time enrolled, within 12 months after BA completion
B1PCOLF	Employment: Description	Percent of months not in the labor force, within 12 months after BA completion
B1PERKCUM1	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans for undergraduate education, 12 months after BA completion
B1PERKCUM2	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans for graduate education, 12 months after BA completion
B1PERKCUM3	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans, 12 months after BA completion
B1PIPLN	PreK–12 teaching: Experiences	Teacher pipeline status, as of B&B:16/17 interview
B1PMINRCNT	PreK–12 teaching: Experiences	Most recent school, within 12 months after BA completion: Percent minority
B1POSRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Teaching position type
B1PRACT	Undergraduate education	Participated in a practicum during undergraduate education
B1PREFT1ST	Employment: History	First job, within 12 months after BA completion: Prefer to work more hours
B1PREFTRCNT	Employment: History	Most recent job, within 12 months after BA completion: Prefer to work more hours
B1PREKRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught early childhood education (preK)
B1PRIVRT	Financial aid: Private loans	Private student loan interest rate, as of June 2017

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1PRSBRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Felt prepared to teach all subjects taught
B1PSE_BA	Undergraduate education	Months between initial enrollment in PSE and BA completion
B1PUPRRCNT	PreK–12 teaching: Experiences	Most recent school, within 12 months after BA completion: Control (public/private)
B1REC	Undergraduate education	Involved in intramural or recreational sports during undergraduate education
B1REGION	Demographic characteristics	Region of residence, as of B&B:16/17 interview
B1REPAYAMT	Financial aid: Debt and repayment	Monthly payment on all student loans, as of June 2017
B1RETEMP	Finances	Had an employer-based retirement account, as of B&B:16/17 interview
B1RETIRE	Finances	Had a retirement account, as of B&B:16/17 interview
B1RETNON	Finances	Had a non-employer-based retirement account, as of B&B:16/17 interview
B1RLTINT1ST	Employment: History	First job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op
B1RLTINTRCNT	Employment: History	Most recent job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op
B1RSEMP	Postbaccalaureate education	Reason for non-degree coursework between BA completion and June 2017: Needed for employment
B1RSGOAL	Postbaccalaureate education	Reason for non-degree coursework between BA completion and June 2017: Career goals
B1RSLTED	Postbaccalaureate education	Reason for non-degree coursework between BA completion and June 2017: Education goals
B1RSOTH	Postbaccalaureate education	Reason for non-degree coursework between BA completion and June 2017: Other
B1RSPERS	Postbaccalaureate education	Reason for non-degree coursework between BA completion and June 2017: Personal enrichment
B1SAL12RCNT	Employment: History	Most recent job, within 12 months after BA completion: Monthly salary in month 12
B1SALEMP	Employment: History	Ever was a salaried employee, within 12 months after BA completion
B1SALEMP1ST	Employment: History	First job, within 12 months after BA completion: Salaried employee
B1SALEMPRCNT	Employment: History	Most recent job, within 12 months after BA completion: Salaried employee
B1SAMEINST	Postbaccalaureate education	2015–16 BA institution same as highest post-bachelor's institution, within 12 months after BA completion
B1SAMEMAJ	Postbaccalaureate education	2015–16 BA major or field of study same as highest post-bachelor's major or field of study, within 12 months after BA completion
B1SAMESTATE	Employment: Employer	Ever employed in same state as bachelor's degree-granting institution, within 12 months after BA completion
B1SAMESTATE1ST	Employment: Employer	First employer, within 12 months after BA completion: Located in the same state as bachelor's degree-granting institution
B1SAMESTATERCNT	Employment: Employer	Most recent employer, within 12 months after BA completion: Located in the same state as BA-granting institution
B1SCHZIP	Institution: Location	ZIP code of BA-granting institution
B1SCIRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught natural sciences
B1SEC1ST	Employment: History	First job, within 12 months after BA completion: Satisfaction with job security
B1SECERCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught general education (middle/secondary grades)
B1SECRCNT	Employment: History	Most recent job, within 12 months after BA completion: Satisfaction with job security
B1SECT	Institutional characteristics	First postsecondary institution control and level
B1SEDRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught special education
B1SELLPO	Finances	Financial result if respondent were to sell all major possessions, turn all investments and other assets into cash, and pay off all debts, as of B&B:16/17 interview

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1SFRBFGF	Finances	Sharing financial responsibilities with boyfriend or girlfriend, as of B&B:16/17 interview
B1SFRFRRM	Finances	Sharing financial responsibilities with friends or roommates, as of B&B:16/17 interview
B1SFROTHERS	Finances	Sharing financial responsibilities with other types of individuals, as of B&B:16/17 interview
B1SFRPARENTS	Finances	Sharing financial responsibilities with parents, as of B&B:16/17 interview
B1SFRRELATIVES	Finances	Sharing financial responsibilities with a sibling, as of B&B:16/17 interview
B1SFRSPOUSE	Finances	Sharing financial responsibilities with spouse or domestic partner, as of B&B:16/17 interview
B1SINGP	Demographic characteristics	Single parent, 12 months after BA completion
B1SOCRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught social sciences
B1SPAMT	Family	Spouse or domestic partner's student loans: Amount borrowed, as of B&B:16/17 interview
B1SPCOL	Family	Spouse or domestic partner attended college or graduate school, 2016–17 school year
B1SPEMP	Family	Spouse or domestic partner ever employed, 2016 calendar year
B1SPLNPY	Family	Spouse or domestic partner's student loans: Monthly payment, as of B&B:16/17 interview
B1SPLV	Family	Spouse or domestic partner's education level, as of B&B:16/17 interview
B1SPODP	Family	Household composition: Living with spouse or domestic partner, as of B&B:16/17 interview
B1SPOWE	Family	Spouse or domestic partner's student loans: Amount owed, as of B&B:16/17 interview
B1STEMOC	Employment: History	Ever employed in a STEM occupation, within 12 months after BA completion
B1STFCUM1	Financial aid: Federal loans	Cumulative amount borrowed in Stafford Loans for undergraduate education, 12 months after BA completion
B1STFCUM2	Financial aid: Federal loans	Cumulative amount borrowed in Stafford Loans for graduate education, 12 months after BA completion
B1STFCUM3	Financial aid: Federal loans	Cumulative amount borrowed in Stafford Loans for undergraduate and graduate education, 12 months after BA completion
B1STRESS	Finances	Had financial difficulty, within the 12 months before B&B:16/17 interview
B1STSAL1ST	Employment: History	First job, within 12 months after BA completion: Starting annualized pay
B1STSALRCNT	Employment: History	Most recent job, within 12 months after BA completion: Starting annualized pay
B1STSBCUM1	Financial aid: Federal loans	Cumulative amount borrowed in subsidized Stafford Loans for undergraduate education, 12 months after BA completion
B1STSBCUM2	Financial aid: Federal loans	Cumulative amount borrowed in subsidized Stafford Loans for graduate education, 12 months after BA completion
B1STSBCUM3	Financial aid: Federal loans	Cumulative amount borrowed in subsidized Stafford Loans, 12 months after BA completion
B1STUCUM1	Financial aid: Federal loans	Cumulative amount borrowed in unsubsidized Stafford Loans for undergraduate education, 12 months after BA completion
B1STUCUM2	Financial aid: Federal loans	Cumulative amount borrowed in unsubsidized Stafford Loans for graduate education, 12 months after BA completion
B1STUCUM3	Financial aid: Federal loans	Cumulative amount borrowed in unsubsidized Stafford Loans, 12 months after BA completion
B1SUBGRE	Postbaccalaureate education	Took GRE Subject Test, as of June 2017
B1TCHM00	PreK–12 teaching: Experiences	Worked as a teacher, month of BA completion
B1TCHM01	PreK–12 teaching: Experiences	Worked as a teacher, 1 month after BA completion
B1TCHM02	PreK–12 teaching: Experiences	Worked as a teacher, 2 months after BA completion
B1TCHM03	PreK–12 teaching: Experiences	Worked as a teacher, 3 months after BA completion

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1TCHM04	PreK–12 teaching: Experiences	Worked as a teacher, 4 months after BA completion
B1TCHM05	PreK–12 teaching: Experiences	Worked as a teacher, 5 months after BA completion
B1TCHM06	PreK–12 teaching: Experiences	Worked as a teacher, 6 months after BA completion
B1TCHM07	PreK–12 teaching: Experiences	Worked as a teacher, 7 months after BA completion
B1TCHM08	PreK–12 teaching: Experiences	Worked as a teacher, 8 months after BA completion
B1TCHM09	PreK–12 teaching: Experiences	Worked as a teacher, 9 months after BA completion
B1TCHM10	PreK–12 teaching: Experiences	Worked as a teacher, 10 months after BA completion
B1TCHM11	PreK–12 teaching: Experiences	Worked as a teacher, 11 months after BA completion
B1TCHM12	PreK–12 teaching: Experiences	Worked as a teacher, 12 months after BA completion
B1TCHOCC	Employment: History	Ever employed in teaching occupation, within 12 months after BA completion
B1TCHOCC1ST	Employment: History	First job, within 12 months after BA completion: Occupation is in teaching
B1TCHOCCRCNT	Employment: History	Most recent job, within 12 months after BA completion: Occupation is in teaching
B1TEACHR	PreK–12 teaching: Experiences	Regular, long-term substitute, or support teacher, within 12 months after BA completion
B1TJBNUM	PreK–12 teaching: Experiences	Number of teaching jobs held, within 12 months after BA completion
B1TOTJOB	Employment: Description	Number of jobs, within 12 months after BA completion
B1TTLIRCNT	PreK–12 teaching: Experiences	Most recent school, within 12 months after BA completion: Title I eligible
B1UGCARPREP	Employment: Future	Studies at BA-granting institution prepared respondent for future career, as of NPSAS:16 interview
B1UGCARSRVS1	Undergraduate education	Utilized searchable job database from career planning services at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS2	Undergraduate education	Utilized career counseling from career planning services at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS3	Undergraduate education	Utilized online career or personality assessments from career planning services at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS4	Undergraduate education	Participated in career/job fairs at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS5	Undergraduate education	Participated in career planning services' mock interviews at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS6	Undergraduate education	Utilized resume or cover letter assistance from career planning services at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS7	Undergraduate education	Utilized alumni network from career planning services at BA -granting institution, as of NPSAS:16 interview
B1UGCARSRVS8	Undergraduate education	Utilized another type of career planning service at BA-granting institution, as of NPSAS:16 interview
B1UGCARSRVS9	Undergraduate education	Did not use career planning services at BA-granting institution, as of NPSAS:16 interview
B1UGEXOCC33	Employment: Future	Occupation code for expected occupation, as of NPSAS:16 interview (33 categories)
B1UGGRADAPP	Education: Graduate	Applied to graduate school before BA completion
B1UGGRDATND	Education: Graduate	Likelihood will attend graduate school within the next 12 months, as of NPSAS:16 interview
B1UGGRDPLN	Education: Graduate	Likelihood will apply to graduate school within the next 12 months, as of NPSAS:16 interview
B1UGLEADER	Undergraduate education	Held a formal leadership role during undergraduate education
B1UGLEARNCOMM	Undergraduate education	Participated in a learning community during undergraduate education
B1UGOCCCOM	Employment: Future	Likelihood of entering expected occupation, as of NPSAS:16 interview
B1UGPINTERN	Undergraduate education	Participated in a paid internship during undergraduate education
B1UGPVLN	Financial aid: Private loans	Ever had a private loan for undergraduate education, as of BA completion
B1UGRESEARCH	Undergraduate education	Participated in a research project with a faculty member during undergraduate education

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
B1UGSREXP	Undergraduate education	Participated in a culminating senior experience during undergraduate education
B1UGUINTERN	Undergraduate education	Participated in an unpaid internship during undergraduate education
B1UGWKPLN	Employment: Future	Plans for work after graduation, as of NPSAS:16 interview
B1VAR	Undergraduate education	Involved in intercollegiate sports during undergraduate education
B1VOCRCNT	PreK–12 teaching: Experiences	Most recent teaching job, within 12 months after BA completion: Taught vocational/career/technical education
B1VTNEL	Public service participation	Voted in 2016 presidential election
B1VYHRS	Public service participation	Number of hours volunteered, within the 12 months before B&B:16/17 interview
B1WORTH	Undergraduate education	Undergraduate education worth the financial cost, as of B&B:16/17 interview
B1WRK12M	Employment: Status	Ever employed for pay, within 12 months after BA completion
B1WRKS	Employment: Description	Primarily student or employee while concurrently employed and enrolled, between BA completion and June 2017
B1WYFR1ST	Employment: History	First job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities
B1WYFRRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities
B1WYMLJ1ST	Employment: History	First job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job
B1WYMLJRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job
B1WYNJA1ST	Employment: History	First job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available
B1WYNJARCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available
B1WYNOH1ST	Employment: History	First job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours
B1WYNOHRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours
B1WYOTH1ST	Employment: History	First job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason
B1WYOTHRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason
B1WYSCH1ST	Employment: History	First job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school
B1WYSCHRCNT	Employment: History	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school
B1YRSAL12RCNT	Employment: History	Most recent job, within 12 months after BA completion: Annualized salary based on month 12
DEGPRBA	Education: Attainment	Prior degree: 4-year bachelor's degree
WTA000	Survey Weights	Base weight
WTA001	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 1
WTA002	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 2
WTA003	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 3
WTA004	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 4
WTA005	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 5
WTA006	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 6
WTA007	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 7
WTA008	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 8
WTA009	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 9
WTA010	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 10
WTA011	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 11
WTA012	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 12
WTA013	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 13

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
WTA014	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 14
WTA015	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 15
WTA016	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 16
WTA017	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 17
WTA018	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 18
WTA019	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 19
WTA020	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 20
WTA021	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 21
WTA022	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 22
WTA023	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 23
WTA024	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 24
WTA025	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 25
WTA026	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 26
WTA027	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 27
WTA028	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 28
WTA029	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 29
WTA030	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 30
WTA031	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 31
WTA032	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 32
WTA033	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 33
WTA034	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 34
WTA035	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 35
WTA036	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 36
WTA037	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 37
WTA038	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 38
WTA039	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 39
WTA040	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 40
WTA041	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 41
WTA042	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 42
WTA043	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 43
WTA044	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 44
WTA045	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 45
WTA046	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 46
WTA047	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 47
WTA048	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 48
WTA049	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 49
WTA050	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 50
WTA051	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 51
WTA052	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 52
WTA053	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 53
WTA054	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 54
WTA055	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 55
WTA056	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 56
WTA057	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 57
WTA058	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 58
WTA059	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 59
WTA060	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 60
WTA061	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 61
WTA062	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 62
WTA063	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 63
WTA064	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 64
WTA065	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 65
WTA066	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 66
WTA067	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 67

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
WTA068	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 68
WTA069	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 69
WTA070	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 70
WTA071	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 71
WTA072	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 72
WTA073	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 73
WTA074	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 74
WTA075	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 75
WTA076	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 76
WTA077	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 77
WTA078	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 78
WTA079	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 79
WTA080	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 80
WTA081	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 81
WTA082	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 82
WTA083	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 83
WTA084	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 84
WTA085	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 85
WTA086	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 86
WTA087	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 87
WTA088	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 88
WTA089	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 89
WTA090	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 90
WTA091	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 91
WTA092	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 92
WTA093	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 93
WTA094	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 94
WTA095	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 95
WTA096	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 96
WTA097	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 97
WTA098	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 98
WTA099	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 99
WTA100	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 100
WTA101	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 101
WTA102	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 102
WTA103	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 103
WTA104	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 104
WTA105	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 105
WTA106	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 106
WTA107	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 107
WTA108	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 108
WTA109	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 109
WTA110	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 110
WTA111	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 111
WTA112	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 112
WTA113	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 113
WTA114	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 114
WTA115	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 115
WTA116	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 116
WTA117	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 117
WTA118	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 118
WTA119	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 119
WTA120	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 120

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
WTA121	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 121
WTA122	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 122
WTA123	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 123
WTA124	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 124
WTA125	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 125
WTA126	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 126
WTA127	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 127
WTA128	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 128
WTA129	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 129
WTA130	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 130
WTA131	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 131
WTA132	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 132
WTA133	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 133
WTA134	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 134
WTA135	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 135
WTA136	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 136
WTA137	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 137
WTA138	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 138
WTA139	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 139
WTA140	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 140
WTA141	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 141
WTA142	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 142
WTA143	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 143
WTA144	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 144
WTA145	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 145
WTA146	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 146
WTA147	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 147
WTA148	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 148
WTA149	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 149
WTA150	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 150
WTA151	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 151
WTA152	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 152
WTA153	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 153
WTA154	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 154
WTA155	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 155
WTA156	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 156
WTA157	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 157
WTA158	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 158
WTA159	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 159
WTA160	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 160
WTA161	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 161
WTA162	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 162
WTA163	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 163
WTA164	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 164
WTA165	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 165
WTA166	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 166
WTA167	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 167
WTA168	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 168
WTA169	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 169
WTA170	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 170
WTA171	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 171
WTA172	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 172
WTA173	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 173
WTA174	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 174

See notes at end of table.

Table H-1. Analysis variables: 2017—Continued

Variable name	Subject	Variable label
WTA175	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 175
WTA176	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 176
WTA177	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 177
WTA178	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 178
WTA179	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 179
WTA180	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 180
WTA181	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 181
WTA182	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 182
WTA183	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 183
WTA184	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 184
WTA185	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 185
WTA186	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 186
WTA187	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 187
WTA188	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 188
WTA189	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 189
WTA190	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 190
WTA191	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 191
WTA192	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 192
WTA193	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 193
WTA194	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 194
WTA195	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 195
WTA196	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 196
WTA197	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 197
WTA198	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 198
WTA199	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 199
WTA200	Survey Weights	BB:17 Cross-sectional Bootstrap replicate weight 200

NOTE: This table includes variables and weights created for B&B:16/17 only. Variables derived for the base-year, NPSAS:16, are not listed in the table but are available on PowerStats and in the restricted-use data files. To distinguish between base-year and first follow-up derived variables in PowerStats or the restricted-use data files, all B&B:16/17 derived variables begin with “B1”. The exception to this is DEGPRBA, which was originally a NPSAS:16 derived variable that was re-derived as part of the B&B:16/17 study. PreK = prekindergarten.
CIP = Classification of Instructional Programs. ESL = English as a Second Language. TEACH = Teacher Education Assistance for College and Higher Education. NPSAS = National Postsecondary Student Aid Study. GMAT = Graduate Management Admission Test. GPA = Grade point average. PLUS = Parent Loan for Undergraduate Students. GRE = Graduate Record Examination. IPEDS = Integrated Postsecondary Education Data Systems. LSAT = Law School Admission Test. MCAT = Medical College Admission Test. PSE = postsecondary education. STEM = Science, Technology, Engineering and Mathematics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Appendix I. Nonresponse Bias Analysis

List of Tables

TABLE PAGE

I-1. Student-level nonresponse bias analysis for selected variables for students in all institutions: 2017 ..... I-3

I-2. Student-level nonresponse bias analysis for selected variables for students in public institutions: 2017 ..... I-8

I-3. Student-level nonresponse bias analysis for selected variables for students in private nonprofit institutions: 2017 ..... I-13

I-4. Student-level nonresponse bias analysis for selected variables for students in private for-profit institutions: 2017 ..... I-18

I-5. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in all institutions: 2017 ..... I-23

I-6. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in public institutions: 2017 ..... I-26

I-7. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private nonprofit institutions: 2017 ..... I-29

I-8. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private for-profit institutions: 2017 ..... I-32

I-9. Summary of item nonresponse bias analysis before and after imputation for all students, by control of institution: 2017 ..... I-35

Table I-1. Student-level nonresponse bias analysis for selected variables for students in all institutions: 2017

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Control of institution						(Effect size = 0.02)				(Effect size = #)	
Public	7,760	3,120	63.24	62.92	63.99	-0.31	-0.50	63.24	63.24	#	#
Private nonprofit	5,920	1,980	30.41	30.99	29.03	0.58	1.90	30.41	30.41	#	#
Private for-profit	5,820	1,920	6.35	6.09	6.98	-0.26	-4.15	6.35	6.35	#	#
Region of institution attended[5]						(Effect size = 0.04)				(Effect size = #)	
New England	980	390	6.51	6.34	6.92	-0.17	-2.62	6.51	6.51	#	#
Mideast	3,300	1,360	17.75	17.33	18.78	-0.43	-2.40	17.75	17.75	#	#
Great Lakes	3,010	1,050	16.06	16.14	15.87	0.08	0.50	16.06	16.06	#	#
Plains	1,550	510	7.63	8.03	6.69	0.39*	5.16	7.63	7.63	#	#
Southeast	4,620	1,610	22.61	22.71	22.36	0.10	0.45	22.61	22.62	0.01	0.05
Southwest	2,240	770	10.30	10.39	10.07	0.09	0.90	10.30	10.29	#	-0.01
Rocky Mountains	1,050	240	4.15	4.64	2.97	0.49*	11.85	4.15	4.15	#	#
Far West	2,570	1,020	14.21	13.61	15.67	-0.61*	-4.26	14.21	14.21	#	#
Outlying areas	170	70	0.78	0.82	0.68	0.04	5.35	0.78	0.77	-0.01	-1.45
Institution total enrollment[6]						(Effect size = 0.01)				(Effect size = #)	
1–2,907	5,110	1,570	11.40	11.73	10.59	0.34	2.95	11.40	11.40	#	-0.01
2,908–10,133	4,880	1,700	21.27	21.33	21.12	0.06	0.28	21.27	21.27	#	#
10,134–27,396	4,720	1,920	31.05	30.73	31.84	-0.33	-1.05	31.05	31.05	#	#
27,397 or more	4,780	1,830	36.28	36.21	36.45	-0.07	-0.19	36.28	36.28	#	#
Pell Grant status						(Effect size = 0.06)				(Effect size = 0.01)	
Received	7,030	1,720	30.16	32.77	23.66	2.68*	8.87	30.16	29.92	-0.25	-0.82
Did not receive	11,960	4,950	69.84	67.23	76.34	-2.68*	-3.83	69.84	70.08	0.25*	0.35
Total Pell Grant amount received[7]						(Effect size = 0.06)				(Effect size = 0.01)	
None	11,960	4,950	69.84	67.23	76.34	-2.68*	-3.83	69.84	70.08	0.25*	0.35
$1–$2,888	2,650	640	10.40	11.36	8.01	0.98*	9.46	10.40	10.31	-0.08	-0.81
$2,889–$5,774	2,730	660	12.13	13.22	9.40	1.12*	9.24	12.13	12.03	-0.10	-0.82
$5,775 or more	1,650	410	7.64	8.20	6.25	0.57*	7.49	7.64	7.58	-0.06	-0.81

See notes at end of table.

Table I-1. Student-level nonresponse bias analysis for selected variables for students in all institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Direct Loan status						(Effect size = 0.08)				(Effect size = #)	
Received	9,430	2,480	43.23	47.18	33.73	3.95*	9.14	43.23	43.23	#	#
Did not receive	10,060	4,540	56.77	52.82	66.27	-3.95*	-6.96	56.77	56.77	#	#
Total Direct Loan amount received[8]						(Effect size = 0.08)				(Effect size = #)	
None	10,060	4,540	56.77	52.82	66.27	-3.95*	-6.96	56.77	56.77	#	#
$1–$4,185	2,360	620	10.26	11.22	7.95	0.96*	9.35	10.26	10.26	#	-0.01
$4,186–$7,500	4,580	1,150	23.18	25.46	17.72	2.27*	9.81	23.18	23.18	#	#
$7,501–$8,307	190	40	0.50	0.52	0.43	0.03	5.52	0.50	0.50	#	#
$8,308 or more	2,310	670	9.29	9.98	7.63	0.69*	7.46	9.29	9.29	#	#
Total PLUS Loan amount received[8]						(Effect size = 0.02)				(Effect size = #)	
None	17,880	6,370	94.27	93.82	95.39	-0.46*	-0.49	94.27	94.32	0.05*	0.05
$1–$7,039	280	70	1.28	1.40	0.99	0.12*	9.30	1.28	1.27	-0.01	-0.81
$7,040–$12,751	290	70	1.41	1.52	1.12	0.12	8.34	1.41	1.40	-0.01	-0.81
$12,752–$20,268	280	70	1.50	1.58	1.32	0.08	5.09	1.50	1.47	-0.03	-2.22
$20,269 or more	270	90	1.54	1.68	1.18	0.15*	9.67	1.54	1.55	0.01	0.56
Federal aid status						(Effect size = 0.10)				(Effect size = #)	
Received	12,720	3,350	55.53	60.45	43.72	4.91*	8.85	55.53	55.53	#	#
Did not receive	5,890	3,030	37.78	33.85	47.21	-3.93*	-10.39	37.78	37.78	#	#
Unknown	880	650	6.69	5.70	9.07	-0.99*	-14.78	6.69	6.69	#	#
Institution aid status						(Effect size = 0.06)				(Effect size = #)	
Received	8,660	2,400	38.09	40.96	31.17	2.88*	7.55	38.09	38.09	#	#
Did not receive	8,910	3,680	50.55	48.30	55.96	-2.25*	-4.45	50.55	50.55	#	#
Unknown	1,920	940	11.36	10.73	12.87	-0.63*	-5.52	11.36	11.36	#	#
State aid status						(Effect size = 0.05)				(Effect size = #)	
Received	3,520	870	18.70	20.50	14.38	1.80*	9.62	18.70	18.70	#	#
Did not receive	13,940	5,190	69.94	68.69	72.95	-1.25*	-1.79	69.94	69.94	#	#
Unknown	2,020	960	11.35	10.80	12.67	-0.55	-4.83	11.35	11.35	#	#

See notes at end of table.

Table I-1. Student-level nonresponse bias analysis for selected variables for students in all institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Any aid status						(Effect size = 0.19)				(Effect size = 0.03)	
Yes	16,240	4,580	74.06	79.32	61.41	5.26*	7.11	74.06	75.05	0.99*	1.34
No	1,890	390	9.66	11.32	5.69	1.65*	17.12	9.66	9.88	0.21	2.20
Unknown	1,360	2,060	16.28	9.36	32.91	-6.92*	-42.51	16.28	15.07	-1.20*	-7.39
Social Security number available						(Effect size = 0.11)				(Effect size = 0.06)	
Available	19,200	6,440	95.27	97.62	89.61	2.35*	2.47	95.27	96.53	1.27*	1.33
Not available	290	580	4.73	2.38	10.39	-2.35*	-49.74	4.73	3.47	-1.27*	-26.78
Veteran status						(Effect size = 0.02)				(Effect size = #)	
Yes	1,620	590	4.03	3.65	4.93	-0.37*	-9.31	4.03	4.03	#	#
No	17,870	6,430	95.97	96.35	95.07	0.37*	0.39	95.97	95.97	#	#
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	12,000	3,840	62.46	64.16	58.36	1.70*	2.73	62.46	63.91	1.45*	2.32
Black, non-Hispanic	2,490	720	9.65	10.16	8.42	0.51*	5.27	9.65	9.65	#	#
Hispanic	2,750	900	12.21	12.99	10.31	0.79*	6.46	12.21	12.21	#	#
Asian, non-Hispanic	1,260	620	8.24	7.25	10.61	-0.98*	-11.95	8.24	8.24	#	#
American Indian or Alaskan Native, non-Hispanic	100	40	0.53	0.53	0.52	#	0.58	0.53	0.53	#	#
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	680	150	3.11	3.55	2.07	0.43*	13.91	3.11	3.11	#	#
Unknown	140	750	3.55	1.06	9.54	-2.49*	-70.09	3.55	2.10	-1.45*	-40.83
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	7,740	3,220	42.51	40.68	46.90	-1.83*	-4.30	42.51	41.45	-1.06*	-2.50
Female	11,750	3,790	57.40	59.32	52.80	1.91*	3.33	57.40	58.55	1.15*	2.00
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

Table I-1. Student-level nonresponse bias analysis for selected variables for students in all institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Percent of loans that is still owed[8]						(Effect size = 0.10)				(Effect size = 0.01)	
None	4,580	1,780	22.28	21.48	24.20	-0.80*	-3.59	22.28	22.34	0.06	0.27
1–96 percent	3,230	640	14.66	17.13	8.75	2.46*	16.78	14.66	14.66	#	#
97–103 percent	3,330	800	12.50	14.00	8.87	1.51*	12.08	12.50	12.49	#	-0.01
104–111 percent	3,180	1,150	14.85	15.25	13.89	0.40	2.70	14.85	14.99	0.14	0.95
112 percent or more	5,170	2,660	35.71	32.14	44.29	-3.57*	-10.00	35.71	35.51	-0.20	-0.56
Cumulative amount borrowed from federal loans[8]						(Effect size = 0.06)				(Effect size = #)	
None	17,370	6,340	89.83	89.28	91.14	-0.55*	-0.61	89.83	89.83	#	#
$1–$10,573	530	170	2.65	2.90	2.06	0.25*	9.25	2.65	2.65	#	#
$10,574–$20,500	510	120	2.35	2.83	1.19	0.48*	20.57	2.35	2.35	#	#
$20,501–$28,440	660	120	2.67	3.15	1.50	0.49*	18.25	2.67	2.67	#	#
$28,441 or more	420	280	2.50	1.83	4.11	-0.67*	-26.71	2.50	2.50	#	#
Degree major						(Effect size = ‡)				(Effect size = ‡)	
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	2,150	770	10.63	10.39	11.24	-0.25	-2.34	10.63	10.52	-0.11	-1.05
Social/behavioral sciences	1,960	560	13.38	14.21	11.31	0.85*	6.37	13.38	13.24	-0.14	-1.05
Life sciences	1,970	590	11.72	12.60	9.51	0.91*	7.76	11.72	11.60	-0.12	-1.02
Physical sciences/math	440	120	2.57	2.70	2.26	0.13	5.06	2.57	2.54	-0.03	-1.19
Computer/information science	1,490	470	3.54	3.50	3.61	-0.03	-0.91	3.54	3.50	-0.04	-1.05
Engineering	1,150	450	7.02	7.01	7.03	-0.01	-0.07	7.02	6.94	-0.07	-1.05
Education	1,980	500	5.24	5.51	4.57	0.27*	5.24	5.24	5.19	-0.06	-1.05
Business/management	2,340	1,050	19.03	17.67	22.46	-1.41*	-7.39	19.03	18.83	-0.20	-1.05
Health	2,910	970	12.14	12.23	11.91	0.09	0.78	12.14	13.07	0.93*	7.62
Vocational/technical	120	30	0.72	0.79	0.53	0.08	10.93	0.72	0.71	-0.01	-1.05
Other technical/professional	2,370	910	13.14	12.94	13.67	-0.21	-1.63	13.14	13.02	-0.12	-0.95
Unknown	100	130	0.84	0.44	1.86	-0.42*	-49.39	0.84	0.83	-0.01	-1.05

See notes at end of table.

Table I-1. Student-level nonresponse bias analysis for selected variables for students in all institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Age as of Dec 31, 2015						(Effect size = ‡)				(Effect size = ‡)	
15–23	10,330	3,490	64.28	65.90	60.37	1.62*	2.53	64.28	64.61	0.34	0.53
24–29	4,140	1,570	19.42	18.67	21.22	-0.75*	-3.86	19.42	19.42	#	#
30 or older	5,020	1,890	15.97	15.43	17.25	-0.53*	-3.34	15.97	15.97	#	#
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Type of federal loan repayment plan						(Effect size = 0.03)				(Effect size = 0.01)	
Multiple repayment plans	240	70	2.15	2.35	1.58	0.23	10.53	2.15	2.15	-0.01	-0.31
Other	5,540	1,790	44.29	43.85	45.59	-0.51	-1.15	44.29	44.15	-0.14	-0.31
Income driven repayment	430	100	2.86	3.05	2.30	0.22	7.68	2.86	2.85	-0.01	-0.31
Graduated repayment	430	80	2.38	2.67	1.52	0.34*	14.19	2.38	2.37	-0.01	-0.31
Standard repayment	350	110	1.65	1.55	1.94	-0.11	-6.86	1.65	1.64	-0.01	-0.43
Not repaying	5,700	1,740	34.15	33.91	34.86	-0.28	-0.82	34.15	33.83	-0.32	-0.94
Unknown	1,620	480	12.52	12.63	12.22	0.12	0.96	12.52	13.01	0.49	3.88

Rounds to zero.
‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] 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.
[2] Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean.
[3] Base weight, adjusted for nonresponse.
[4] Bias in the sample mean is estimated as the difference between the weighted respondent mean (using the base weight adjusted for nonresponse) and weighted full-sample mean (using the base weight).
[5] 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, 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.
[6] Categories were defined by quartiles computed at the institution level.
[7] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[8] 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. full sample) over full-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards. Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students. Sample sizes rounded to the nearest 10.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-2. Student-level nonresponse bias analysis for selected variables for students in public institutions: 2017

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Region of institution attended[5]						(Effect size = ‡)				(Effect size = ‡)	
New England	260	110	3.85	3.76	4.06	-0.09	-2.34	3.85	3.80	-0.04	-1.14
Mideast	1,150	580	14.63	14.17	15.71	-0.46	-3.11	14.63	14.85	0.22	1.53
Great Lakes	1,340	540	16.76	16.69	16.94	-0.08	-0.46	16.76	16.58	-0.18	-1.06
Plains	550	200	7.19	7.60	6.20	0.42	5.78	7.19	7.20	0.01	0.20
Southeast	2,170	840	25.24	25.23	25.25	-0.01	-0.03	25.24	25.09	-0.15	-0.58
Southwest	830	330	11.89	11.96	11.73	0.07	0.60	11.89	11.75	-0.14	-1.21
Rocky Mountains	440	90	3.89	4.30	2.93	0.41*	10.49	3.89	3.84	-0.05	-1.29
Far West	1,010	430	16.16	15.88	16.82	-0.28	-1.72	16.16	16.50	0.34	2.09
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Institution total enrollment[6]						(Effect size = 0.01)				(Effect size = 0.02)	
1–11,413	1,990	740	20.07	20.37	19.36	0.30	1.50	20.07	20.63	0.56	2.77
11,414–21,960	1,900	820	23.75	23.33	24.72	-0.41	-1.74	23.75	23.22	-0.52	-2.21
21,961–35,263	1,930	800	27.34	27.53	26.89	0.19	0.69	27.34	27.26	-0.08	-0.30
35,264 or more	1,930	760	28.84	28.76	29.02	-0.08	-0.27	28.84	28.89	0.05	0.17
Pell Grant status						(Effect size = 0.07)				(Effect size = #)	
Received	2,670	700	30.63	33.68	23.21	3.11*	10.16	30.63	30.69	0.06	0.21
Did not receive	4,920	2,290	69.37	66.32	76.79	-3.11*	-4.49	69.37	69.31	-0.06	-0.09
Total Pell Grant amount received[7]						(Effect size = 0.07)				(Effect size = 0.01)	
None	4,920	2,290	69.37	66.32	76.79	-3.11*	-4.49	69.37	69.31	-0.06	-0.09
$1–$2,887	990	250	10.17	11.11	7.87	0.96*	9.47	10.17	10.02	-0.15	-1.45
$2,888–$5,774	1,060	290	12.86	14.30	9.33	1.48*	11.50	12.86	13.00	0.15	1.14
$5,775 or more	620	160	7.61	8.26	6.00	0.67*	8.83	7.61	7.67	0.06	0.84
Direct Loan status						(Effect size = 0.08)				(Effect size = 0.01)	
Received	3,470	960	40.63	44.76	30.87	4.13*	10.17	40.63	40.89	0.25	0.63
Did not receive	4,280	2,160	59.37	55.24	69.13	-4.13*	-6.96	59.37	59.11	-0.25	-0.43

See notes at end of table.

Table I-2. Student-level nonresponse bias analysis for selected variables for students in public institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Total Direct Loan amount received[8]						(Effect size = 0.08)				(Effect size = 0.01)	
None	4,280	2,160	59.37	55.24	69.13	-4.13*	-6.96	59.37	59.11	-0.25	-0.43
$1–$4,000	940	250	10.63	11.71	8.10	1.07*	10.08	10.63	10.62	-0.02	-0.19
$4,001–$6,250	840	220	9.22	10.06	7.22	0.85*	9.17	9.22	9.30	0.08	0.87
$6,251–$7,500	930	260	12.03	13.25	9.13	1.22*	10.18	12.03	11.98	-0.04	-0.36
$7,501 or more	770	220	8.75	9.74	6.42	0.99*	11.29	8.75	8.99	0.24	2.72
Total PLUS Loan amount received[8]						(Effect size = ‡)				(Effect size = ‡)	
None	7,240	2,870	95.17	94.75	96.21	-0.44*	-0.46	95.17	95.21	0.03*	0.04
$1–$5,940	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$5,941–$11,321	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$11,322–$16,800	90	30	1.16	1.22	0.99	0.07	5.95	1.16	1.13	-0.03	-2.34
$16,801 or more	80	40	1.41	1.47	1.28	0.06	4.00	1.41	1.34	-0.08	-5.33
Federal aid status						(Effect size = 0.11)				(Effect size = 0.01)	
Received	4,690	1,290	53.05	58.42	40.37	5.37*	10.12	53.05	53.49	0.44	0.82
Did not receive	2,650	1,520	39.79	35.27	50.48	-4.52*	-11.37	39.79	39.37	-0.43	-1.07
Unknown	420	310	7.15	6.31	9.15	-0.84*	-11.81	7.15	7.14	-0.01	-0.15
Institution aid status						(Effect size = 0.06)				(Effect size = 0.01)	
Received	2,270	630	27.79	30.25	21.96	2.46*	8.87	27.79	28.00	0.21	0.76
Did not receive	4,650	2,060	59.13	56.89	64.40	-2.23*	-3.78	59.13	58.84	-0.29	-0.49
Unknown	850	420	13.09	12.85	13.64	-0.23	-1.78	13.09	13.16	0.08	0.60
State aid status						(Effect size = 0.05)				(Effect size = #)	
Received	1,840	510	20.99	23.08	16.04	2.09*	9.98	20.99	21.12	0.13	0.64
Did not receive	5,130	2,210	66.76	64.97	70.98	-1.79*	-2.68	66.76	66.66	-0.10	-0.15
Unknown	790	400	12.25	11.95	12.98	-0.31	-2.51	12.25	12.22	-0.04	-0.30
Any aid status						(Effect size = 0.20)				(Effect size = 0.05)	
Yes	6,000	1,730	70.04	75.95	56.07	5.91*	8.44	70.04	71.63	1.59*	2.27
No	1,030	210	11.35	13.28	6.79	1.93*	17.01	11.35	11.76	0.41	3.61
Unknown	740	1,180	18.61	10.77	37.15	-7.84*	-42.15	18.61	16.61	-2.00*	-10.75

See notes at end of table.

Table I-2. Student-level nonresponse bias analysis for selected variables for students in public institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Social Security number available						(Effect size = 0.11)				(Effect size = 0.06)	
Available	7,640	2,800	95.25	97.57	89.76	2.32*	2.44	95.25	96.59	1.34*	1.41
Not available	120	320	4.75	2.43	10.24	-2.32*	-48.89	4.75	3.41	-1.34*	-28.22
Veteran status						(Effect size = 0.01)				(Effect size = #)	
Yes	560	180	2.89	2.69	3.36	-0.20	-6.92	2.89	2.96	0.07	2.41
No	7,200	2,940	97.11	97.31	96.64	0.20	0.21	97.11	97.04	-0.07	-0.07
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	5,180	1,870	62.69	64.15	59.24	1.46*	2.33	62.69	64.34	1.65*	2.63
Black, non-Hispanic	700	230	8.65	9.11	7.54	0.47	5.40	8.65	8.56	-0.09	-1.02
Hispanic	1,000	320	12.50	13.43	10.31	0.93*	7.43	12.50	12.58	0.08	0.61
Asian, non-Hispanic	500	290	8.73	7.91	10.65	-0.82*	-9.35	8.73	9.05	0.33	3.75
American Indian or Alaskan Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	260	70	3.18	3.61	2.15	0.43*	13.65	3.18	3.19	0.01	0.37
Unknown	60	310	3.44	0.94	9.35	-2.50*	-72.73	3.44	1.52	-1.92*	-55.94
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	3,160	1,440	43.06	41.52	46.72	-1.55*	-3.59	43.06	42.00	-1.06*	-2.47
Female	4,600	1,660	56.81	58.48	52.85	1.67*	2.95	56.81	58.00	1.19*	2.09
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of loans that is still owed[8]						(Effect size = 0.08)				(Effect size = 0.02)	
None	610	290	12.90	11.02	18.33	-2.17*	-16.84	12.90	12.59	-0.31	-2.38
1–95 percent	1,090	420	21.70	20.52	25.11	-1.37*	-6.29	21.70	21.95	0.25	1.14
96–102 percent	1,320	290	23.58	26.01	16.54	2.82*	11.94	23.58	23.42	-0.16	-0.68
103–111 percent	1,130	320	20.36	21.24	17.81	1.02*	5.01	20.36	20.00	-0.36	-1.77
112 percent or more	1,070	390	21.46	21.20	22.21	-0.30	-1.39	21.46	22.04	0.58	2.71

See notes at end of table.

Table I-2. Student-level nonresponse bias analysis for selected variables for students in public institutions: 2017—Continued

Variable	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Cumulative amount borrowed from federal loans[8]						(Effect size = ‡)				(Effect size = ‡)	
None	6,920	2,850	90.37	89.75	91.81	-0.61*	-0.68	90.37	90.38	0.01	0.01
$1–$11,069	210	60	2.39	2.63	1.82	0.24*	10.12	2.39	2.40	0.01	0.47
$11,070–$20,500	420	70	4.43	5.47	1.96	1.04*	23.56	4.43	4.56	0.13	2.92
$20,501–$27,557	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$27,558 or more	170	110	2.30	1.72	3.67	-0.58*	-25.32	2.30	2.33	0.03	1.32
Degree major						(Effect size = ‡)				(Effect size = ‡)	
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	640	270	9.40	9.13	10.05	-0.27	-2.88	9.40	9.22	-0.18	-1.86
Social/behavioral sciences	950	300	13.62	14.45	11.58	0.85*	6.25	13.62	13.51	-0.11	-0.78
Life sciences	1,020	330	12.60	13.44	10.53	0.86*	6.86	12.60	12.50	-0.10	-0.79
Physical sciences/math	180	70	2.51	2.49	2.58	-0.03	-1.10	2.51	2.39	-0.12	-4.94
Computer/information science	360	130	3.30	3.26	3.40	-0.04	-1.18	3.30	3.23	-0.07	-2.07
Engineering	580	250	8.39	8.33	8.53	-0.06	-0.72	8.39	8.10	-0.29	-3.45
Education	980	270	5.63	5.97	4.79	0.35	6.21	5.63	5.68	0.05	0.86
Business/Management	870	420	17.54	16.16	20.96	-1.43*	-8.13	17.54	17.16	-0.38	-2.18
Health	850	320	10.68	10.75	10.53	0.06	0.60	10.68	11.83	1.15*	10.73
Vocational/technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other technical/professional	1,020	410	14.47	14.62	14.09	0.16	1.09	14.47	14.65	0.19	1.29
Unknown	70	100	1.03	0.45	2.46	-0.60*	-58.21	1.03	0.86	-0.16	-15.79
Age as of Dec 31, 2015						(Effect size = ‡)				(Effect size = ‡)	
15–23	4,820	1,890	66.66	67.89	63.74	1.23*	1.85	66.66	66.57	-0.08	-0.13
24–29	1,700	730	21.02	20.49	22.29	-0.54	-2.56	21.02	21.31	0.28	1.34
30 or older	1,240	460	11.88	11.62	12.49	-0.26	-2.18	11.88	12.12	0.24	2.02
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

Table I-2. Student-level nonresponse bias analysis for selected variables for students in public institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Type of federal loan repayment plan						(Effect size = ‡)				(Effect size = ‡)	
Multiple repayment plans	100	30	2.04	2.21	1.55	0.20	9.56	2.04	2.00	-0.05	-2.20
Other	2,210	760	44.91	44.66	45.66	-0.30	-0.66	44.91	45.15	0.23	0.52
Income driven repayment	180	40	2.91	3.20	2.09	0.33*	11.27	2.91	2.94	0.03	0.95
Graduated repayment	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Standard repayment	100	40	1.54	1.46	1.78	-0.09	-6.02	1.54	1.58	0.04	2.46
Not repaying	1,760	600	33.20	32.84	34.25	-0.42	-1.27	33.20	32.63	-0.57	-1.72
Unknown	720	220	12.88	12.83	13.03	-0.06	-0.45	12.88	13.22	0.33	2.60

Rounds to zero.
‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] 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.
[2] Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean.
[3] Base weight, adjusted for nonresponse.
[4] Bias in the sample mean is estimated as the difference between the weighted respondent mean (using the base weight adjusted for nonresponse) and weighted full-sample mean (using the base weight).
[5] 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, 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.
[6] Categories were defined by quartiles computed at the institution level.
[7] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[8] 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. full sample) over full-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards. Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students. Sample sizes rounded to the nearest 10.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-3. Student-level nonresponse bias analysis for selected variables for students in private nonprofit institutions: 2017

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Region of institution attended[5]						(Effect size = ‡)				(Effect size = ‡)	
New England	700	260	13.35	12.81	14.73	-0.54	-4.02	13.35	13.48	0.13	0.99
Mideast	1,470	580	26.27	25.56	28.09	-0.71	-2.70	26.27	25.86	-0.41	-1.55
Great Lakes	1,010	300	15.24	15.79	13.83	0.55	3.61	15.24	15.79	0.55	3.59
Plains	650	170	8.49	8.70	7.93	0.22	2.57	8.49	8.20	-0.28	-3.34
Southeast	1,050	320	17.51	17.91	16.49	0.40	2.27	17.51	17.91	0.40	2.29
Southwest	270	90	4.10	4.28	3.63	0.18	4.43	4.10	4.21	0.11	2.61
Rocky Mountains	270	50	4.67	5.39	2.82	0.72	15.43	4.67	4.80	0.13	2.73
Far West	430	170	8.80	7.84	11.27	-0.96	-10.95	8.80	8.13	-0.67	-7.66
Outlying areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Institution total enrollment[6]						(Effect size = 0.03)				(Effect size = 0.02)	
1–2,395	1,530	450	22.03	22.55	20.71	0.52	2.34	22.03	21.68	-0.35	-1.60
2,396–4,774	1,500	470	23.62	24.10	22.37	0.49	2.06	23.62	23.54	-0.07	-0.30
4,775–11,971	1,440	540	25.78	24.71	28.52	-1.07*	-4.14	25.78	25.21	-0.56	-2.19
11,972 or more	1,440	520	28.57	28.64	28.40	0.07	0.23	28.57	29.56	0.99	3.46
Pell Grant status						(Effect size = 0.05)				(Effect size = 0.01)	
Received	1,830	420	28.25	30.40	22.36	2.25*	7.98	28.25	27.82	-0.44	-1.54
Did not receive	3,950	1,410	71.75	69.60	77.64	-2.25*	-3.14	71.75	72.18	0.44*	0.61
Total Pell Grant amount received[7]						(Effect size = 0.05)				(Effect size = 0.02)	
None	3,950	1,410	71.75	69.60	77.64	-2.25*	-3.14	71.75	72.18	0.44*	0.61
$1–$2,888	600	130	9.33	10.47	6.21	1.20*	12.81	9.33	9.62	0.28	3.03
$2,889–$5,774	750	170	11.35	11.94	9.72	0.62	5.49	11.35	10.87	-0.48	-4.20
$5,775 or more	480	130	7.57	7.99	6.44	0.43	5.74	7.57	7.33	-0.24	-3.21
Direct Loan status						(Effect size = 0.07)				(Effect size = 0.01)	
Received	3,200	840	49.05	52.64	39.83	3.59*	7.33	49.05	48.62	-0.43	-0.87
Did not receive	2,720	1,140	50.95	47.36	60.17	-3.59*	-7.05	50.95	51.38	0.43	0.84

See notes at end of table.

Table I-3. Student-level nonresponse bias analysis for selected variables for students in private nonprofit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Total Direct Loan amount received[8]						(Effect size = 0.08)				(Effect size = 0.03)	
None	2,720	1,140	50.95	47.36	60.17	-3.59*	-7.05	50.95	51.38	0.43	0.84
$1–$5,500	930	210	13.70	15.39	9.37	1.69*	12.33	13.70	14.24	0.53	3.90
$5,501–$7,500	1,630	400	24.61	26.53	19.70	1.92*	7.78	24.61	24.37	-0.24	-0.98
$7,501 or more	640	230	10.73	10.72	10.77	-0.01	-0.11	10.73	10.01	-0.72*	-6.71
Total PLUS Loan amount received[8]						(Effect size = ‡)				(Effect size = ‡)	
None	5,250	1,690	91.60	91.18	92.76	-0.44	-0.48	91.60	91.73	0.13*	0.14
$1–$9,000	130	40	1.93	1.84	2.17	-0.09	-4.76	1.93	1.71	-0.22	-11.34
$9,001–$15,100	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$15,101–$24,196	130	40	2.15	2.18	2.06	0.03	1.63	2.15	2.12	-0.03	-1.37
$24,197 or more	130	40	2.24	2.45	1.65	0.22	10.03	2.24	2.25	0.02	0.70
Federal aid status						(Effect size = 0.10)				(Effect size = 0.01)	
Received	3,930	1,000	58.76	63.53	46.53	4.77*	8.11	58.76	58.74	-0.03	-0.05
Did not receive	1,780	820	35.40	32.11	43.86	-3.30*	-9.31	35.40	35.70	0.29	0.83
Unknown	200	160	5.83	4.36	9.61	-1.47*	-25.22	5.83	5.57	-0.27	-4.56
Institution aid status						(Effect size = 0.08)				(Effect size = 0.01)	
Received	3,890	1,050	58.97	62.77	49.23	3.80*	6.44	58.97	59.21	0.23	0.39
Did not receive	1,670	730	33.06	30.69	39.15	-2.37*	-7.18	33.06	33.15	0.09	0.27
Unknown	360	210	7.96	6.54	11.61	-1.42*	-17.85	7.96	7.64	-0.32	-4.02
State aid status						(Effect size = 0.05)				(Effect size = #)	
Received	1,220	270	16.82	18.47	12.61	1.64*	9.76	16.82	16.79	-0.04	-0.23
Did not receive	4,250	1,490	73.61	73.00	75.18	-0.61	-0.83	73.61	73.70	0.09	0.12
Unknown	450	230	9.57	8.54	12.21	-1.03	-10.77	9.57	9.52	-0.05	-0.54
Any aid status						(Effect size = 0.18)				(Effect size = 0.02)	
Yes	5,200	1,440	81.05	85.56	69.47	4.51*	5.57	81.05	81.66	0.62	0.76
No	440	70	6.82	8.05	3.68	1.23*	17.98	6.82	6.66	-0.16	-2.33
Unknown	290	470	12.13	6.39	26.86	-5.74*	-47.33	12.13	11.67	-0.46	-3.77

See notes at end of table.

Table I-3. Student-level nonresponse bias analysis for selected variables for students in private nonprofit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Social Security number available						(Effect size = 0.13)				(Effect size = 0.07)	
Available	5,830	1,820	95.32	97.97	88.53	2.65*	2.78	95.32	96.79	1.47*	1.54
Not available	90	160	4.68	2.03	11.47	-2.65*	-56.62	4.68	3.21	-1.47*	-31.44
Veteran status						(Effect size = 0.01)				(Effect size = 0.02)	
Yes	390	130	3.35	3.18	3.81	-0.18	-5.25	3.35	3.64	0.28	8.39
No	5,530	1,850	96.65	96.82	96.19	0.18	0.18	96.65	96.36	-0.28	-0.29
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	4,100	1,230	65.37	67.29	60.44	1.92*	2.94	65.37	66.41	1.04	1.60
Black, non-Hispanic	520	180	8.96	9.31	8.06	0.35	3.90	8.96	8.78	-0.18	-2.01
Hispanic	630	200	10.88	11.83	8.43	0.95*	8.77	10.88	11.06	0.18	1.69
Asian, non-Hispanic	360	180	7.73	6.28	11.46	-1.45*	-18.80	7.73	6.92	-0.82	-10.56
American Indian or Alaskan Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	220	50	3.10	3.44	2.23	0.34*	10.93	3.10	3.01	-0.10	-3.09
Unknown	50	140	3.37	1.26	8.81	-2.12*	-62.77	3.37	3.21	-0.16	-4.82
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	2,250	930	42.16	39.82	48.15	-2.33*	-5.54	42.16	41.24	-0.92	-2.18
Female	3,660	1,050	57.84	60.18	51.85	2.33*	4.04	57.84	58.76	0.92	1.59
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of loans that is still owed[8]						(Effect size = 0.08)				(Effect size = 0.02)	
None	430	180	12.06	10.60	16.71	-1.71*	-14.20	12.06	11.57	-0.49	-4.05
1–96 percent	890	310	23.57	22.16	28.06	-1.65*	-7.02	23.57	23.83	0.26	1.11
97–102 percent	970	160	20.60	23.08	12.68	2.92*	14.16	20.60	20.91	0.31	1.51
103–113 percent	940	210	21.08	22.25	17.38	1.37*	6.48	21.08	21.23	0.14	0.67
114 percent or more	880	280	22.68	21.90	25.17	-0.92	-4.04	22.68	22.46	-0.23	-0.99

See notes at end of table.

Table I-3. Student-level nonresponse bias analysis for selected variables for students in private nonprofit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Cumulative amount borrowed from federal loans[8]						(Effect size = 0.07)				(Effect size = 0.03)	
None	5,260	1,760	89.64	89.40	90.26	-0.24	-0.27	89.64	89.88	0.24	0.27
$1–$11,082	170	50	2.91	3.17	2.26	0.25	8.73	2.91	2.92	#	0.15
$11,083–$20,500	300	50	3.96	4.86	1.65	0.90*	22.75	3.96	4.12	0.16	3.92
$20,501–$30,750	70	30	1.03	0.95	1.25	-0.09	-8.30	1.03	1.04	#	0.47
$30,751 or more	120	90	2.45	1.62	4.58	-0.83*	-33.79	2.45	2.05	-0.40	-16.44
Degree major						(Effect size = ‡)				(Effect size = ‡)	
Humanities	710	260	13.61	13.35	14.35	-0.28	-2.08	13.61	13.63	0.02	0.14
Social/behavioral sciences	830	230	14.88	15.55	13.05	0.70*	4.72	14.88	14.47	-0.41	-2.78
Life sciences	850	210	11.47	12.42	8.85	1.00*	8.73	11.47	11.22	-0.25	-2.17
Physical sciences/math	260	50	3.21	3.62	2.09	0.43*	13.38	3.21	3.35	0.14	4.34
Computer/information science	190	70	3.03	2.98	3.19	-0.06	-1.92	3.03	3.07	0.03	1.10
Engineering	330	110	4.97	5.09	4.65	0.12	2.45	4.97	5.34	0.37*	7.38
Education	720	170	4.89	5.00	4.61	0.11	2.22	4.89	4.63	-0.27	-5.44
Business/Management	650	280	20.17	18.98	23.44	-1.25*	-6.20	20.17	20.70	0.53	2.62
Health	650	200	12.16	12.35	11.61	0.21	1.72	12.16	12.65	0.49	4.04
Vocational/technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other technical/professional	540	220	10.53	9.75	12.68	-0.82*	-7.80	10.53	9.88	-0.65	-6.19
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Age as of Dec 31, 2015						(Effect size = ‡)				(Effect size = ‡)	
15–23	4,350	1,310	70.20	72.52	64.24	2.32*	3.31	70.20	71.76	1.56*	2.22
24–29	780	310	14.76	13.56	17.85	-1.20*	-8.16	14.76	14.13	-0.63	-4.28
30 or older	790	340	14.84	13.92	17.21	-0.92	-6.21	14.84	14.12	-0.73	-4.91
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

Table I-3. Student-level nonresponse bias analysis for selected variables for students in private nonprofit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Type of federal loan repayment plan						(Effect size = ‡)				(Effect size = ‡)	
Multiple repayment plans	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other	1,870	530	46.05	45.32	48.38	-0.86	-1.87	46.05	45.56	-0.49	-1.07
Income driven repayment	140	30	2.86	2.98	2.47	0.14	5.03	2.86	2.92	0.06	2.17
Graduated repayment	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Standard repayment	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Not repaying	1,300	380	33.40	33.23	33.96	-0.21	-0.62	33.40	33.12	-0.28	-0.84
Unknown	560	140	11.96	12.19	11.22	0.27	2.28	11.96	12.54	0.58	4.86

Rounds to zero.
‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] 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.
[2] Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean.
[3] Base weight, adjusted for nonresponse.
[4] Bias in the sample mean is estimated as the difference between the weighted respondent mean (using the base weight adjusted for nonresponse) and weighted full-sample mean (using the base weight).
[5] 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, 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.
[6] Categories were defined by quartiles computed at the institution level.
[7] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[8] 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. full sample) over full-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards. Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students. Sample sizes rounded to the nearest 10.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-4. Student-level nonresponse bias analysis for selected variables for students in private for-profit institutions: 2017

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Region of institution attended[5]						(Effect size = ‡)				(Effect size = ‡)	
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Mideast	690	210	8.06	8.00	8.19	-0.06	-0.73	8.06	7.79	-0.28	-3.42
Great Lakes	660	210	13.04	12.34	14.51	-0.70	-5.38	13.04	12.19	-0.85	-6.54
Plains	360	140	7.98	8.96	5.94	0.98	12.23	7.98	9.20	1.21	15.21
Southeast	1,400	450	20.81	21.05	20.30	0.24	1.16	20.81	20.52	-0.28	-1.36
Southwest	1,140	360	24.04	25.17	21.68	1.13	4.69	24.04	24.94	0.90	3.75
Rocky Mountains	350	90	4.22	4.35	3.95	0.13	3.08	4.22	4.11	-0.11	-2.60
Far West	1,130	420	20.74	19.47	23.38	-1.26	-6.09	20.74	20.61	-0.13	-0.62
Outlying areas	60	30	0.79	0.52	1.34	-0.27	-33.63	0.79	0.51	-0.27	-34.87
Institution total enrollment[6]						(Effect size = 0.03)				(Effect size = 0.03)	
1–1,384	1,490	450	12.47	11.61	14.26	-0.85	-6.86	12.47	11.51	-0.95	-7.63
1,385–3,082	1,470	460	11.33	11.22	11.57	-0.11	-0.99	11.33	11.39	0.06	0.53
3,083–16,103	1,490	470	14.95	14.97	14.91	0.02	0.12	14.95	14.72	-0.23	-1.53
16,104 or more	1,360	550	61.25	62.20	59.26	0.95	1.55	61.25	62.37	1.12	1.83
Pell Grant status						(Effect size = 0.02)				(Effect size = 0.05)	
Received	2,530	600	34.80	35.66	33.08	0.83	2.40	34.80	32.39	-2.41*	-6.91
Did not receive	3,090	1,250	65.20	64.34	66.92	-0.83	-1.28	65.20	67.61	2.41	3.69
Total Pell Grant amount received[7]						(Effect size = 0.02)				(Effect size = 0.05)	
None	3,090	1,250	65.20	64.34	66.92	-0.83	-1.28	65.20	67.61	2.41	3.69
$1–$2,887	980	240	12.87	12.91	12.80	0.03	0.27	12.87	11.72	-1.15*	-8.91
$2,888–$5,774	1,000	240	13.60	14.14	12.50	0.53	3.90	13.60	12.81	-0.79	-5.80
$5,775 or more	550	120	8.33	8.61	7.78	0.27	3.24	8.33	7.86	-0.47	-5.65
Direct Loan status						(Effect size = 0.06)				(Effect size = 0.01)	
Received	2,760	680	41.20	44.37	34.57	3.17*	7.68	41.20	40.70	-0.50	-1.21
Did not receive	3,060	1,240	58.80	55.63	65.43	-3.17*	-5.38	58.80	59.30	0.50	0.85

See notes at end of table.

Table I-4. Student-level nonresponse bias analysis for selected variables for students in private for-profit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Total Direct Loan amount received[8]						(Effect size = 0.07)				(Effect size = 0.05)	
None	3,060	1,240	58.80	55.63	65.43	-3.17*	-5.38	58.80	59.30	0.50	0.85
$1–$3,647	680	180	11.54	12.09	10.39	0.55	4.75	11.54	10.67	-0.88	-7.59
$3,648–$6,250	690	180	10.47	11.01	9.33	0.54	5.19	10.47	9.92	-0.54	-5.17
$6,251–$10,898	700	150	9.60	10.66	7.37	1.06*	11.07	9.60	9.50	-0.10	-1.05
$10,899 or more	690	170	9.60	10.61	7.48	1.01*	10.53	9.60	10.62	1.02*	10.59
Total PLUS Loan amount received[8]						(Effect size = ‡)				(Effect size = ‡)	
None	5,390	1,810	98.10	97.94	98.42	-0.16	-0.16	98.10	98.08	-0.03*	-0.03
$1–$5,663	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$5,664–$10,214	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$10,215–$18,233	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
$18,234 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Federal aid status						(Effect size = 0.02)				(Effect size = 0.09)	
Received	4,100	1,060	64.70	65.65	62.72	0.95	1.46	64.70	60.49	-4.21*	-6.51
Did not receive	1,450	690	29.08	28.08	31.18	-1.00	-3.45	29.08	31.92	2.84*	9.75
Unknown	260	180	6.22	6.27	6.10	0.06	0.90	6.22	7.59	1.38	22.16
Institution aid status						(Effect size = 0.01)				(Effect size = 0.07)	
Received	2,500	720	40.61	40.65	40.53	0.04	0.09	40.61	37.40	-3.21*	-7.91
Did not receive	2,600	890	48.94	49.19	48.41	0.25	0.52	48.94	51.40	2.46	5.03
Unknown	720	320	10.45	10.16	11.06	-0.29	-2.80	10.45	11.20	0.75	7.18
State aid status						(Effect size = 0.04)				(Effect size = 0.06)	
Received	470	100	4.98	4.25	6.51	-0.73	-14.69	4.98	3.82	-1.15*	-23.18
Did not receive	4,570	1,490	84.11	85.23	81.78	1.12	1.33	84.11	84.66	0.54	0.65
Unknown	780	340	10.91	10.52	11.72	-0.39	-3.53	10.91	11.52	0.61	5.60
Any aid status						(Effect size = 0.10)				(Effect size = 0.10)	
Yes	5,050	1,400	80.62	82.44	76.82	1.82	2.25	80.62	77.40	-3.23*	-4.00
No	430	110	6.47	7.67	3.97	1.19*	18.44	6.47	6.51	0.04	0.62
Unknown	340	410	12.90	9.89	19.21	-3.01*	-23.33	12.90	16.09	3.19*	24.68

See notes at end of table.

Table I-4. Student-level nonresponse bias analysis for selected variables for students in private for-profit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Social Security number available						(Effect size = 0.05)				(Effect size = 0.02)	
Available	5,730	1,820	95.20	96.36	92.77	1.16	1.22	95.20	94.76	-0.44	-0.47
Not available	90	110	4.80	3.64	7.23	-1.16	-24.19	4.80	5.24	0.44	9.24
Veteran status						(Effect size = 0.07)				(Effect size = 0.05)	
Yes	670	280	18.58	16.01	23.94	-2.56*	-13.80	18.58	16.54	-2.04	-10.98
No	5,150	1,640	81.42	83.99	76.06	2.56*	3.15	81.42	83.46	2.04	2.50
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)	
White, non-Hispanic	2,720	740	46.17	48.34	41.62	2.17	4.71	46.17	47.60	1.43	3.09
Black, non-Hispanic	1,280	310	22.87	25.21	17.98	2.34	10.21	22.87	24.61	1.74	7.62
Hispanic	1,120	380	15.60	14.39	18.14	-1.21	-7.76	15.60	13.97	-1.64	-10.49
Asian, non-Hispanic	400	150	5.82	5.45	6.61	-0.38	-6.48	5.82	6.48	0.66	11.25
American Indian or Alaskan Native, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
More than one race, non-Hispanic	200	30	2.52	3.41	0.67	0.88*	35.03	2.52	2.87	0.34*	13.59
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Sex						(Effect size = ‡)				(Effect size = ‡)	
Male	2,330	850	38.71	36.47	43.42	-2.25*	-5.80	38.71	36.99	-1.72	-4.44
Female	3,490	1,070	61.19	63.53	56.29	2.34*	3.82	61.19	63.01	1.81*	2.96
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Percent of loans that is still owed[8]						(Effect size = 0.10)				(Effect size = 0.02)	
None	630	280	15.24	13.70	18.84	-1.66	-10.88	15.24	15.13	-0.11	-0.73
1–96 percent	1,080	340	26.27	24.99	29.28	-1.39	-5.28	26.27	26.50	0.22	0.85
97–105 percent	1,300	240	27.24	31.05	18.29	4.12*	15.13	27.24	27.97	0.74	2.70
106–111 percent	1,020	280	16.09	16.85	14.30	0.82	5.13	16.09	15.75	-0.34	-2.10
112 percent or more	950	370	15.17	13.41	19.29	-1.90*	-12.54	15.17	14.65	-0.51	-3.38

See notes at end of table.

Table I-4. Student-level nonresponse bias analysis for selected variables for students in private for-profit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Cumulative amount borrowed from federal loans[8]						(Effect size = 0.06)				(Effect size = 0.06)	
None	5,190	1,730	85.38	83.79	88.72	-1.60	-1.87	85.38	84.13	-1.25	-1.47
$1–$10,250	160	60	5.30	5.96	3.93	0.66	12.38	5.30	5.21	-0.10	-1.79
$10,251–$19,389	160	30	2.38	2.87	1.34	0.49*	20.83	2.38	2.43	0.06	2.39
$19,390–$26,144	170	40	2.99	3.72	1.45	0.73*	24.53	2.99	3.13	0.14	4.82
$26,145 or more	140	70	3.95	3.66	4.56	-0.29	-7.33	3.95	5.10	1.15	29.05
Degree major						(Effect size = ‡)				(Effect size = ‡)	
Humanities	810	240	8.69	8.23	9.61	-0.45	-5.13	8.69	8.43	-0.26	-2.99
Social/behavioral sciences	180	30	3.37	4.14	1.84	0.74*	21.97	3.37	3.93	0.55	16.46
Life sciences	100	60	3.74	4.20	2.82	0.45	11.90	3.74	3.84	0.10	2.59
Physical sciences/math	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Computer/information science	940	270	8.51	9.11	7.32	0.58	6.77	8.51	8.61	0.10	1.16
Engineering	240	90	2.81	2.77	2.87	-0.03	-1.12	2.81	2.72	-0.09	-3.05
Education	280	60	2.89	3.13	2.41	0.23	8.04	2.89	2.75	-0.14	-4.92
Business/Management	820	350	29.02	27.45	32.16	-1.52	-5.25	29.02	27.27	-1.76*	-6.05
Health	1,410	450	27.44	28.31	25.72	0.84	3.05	27.44	28.69	1.25	4.56
Vocational/technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other technical/professional	810	270	12.31	11.57	13.78	-0.72	-5.81	12.31	11.61	-0.69	-5.63
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Age as of Dec 31, 2015						(Effect size = ‡)				(Effect size = ‡)	
15–23	1,170	290	12.20	11.60	13.46	-0.60	-4.92	12.20	10.93	-1.28*	-10.47
24–29	1,650	530	25.75	25.91	25.42	0.16	0.61	25.75	25.97	0.23	0.87
30 or older	3,000	1,090	61.99	62.49	60.95	0.50	0.80	61.99	63.10	1.11	1.78
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡

See notes at end of table.

Table I-4. Student-level nonresponse bias analysis for selected variables for students in private for-profit institutions: 2017—Continued

	Before nonresponse weight adjustment							After nonresponse weight adjustment			
			Means, base weighted			Respondents vs. full sample		Means		Respondents vs. full sample	
Variable	Unweighted respondents	Unweighted non-respondents	Full sample	Respondent	Non-respondent	Esti-mated bias[1]	Relative bias[2]	Full sample, base weighted	Respondents, nonresponse adjusted[3]	Esti-mated bias[4]	Relative bias[2]
Type of federal loan repayment plan						(Effect size = ‡)				(Effect size = ‡)	
Multiple repayment plans	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Other	1,460	500	32.18	30.53	36.07	-1.79	-5.57	32.18	30.58	-1.60	-4.97
Income driven repayment	120	30	2.41	2.07	3.20	-0.36	-15.17	2.41	1.83	-0.58	-24.12
Graduated repayment	190	40	3.40	4.07	1.85	0.72	21.06	3.40	3.51	0.11	3.19
Standard repayment	190	60	4.15	3.81	4.96	-0.37	-8.97	4.15	3.85	-0.30	-7.16
Not repaying	2,640	760	44.81	46.03	41.96	1.31	2.93	44.81	46.29	1.48	3.29
Unknown	340	110	11.87	12.75	9.81	0.95	8.00	11.87	13.20	1.33	11.18

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] 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.
[2] Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean.
[3] Base weight, adjusted for nonresponse.
[4] Bias in the sample mean is estimated as the difference between the weighted respondent mean (using the base weight adjusted for nonresponse) and weighted full-sample mean (using the base weight).
[5] 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, 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.
[6] Categories were defined by quartiles computed at the institution level.
[7] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[8] 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. full sample) over full-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards. Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students. Sample sizes rounded to the nearest 10.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-5. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in all institutions: 2017

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted[1] (1)	After poststratification adjustment			
		Means		Difference	
		Full sample, base weighted (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) – Mean (3)	Mean (2) – Mean (3)
Control of institution					
Public institution	63.24	63.24	63.73	-0.49	-0.49
Private nonprofit institution	30.41	30.41	30.26	0.15	0.15
Private for-profit institution	6.35	6.35	6.01	0.34	0.34
Region of institution attended[2]					
New England	6.51	6.51	6.67	-0.16	-0.16
Mideast	17.75	17.75	17.54	0.21	0.21
Great Lakes	16.06	16.06	16.00	0.06	0.06
Plains	7.63	7.63	7.53	0.10	0.10
Southeast	22.62	22.61	22.89	-0.27	-0.28
Southwest	10.29	10.30	10.04	0.25	0.26
Rocky Mountains	4.15	4.15	4.10	0.05	0.05
Far West	14.21	14.21	14.57	-0.36	-0.36
Outlying areas	0.77	0.78	0.66	0.11	0.12
Institution total enrollment[3]					
None	11.40	11.40	12.24	-0.84*	-0.84*
1–2,907	21.27	21.27	21.30	-0.03	-0.03
2,908–10,133	31.05	31.05	31.24	-0.19	-0.19
10,134–27,396	36.28	36.28	35.23	1.05*	1.05*
Pell Grant status					
Received	29.92	30.16	33.15	-3.23*	-2.99*
Did not receive	70.08	69.84	66.85	3.23*	2.99*
Total Pell Grant amount received[4]					
None	70.08	69.84	66.85	3.23*	2.99*
$1–$2,888	10.31	10.40	11.42	-1.11*	-1.02*
$2,889–$5,774	12.03	12.13	13.25	-1.22*	-1.12*
$5,775 or more	7.58	7.64	8.48	-0.90*	-0.84*
Direct Loan status					
Received	43.23	43.23	46.66	-3.43*	-3.43*
Did not receive	56.77	56.77	53.34	3.43*	3.43*
Total Direct Loan amount received[5]					
None	56.77	56.77	53.34	3.43*	3.43*
$1–$4,185	10.26	10.26	10.83	-0.57*	-0.57*
$4,186–$7,500	23.18	23.18	24.81	-1.63*	-1.63*
$7,501–$8,307	0.50	0.50	0.54	-0.04	-0.04
$8,308 or more	9.29	9.29	10.47	-1.18*	-1.18*
Total PLUS Loan amount received[5]					
None	94.32	94.27	93.99	0.33	0.28*
$1–$7,039	1.27	1.28	1.37	-0.10*	-0.09
$7,040–$12,751	1.40	1.41	1.50	-0.10	-0.09
$12,752–$20,268	1.47	1.50	1.53	-0.06	-0.03
$20,269 or more	1.55	1.54	1.61	-0.06	-0.07

See notes at end of table.

Table I-5. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in all institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted[1] (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) – Mean (3)	Difference: Mean (2) – Mean (3)
Federal aid status					
Received	55.53	55.53	59.47	-3.94*	-3.94*
Did not receive	37.78	37.78	34.73	3.05*	3.05*
Unknown	6.69	6.69	5.80	0.89*	0.89*
Institution aid status					
Received	38.09	38.09	39.64	-1.55*	-1.55*
Did not receive	50.55	50.55	49.39	1.16*	1.16*
Unknown	11.36	11.36	10.97	0.39	0.39
State aid status					
Received	18.70	18.70	20.38	-1.68*	-1.68*
Did not receive	69.94	69.94	68.58	1.36*	1.36*
Unknown	11.35	11.35	11.04	0.31	0.31
Any aid status					
Yes	75.05	74.06	78.17	-3.12*	-4.11*
No	9.88	9.66	9.21	0.67*	0.45*
Unknown	15.07	16.28	12.62	2.45*	3.66*
Social Security number available					
Available	96.53	95.27	97.29	-0.76*	-2.02*
Not available	3.47	4.73	2.71	0.76*	2.02*
Veteran status					
Yes	4.03	4.03	4.00	0.03	0.03
No	95.97	95.97	96.00	-0.03	-0.03
Race/ethnicity					
White, non-Hispanic	63.91	62.46	63.55	0.36	-1.09*
Black, non-Hispanic	9.65	9.65	9.97	-0.32	-0.32
Hispanic	12.21	12.21	12.60	-0.39*	-0.39
Asian, non-Hispanic	8.24	8.24	8.13	0.11	0.11
American Indian or Alaskan Native, non-Hispanic	0.53	0.53	0.51	0.02	0.02
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	3.11	3.11	3.28	-0.17*	-0.17
Unknown	2.10	3.55	1.67	0.43*	1.88*
Sex					
Male	41.45	42.51	42.65	-1.20*	-0.14
Female	58.55	57.40	57.35	1.20*	0.05
Unknown	‡	‡	‡	‡	‡
Percent of loans that is still owed[5]					
None	22.34	22.28	22.60	-0.26	-0.32
1–96 percent	14.66	14.66	15.52	-0.86*	-0.86*
97–103 percent	12.49	12.50	13.83	-1.34*	-1.33*
104–111 percent	14.99	14.85	16.08	-1.09*	-1.23*
112 percent or more	35.51	35.71	31.96	3.55*	3.75*

See notes at end of table.

Table I-5. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in all institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted[1] (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) – Mean (3)	Difference: Mean (2) – Mean (3)
Cumulative amount borrowed from federal loans[5]					
None	89.83	89.83	89.51	0.32	0.32
$1–$10,573	2.65	2.65	2.59	0.06	0.06
$10,574–$20,500	2.35	2.35	2.37	-0.02	-0.02
$20,501–$28,440	2.67	2.67	2.95	-0.28*	-0.28*
$28,441 or more	2.50	2.50	2.58	-0.08	-0.08
Degree major					
Undecided	‡	‡	‡	‡	‡
Humanities	10.52	10.63	12.40	-1.88*	-1.77*
Social/behavioral sciences	13.24	13.38	14.07	-0.83*	-0.69*
Life sciences	11.60	11.72	12.74	-1.14*	-1.02*
Physical sciences/math	2.54	2.57	2.91	-0.37*	-0.34*
Computer/information science	3.50	3.54	3.31	0.19*	0.23
Engineering	6.94	7.02	6.17	0.77*	0.85*
Education	5.19	5.24	4.40	0.79*	0.84*
Business/Management	18.83	19.03	19.21	-0.38	-0.18
Health	13.07	12.14	11.36	1.71*	0.78
Vocational/technical	0.71	0.72	0.69	0.02	0.03
Other technical/professional	13.02	13.14	12.25	0.77*	0.89*
Unknown	0.83	0.84	0.49	0.34*	0.35*
Age as of Dec 31, 2015					
15–23	64.61	64.28	65.18	-0.57	-0.90
24–29	19.42	19.42	19.56	-0.14	-0.14
30 or older	15.97	15.97	15.26	0.71	0.71
Unknown	‡	‡	‡	‡	‡
Type of federal loan repayment plan					
Multiple repayment plans	2.15	2.15	1.93	0.22	0.22
Other	44.15	44.29	43.65	0.50*	0.64*
Income driven repayment	2.85	2.86	2.91	-0.06*	-0.05
Graduated repayment	2.37	2.38	2.48	-0.11*	-0.10*
Standard repayment	1.64	1.65	1.73	-0.09*	-0.08
Not repaying	33.83	34.15	34.97	-1.14*	-0.82*
Unknown	13.01	12.52	12.32	0.69	0.20

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] Base weight, adjusted for nonresponse.
[2] 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, 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.
[3] Categories were defined by quartiles computed at the institution level.
[4] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[5] Categories were defined by quartiles.
NOTE: Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-6. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in public institutions: 2017

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted1 (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) – Mean (3)	Difference: Mean (2) – Mean (3)
Region of institution attended[2]					
New England	3.80	3.85	3.91	-0.11	-0.06
Mideast	14.85	14.63	14.30	0.55*	0.33
Great Lakes	16.58	16.76	16.17	0.41	0.59
Plains	7.20	7.19	7.23	-0.03	-0.04
Southeast	25.09	25.24	25.27	-0.18	-0.03
Southwest	11.75	11.89	11.90	-0.15	-0.01
Rocky Mountains	3.84	3.89	3.94	-0.10	-0.05
Far West	16.50	16.16	16.93	-0.43*	-0.77
Outlying areas	‡	‡	‡	‡	‡
Institution total enrollment[3]					
1–11,413	20.63	20.07	19.66	0.97*	0.41
11,414–21,960	23.22	23.75	23.70	-0.48	0.05
21,961–35,263	27.26	27.34	27.69	-0.43	-0.35
35,264 or more	28.89	28.84	28.95	-0.06	-0.11
Pell Grant status					
Received	30.69	30.63	33.59	-2.90*	-2.96*
Did not receive	69.31	69.37	66.41	2.90*	2.96*
Total Pell Grant amount received[4]					
None	69.31	69.37	66.41	2.90*	2.96*
$1–$2,887	10.02	10.17	11.06	-1.04*	-0.89*
$2,888–$5,774	13.00	12.86	14.06	-1.06*	-1.20*
$5,775 or more	7.67	7.61	8.47	-0.80*	-0.86*
Direct Loan status					
Received	40.89	40.63	43.92	-3.03*	-3.29*
Did not receive	59.11	59.37	56.08	3.03*	3.29*
Total Direct Loan amount received[5]					
None	59.11	59.37	56.08	3.03*	3.29*
$1–$4,000	10.62	10.63	11.43	-0.81*	-0.80*
$4,001–$6,250	9.30	9.22	10.15	-0.85*	-0.93*
$6,251–$7,500	11.98	12.03	12.53	-0.55*	-0.50
$7,501 or more	8.99	8.75	9.81	-0.82*	-1.06*
Total PLUS Loan amount received[5]					
None	95.21	95.17	94.97	0.24	0.20*
$1–$5,940	‡	‡	‡	‡	‡
$5,941–$11,321	‡	‡	‡	‡	‡
$11,322–$16,800	1.13	1.16	1.17	-0.04	-0.01
$16,801 or more	1.34	1.41	1.39	-0.05	0.02
Federal aid status					
Received	53.49	53.05	56.93	-3.44*	-3.88*
Did not receive	39.37	39.79	36.72	2.65*	3.07*
Unknown	7.14	7.15	6.35	0.79*	0.80*

See notes at end of table.

Table I-6. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in public institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted1 (1)	After poststratification adjustment			
		Means		Difference	
		Full sample, base weighted (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) – Mean (3)	Mean (2) – Mean (3)
Institution aid status					
Received	28.00	27.79	28.86	-0.86*	-1.07*
Did not receive	58.84	59.13	58.44	0.40	0.69
Unknown	13.16	13.09	12.70	0.46	0.39
State aid status					
Received	21.12	20.99	22.70	-1.58*	-1.71*
Did not receive	66.66	66.76	65.49	1.17*	1.27*
Unknown	12.22	12.25	11.80	0.42	0.45
Any aid status					
Yes	71.63	70.04	74.36	-2.73*	-4.32*
No	11.76	11.35	10.96	0.80*	0.39
Unknown	16.61	18.61	14.68	1.93*	3.93*
Social Security number available					
Available	96.59	95.25	97.15	-0.56*	-1.90*
Not available	3.41	4.75	2.85	0.56*	1.90*
Veteran status					
Yes	2.96	2.89	3.11	-0.15	-0.22
No	97.04	97.11	96.89	0.15	0.22
Race/ethnicity					
White, non-Hispanic	64.34	62.69	63.68	0.66*	-0.99
Black, non-Hispanic	8.56	8.65	9.05	-0.49*	-0.40
Hispanic	12.58	12.50	12.89	-0.31	-0.39
Asian, non-Hispanic	9.05	8.73	8.75	0.30	-0.02
American Indian or Alaskan Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	3.19	3.18	3.28	-0.09	-0.10
Unknown	1.52	3.44	1.50	0.02	1.94*
Sex					
Male	42.00	43.06	43.35	-1.35*	-0.29
Female	58.00	56.81	56.65	1.35*	0.16
Unknown	‡	‡	‡	‡	‡
Percent of loans that is still owed[5]					
None	12.59	12.90	11.96	0.63	0.94
1–95 percent	21.95	21.70	21.55	0.40*	0.15
96–102 percent	23.42	23.58	23.38	0.04*	0.20*
103–111 percent	20.00	20.36	20.80	-0.80*	-0.44*
112 percent or more	22.04	21.46	22.32	-0.28*	-0.86*

See notes at end of table.

Table I-6. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in public institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted1 (1)	After poststratification adjustment			
		Means		Difference	
		Full sample, base weighted (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) – Mean (3)	Mean (2) – Mean (3)
Cumulative amount borrowed from federal loans[5]					
None	90.38	90.37	89.87	0.51*	0.50
$1–$11,069	2.40	2.39	2.62	-0.22*	-0.23
$11,070–$20,500	4.56	4.43	4.78	-0.22	-0.35*
$20,501–$27,557	‡	‡	‡	‡	‡
$27,558 or more	2.33	2.30	2.39	-0.06	-0.09
Degree major					
Undecided	‡	‡	‡	‡	‡
Humanities	9.22	9.40	10.74	-1.52*	-1.34*
Social/behavioral sciences	13.51	13.62	14.53	-1.02*	-0.91*
Life sciences	12.50	12.60	13.94	-1.44*	-1.34*
Physical sciences/math	2.39	2.51	2.71	-0.32*	-0.20
Computer/information science	3.23	3.30	2.89	0.34*	0.41*
Engineering	8.10	8.39	7.21	0.89*	1.18*
Education	5.68	5.63	4.72	0.96*	0.91*
Business/Management	17.16	17.54	18.13	-0.97*	-0.59
Health	11.83	10.68	10.21	1.62*	0.47
Vocational/technical	‡	‡	‡	‡	‡
Other technical/professional	14.65	14.47	13.59	1.06*	0.88*
Unknown	0.86	1.03	0.49	0.37*	0.54*
Age as of Dec 31, 2015					
15–23	66.57	66.66	66.48	0.09	0.18
24–29	21.31	21.02	21.45	-0.14	-0.43
30 or older	12.12	11.88	12.07	0.05	-0.19
Unknown	‡	‡	‡	‡	‡
Type of federal loan repayment plan					
Multiple repayment plans	2.00	2.04	1.83	0.17	0.21
Other	45.15	44.91	44.49	0.66*	0.42*
Income driven repayment	2.94	2.91	3.04	-0.10*	-0.13*
Graduated repayment	‡	‡	‡	‡	‡
Standard repayment	1.58	1.54	1.66	-0.08*	-0.12
Not repaying	32.63	33.20	33.70	-1.07*	-0.50*
Unknown	13.22	12.88	12.76	0.46	0.12

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] Base weight, adjusted for nonresponse.
[2] 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, 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.
[3] Categories were defined by quartiles computed at the institution level.
[4] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[5] Categories were defined by quartiles.
NOTE: Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-7. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private nonprofit institutions: 2017

Variable	After nonresponse weight adjustment mean; Respondents, nonresponse adjusted[1] (1)	After poststratification adjustment			
		Means		Difference	
		Full sample, base weighted (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of institution attended[2]					
New England	13.48	13.35	13.75	-0.27	-0.40
Mideast	25.86	26.27	25.78	0.08	0.49
Great Lakes	15.79	15.24	16.14	-0.35	-0.90*
Plains	8.20	8.49	8.61	-0.41*	-0.12
Southeast	17.91	17.51	17.80	0.11	-0.29
Southwest	4.21	4.10	3.89	0.32*	0.21
Rocky Mountains	4.80	4.67	4.44	0.36	0.23
Far West	8.13	8.80	8.30	-0.17	0.50
Outlying areas	‡	‡	‡	‡	‡
Institution total enrollment[3]					
1–2,395	21.68	22.03	22.43	-0.75	-0.40
2,396–4,774	23.54	23.62	24.21	-0.67	-0.59
4,775–11,971	25.21	25.78	25.53	-0.32	0.25
11,972 or more	29.56	28.57	27.83	1.73*	0.74
Pell Grant status					
Received	27.82	28.25	30.13	-2.31*	-1.88*
Did not receive	72.18	71.75	69.87	2.31*	1.88
Total Pell Grant amount received[4]					
None	72.18	71.75	69.87	2.31*	1.88
$1–$2,888	9.62	9.33	10.04	-0.42	-0.71*
$2,889–$5,774	10.87	11.35	11.93	-1.06*	-0.58*
$5,775 or more	7.33	7.57	8.16	-0.83*	-0.59*
Direct Loan status					
Received	48.62	49.05	51.97	-3.35*	-2.92*
Did not receive	51.38	50.95	48.03	3.35*	2.92*
Total Direct Loan amount received[5]					
None	51.38	50.95	48.03	3.35*	2.92*
$1–$5,500	14.24	13.70	14.45	-0.21	-0.75*
$5,501–$7,500	24.37	24.61	26.08	-1.71*	-1.47*
$7,501 or more	10.01	10.73	11.45	-1.44*	-0.72
Total PLUS Loan amount received[5]					
None	91.73	91.60	91.33	0.40	0.27*
$1–$9,000	1.71	1.93	1.92	-0.21*	0.01
$9,001–$15,100	‡	‡	‡	‡	‡
$15,101–$24,196	2.12	2.15	2.22	-0.10	-0.07
$24,197 or more	2.25	2.24	2.33	-0.08	-0.09
Federal aid status					
Received	58.74	58.76	62.45	-3.71*	-3.69*
Did not receive	35.70	35.40	32.56	3.14*	2.84*
Unknown	5.57	5.83	4.99	0.58*	0.84

See notes at end of table.

Table I-7. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private nonprofit institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; Respondents, nonresponse adjusted[1] (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) - Mean (3)	Difference: Mean (2) - Mean (3)
Institution aid status					
Received	59.21	58.97	61.62	-2.41*	-2.65*
Did not receive	33.15	33.06	30.82	2.33*	2.24*
Unknown	7.64	7.96	7.56	0.08	0.40
State aid status					
Received	16.79	16.82	18.14	-1.35*	-1.32*
Did not receive	73.70	73.61	72.36	1.34*	1.25*
Unknown	9.52	9.57	9.50	0.02	0.07
Any aid status					
Yes	81.66	81.05	84.55	-2.89*	-3.50*
No	6.66	6.82	6.03	0.63	0.79*
Unknown	11.67	12.13	9.42	2.25*	2.71*
Social Security number available					
Available	96.79	95.32	97.46	-0.67*	-2.14*
Not available	3.21	4.68	2.54	0.67*	2.14*
Veteran status					
Yes	3.64	3.35	3.68	-0.04	-0.33
No	96.36	96.65	96.32	0.04	0.33
Race/ethnicity					
White, non-Hispanic	66.41	65.37	66.42	-0.01	-1.05
Black, non-Hispanic	8.78	8.96	9.38	-0.60*	-0.42
Hispanic	11.06	10.88	11.02	0.04	-0.14
Asian, non-Hispanic	6.92	7.73	7.13	-0.21	0.60
American Indian or Alaskan Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	3.01	3.10	3.30	-0.29*	-0.20
Unknown	3.21	3.37	2.12	1.09*	1.25*
Sex					
Male	41.24	42.16	41.59	-0.35	0.57
Female	58.76	57.84	58.41	0.35	-0.57
Unknown	‡	‡	‡	‡	‡
Percent of loans that is still owed[5]					
None	11.57	12.06	10.97	0.60	1.09
1–96 percent	23.83	23.57	23.04	0.79	0.53
97–102 percent	20.91	20.60	21.20	-0.29*	-0.60*
103–113 percent	21.23	21.08	22.71	-1.48*	-1.63*
114 percent or more	22.46	22.68	22.08	0.38	0.60

See notes at end of table.

Table I-7. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private nonprofit institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; Respondents, nonresponse adjusted[1] (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) - Mean (3)	Difference: Mean (2) - Mean (3)
Cumulative amount borrowed from federal loans[5]					
None	89.88	89.64	89.38	0.50	0.26
$1–$11,082	2.92	2.91	2.71	0.21	0.20
$11,083–$20,500	4.12	3.96	4.38	-0.26	-0.42
$20,501–$30,750	1.04	1.03	1.22	-0.18*	-0.19
$30,751 or more	2.05	2.45	2.31	-0.26*	0.14
Degree major					
Humanities	13.63	13.61	15.61	-1.98*	-2.00*
Social/behavioral sciences	14.47	14.88	14.97	-0.50*	-0.09
Life sciences	11.22	11.47	12.12	-0.90*	-0.65*
Physical sciences/math	3.35	3.21	3.88	-0.53*	-0.67*
Computer/information science	3.07	3.03	2.70	0.37*	0.33
Engineering	5.34	4.97	4.62	0.72*	0.35
Education	4.63	4.89	3.81	0.82*	1.08*
Business/Management	20.70	20.17	20.71	-0.01	-0.54
Health	12.65	12.16	11.38	1.27*	0.78
Vocational/technical	‡	‡	‡	‡	‡
Other technical/professional	9.88	10.53	9.24	0.64*	1.29*
Unknown	‡	‡	‡	‡	‡
Age as of Dec 31, 2015					
15–23	71.76	70.20	72.25	-0.49	-2.05*
24–29	14.13	14.76	14.00	0.13	0.76
30 or older	14.12	14.84	13.75	0.37	1.09*
Unknown	‡	‡	‡	‡	‡
Type of federal loan repayment plan					
Multiple repayment plans	‡	‡	‡	‡	‡
Other	45.56	46.05	45.45	0.11*	0.60*
Income driven repayment	2.92	2.86	2.76	0.16	0.10
Graduated repayment	‡	‡	‡	‡	‡
Standard repayment	‡	‡	‡	‡	‡
Not repaying	33.12	33.40	33.51	-0.39*	-0.11*
Unknown	12.54	11.96	12.45	0.09*	-0.49*

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] Base weight, adjusted for nonresponse.
[2] 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, 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.
[3] Categories were defined by quartiles computed at the institution level.
[4] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[5] Categories were defined by quartiles.
NOTE: Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-8. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private for-profit institutions: 2017

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted[1] (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) – Mean (3)	Difference: Mean (2) – Mean (3)
Region of institution attended[2]					
New England	‡	‡	‡	‡	‡
Mideast	7.79	8.06	10.49	-2.70	-2.43
Great Lakes	12.19	13.04	13.42	-1.23	-0.38
Plains	9.20	7.98	5.30	3.90	2.68
Southeast	20.52	20.81	23.34	-2.82	-2.53
Southwest	24.94	24.04	21.23	3.71	2.81
Rocky Mountains	4.11	4.22	4.05	0.06	0.17
Far West	20.61	20.74	21.19	-0.58	-0.45
Outlying areas	0.51	0.79	0.68	-0.17	0.11
Institution total enrollment[3]					
1–1,384	11.51	12.47	19.07	-7.56*	-6.60*
1,385–3,082	11.39	11.33	19.07	-7.68*	-7.74*
3,083–16,103	14.72	14.95	20.50	-5.78*	-5.55*
16,104 or more	62.37	61.25	41.36	21.01*	19.89*
Pell Grant status					
Received	32.39	34.80	44.08	-11.69*	-9.28*
Did not receive	67.61	65.20	55.92	11.69*	9.28*
Total Pell Grant amount received[4]					
None	67.61	65.20	55.92	11.69*	9.28*
$1–$2,887	11.72	12.87	16.39	-4.67*	-3.52*
$2,888–$5,774	12.81	13.60	17.45	-4.64*	-3.85*
$5,775 or more	7.86	8.33	10.25	-2.39*	-1.92*
Direct Loan status					
Received	40.70	41.20	48.96	-8.26*	-7.76*
Did not receive	59.30	58.80	51.04	8.26*	7.76*
Total Direct Loan amount received[5]					
None	59.30	58.80	51.04	8.26*	7.76*
$1–$3,647	10.67	11.54	10.69	-0.02	0.85
$3,648–$6,250	9.92	10.47	11.86	-1.94	-1.39
$6,251–$10,898	9.50	9.60	12.77	-3.27*	-3.17*
$10,899 or more	10.62	9.60	13.65	-3.03*	-4.05*
Total PLUS Loan amount received[5]					
None	98.08	98.10	97.06	1.02	1.04
$1–$5,663	‡	‡	‡	‡	‡
$5,664–$10,214	‡	‡	‡	‡	‡
$10,215–$18,233	‡	‡	‡	‡	‡
$18,234 or more	‡	‡	‡	‡	‡
Federal aid status					
Received	60.49	64.70	71.44	-10.95*	-6.74*
Did not receive	31.92	29.08	24.50	7.42*	4.58*
Unknown	7.59	6.22	4.06	3.53	2.16

See notes at end of table.

Table I-8. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private for-profit institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted[1] (1)	After poststratification adjustment			
		Means		Difference	
		Full sample, base weighted (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) – Mean (3)	Mean (2) – Mean (3)
Institution aid status					
Received	37.40	40.61	43.30	-5.90*	-2.69
Did not receive	51.40	48.94	46.88	4.52	2.06
Unknown	11.20	10.45	9.82	1.38	0.63
State aid status					
Received	3.82	4.98	6.98	-3.16*	-2.00*
Did not receive	84.66	84.11	82.29	2.37	1.82
Unknown	11.52	10.91	10.73	0.79	0.18
Any aid status					
Yes	77.40	80.62	86.43	-9.03*	-5.81*
No	6.51	6.47	6.72	-0.21	-0.25
Unknown	16.09	12.90	6.86	9.23*	6.04*
Social Security number available					
Available	94.76	95.20	97.88	-3.12	-2.68
Not available	5.24	4.80	2.12	3.12	2.68
Veteran status					
Yes	16.54	18.58	15.07	1.47	3.51*
No	83.46	81.42	84.93	-1.47	-3.51*
Race/ethnicity					
White, non-Hispanic	47.60	46.17	47.62	-0.02	-1.45
Black, non-Hispanic	24.61	22.87	22.74	1.87	0.13
Hispanic	13.97	15.60	17.46	-3.49*	-1.86*
Asian, non-Hispanic	6.48	5.82	6.55	-0.07	-0.73
American Indian or Alaskan Native, non-Hispanic	‡	‡	‡	‡	‡
Native Hawaiian or other Pacific Islander, non-Hispanic	‡	‡	‡	‡	‡
More than one race, non-Hispanic	2.87	2.52	3.28	-0.41	-0.76*
Unknown	‡	‡	‡	‡	‡
Sex					
Male	36.99	38.71	40.50	-3.51	-1.79
Female	63.01	61.19	59.50	3.51	1.69
Unknown	‡	‡	‡	‡	‡
Percent of loans that is still owed[5]					
None	15.13	15.24	12.85	2.28	2.39
1–96 percent	26.50	26.27	23.39	3.11	2.88
97–105 percent	27.97	27.24	26.68	1.29	0.56
106–111 percent	15.75	16.09	19.87	-4.12*	-3.78*
112 percent or more	14.65	15.17	17.21	-2.56*	-2.04*

See notes at end of table.

Table I-8. Student-level analysis after nonresponse and poststratification adjustments for selected variables for students in private for-profit institutions: 2017—Continued

Variable	After nonresponse weight adjustment mean; respondents, nonresponse adjusted[1] (1)	After poststratification adjustment: Means: Full sample, base weighted (2)	After poststratification adjustment: Means: Respondents, adjusted for nonresponse and poststratification (3)	Difference: Mean (1) – Mean (3)	Difference: Mean (2) – Mean (3)
Cumulative amount borrowed from federal loans[8]					
None	84.13	85.38	86.28	-2.15	-0.90
$1–$10,250	5.21	5.30	3.21	2.00	2.09
$10,251–$19,389	2.43	2.38	3.03	-0.60*	-0.65*
$19,390–$26,144	3.13	2.99	3.49	-0.36	-0.50
$26,145 or more	5.10	3.95	4.00	1.10	-0.05
Degree major					
Humanities	8.43	8.69	13.87	-5.44*	-5.18*
Social/behavioral sciences	3.93	3.37	4.39	-0.46	-1.02
Life sciences	3.84	3.74	2.68	1.16	1.06
Physical sciences/math	‡	‡	‡	‡	‡
Computer/information science	8.61	8.51	11.10	-2.49*	-2.59*
Engineering	2.72	2.81	2.77	-0.05	0.04
Education	2.75	2.89	3.88	-1.13	-0.99
Business/Management	27.27	29.02	23.40	3.87	5.62*
Health	28.69	27.44	23.98	4.71	3.46
Vocational/technical	‡	‡	‡	‡	‡
Other technical/professional	11.61	12.31	13.25	-1.64*	-0.94
Unknown	‡	‡	‡	‡	‡
Age as of Dec 31, 2015					
15–23	10.93	12.20	15.75	-4.82*	-3.55*
24–29	25.97	25.75	27.56	-1.59	-1.81
30 or older	63.10	61.99	56.69	6.41*	5.30*
Unknown	‡	‡	‡	‡	‡
Type of federal loan repayment plan					
Multiple repayment plans	‡	‡	‡	‡	‡
Other	30.58	32.18	29.26	1.32	2.92
Income driven repayment	1.83	2.41	2.38	-0.55*	0.03
Graduated repayment	3.51	3.40	3.90	-0.39	-0.50
Standard repayment	3.85	4.15	3.90	-0.05	0.25
Not repaying	46.29	44.81	51.58	-5.29*	-6.77*
Unknown	13.20	11.87	8.13	5.07	3.74

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$
[1] Base weight, adjusted for nonresponse.
[2] 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, 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.
[3] Categories were defined by quartiles computed at the institution level.
[4] Pell Grant amounts are categories defined by the median of all students receiving less than $5,775, with students receiving $5,775 (the maximum) in one category.
[5] Categories were defined by quartiles.
NOTE: Base weight refers to the student sampling weight (final institution weight times student sampling adjustment) adjusted for student multiplicity and unknown eligibility. PLUS = Parent Loan for Undergraduate Students.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table I-9. Summary of item nonresponse bias analysis before and after imputation for all students, by control of institution: 2017

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1AFFCHLD (Result of financial cost of undergraduate and graduate education: Delayed having children, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.78	11.10	10.14
Median percent relative bias across characteristics	6.45	6.67	8.20	5.62
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.88	0.74	1.57	1.35
Effect size for difference[2]	0.01	0.01	0.02	0.02
B1AFFEDJB (Result of financial cost of undergraduate and graduate education: Took job instead of enrolling for additional education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.73	10.83	10.80	10.14
Median percent relative bias across characteristics	6.10	6.83	7.59	6.11
Percentage of characteristics with significant bias	54.35	50.00	49.40	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.06	0.12	0.33	0.55
Effect size for difference[2]	#	#	#	0.01
B1AFFHOME (Result of financial cost of undergraduate and graduate education: Delayed buying a home, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.69	10.81	11.05	10.07
Median percent relative bias across characteristics	6.34	6.92	8.10	6.13
Percentage of characteristics with significant bias	57.61	50.00	50.60	12.82
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.99	1.30	0.29	0.98
Effect size for difference[2]	0.01	0.01	#	0.01
B1AFFLESS (Result of financial cost of undergraduate and graduate education: Took job outside of field of study or a less desirable job, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.74	11.16	10.08
Median percent relative bias across characteristics	6.41	6.91	8.08	6.07
Percentage of characteristics with significant bias	57.61	50.00	50.60	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.53	1.10	0.08	2.97*
Effect size for difference[2]	0.01	0.01	#	0.03

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1AFFMARR (Result of financial cost of undergraduate and graduate education: Delayed getting married, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.73	10.78	11.15	10.07
Median percent relative bias across characteristics	6.43	6.86	8.20	6.10
Percentage of characteristics with significant bias	57.61	50.00	50.60	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.16*	1.06	1.82*	1.49*
Effect size for difference[2]	0.01	0.01	0.02	0.02
B1AFFWKMR (Result of financial cost of undergraduate and graduate education: Worked more than desired, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.79	11.12	10.11
Median percent relative bias across characteristics	6.28	6.90	8.25	6.12
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.11	0.09	0.05	1.31
Effect size for difference[2]	#	#	#	0.01
B1ALONE (Household composition: Living alone, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.92	11.03	9.77
Median percent relative bias across characteristics	6.52	6.12	8.14	6.01
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.78	0.87	1.14	1.57*
Effect size for difference[2]	0.01	0.01	0.02	0.02
B1APPLY (Ever applied for a preK–12th grade teaching position, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.93	11.11	11.39	10.26
Median percent relative bias across characteristics	6.72	7.42	8.78	6.02
Percentage of characteristics with significant bias	56.52	54.12	51.81	14.10
Median effect size	0.07	0.08	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	3.86*	4.31*	3.87*	1.98*
Effect size for difference[2]	‡	‡	‡	‡
B1ARTRCNT (Most recent teaching job, within 12 months after BA completion: Taught arts/music)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.71	0.66	0.65	2.03*
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1AWFAM (Respondent's immediate family aware of sexual orientation, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.90	11.64	10.28
Median percent relative bias across characteristics	6.24	6.97	8.22	6.17
Percentage of characteristics with significant bias	57.61	49.41	51.19	12.82
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.77*	0.73*	0.65	1.54*
Effect size for difference[2]	0.02	0.02	0.02	0.04
B1AWSOC (People respondent socializes with aware of sexual orientation, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.93	11.68	10.28
Median percent relative bias across characteristics	6.23	6.98	8.20	6.21
Percentage of characteristics with significant bias	57.61	49.41	51.19	11.54
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	1.18*	1.18*	1.12*	0.77*
Effect size for difference[2]	0.03	0.03	0.03	0.02
B1AWWORK (People respondent works with aware of sexual orientation, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.95	11.71	10.23
Median percent relative bias across characteristics	6.23	7.02	8.26	5.86
Percentage of characteristics with significant bias	57.61	49.41	51.19	8.97
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.81*	0.90*	0.36	2.65*
Effect size for difference[2]	0.02	0.02	0.01	0.04
B1BAL1ST (First job, within 12 months after BA completion: Satisfaction with work-life balance)				
Before imputation				
Mean percent relative bias across characteristics	10.96	11.46	12.66	13.07
Median percent relative bias across characteristics	7.81	7.67	8.71	7.97
Percentage of characteristics with significant bias	64.13	48.24	49.41	18.99
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.43	1.13	2.04*	2.19*
Effect size for difference[2]	0.01	0.02	0.02	0.03
B1BALRCNT (Most recent job, within 12 months after BA completion: Satisfaction with work-life balance)				
Before imputation				
Mean percent relative bias across characteristics	11.05	11.51	12.57	13.11
Median percent relative bias across characteristics	7.62	7.46	8.67	8.61
Percentage of characteristics with significant bias	61.96	49.41	49.41	18.99
Median effect size	0.07	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.69	1.04	0.60	3.21*
Effect size for difference[2]	0.01	0.01	0.01	0.04

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1BEN1ST (First job, within 12 months after BA completion: Satisfaction with benefits)				
Before imputation				
Mean percent relative bias across characteristics	10.94	11.56	12.67	13.08
Median percent relative bias across characteristics	7.92	7.72	8.69	8.15
Percentage of characteristics with significant bias	64.13	48.24	48.24	18.99
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	2.03*	2.42*	1.44	0.79
Effect size for difference[2]	0.02	0.02	0.01	0.01
B1BENBEN (Importance of job factors, as of B&B:16/17 interview: Employer-provided benefits)				
Before imputation				
Mean percent relative bias across characteristics	9.68	10.76	11.12	10.05
Median percent relative bias across characteristics	6.50	7.40	8.12	5.87
Percentage of characteristics with significant bias	55.43	49.41	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.48	0.70	0.76	2.13*
Effect size for difference[2]	0.01	0.01	0.01	0.04
B1BENCOM (Importance of job factors, as of B&B:16/17 interview: Commute)				
Before imputation				
Mean percent relative bias across characteristics	9.70	10.76	11.03	10.08
Median percent relative bias across characteristics	6.54	7.40	8.02	6.07
Percentage of characteristics with significant bias	55.43	49.41	50.60	15.38
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.71	1.53	1.33	1.65
Effect size for difference[2]	0.01	0.02	0.01	0.02
B1BENFLEX (Importance of job factors, as of B&B:16/17 interview: Making decisions)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.81	11.12	10.04
Median percent relative bias across characteristics	6.50	7.48	8.12	5.89
Percentage of characteristics with significant bias	55.43	49.41	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.91	0.97	0.68	1.83*
Effect size for difference[2]	0.01	0.01	0.02	0.02
B1BENPRO (Importance of job factors, as of B&B:16/17 interview: Promotion opportunities)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.73	11.19	10.05
Median percent relative bias across characteristics	6.51	7.55	8.13	6.00
Percentage of characteristics with significant bias	54.35	49.41	50.60	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.31	0.62	0.68	2.09*
Effect size for difference[2]	0.01	0.01	0.01	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1BENRCNT (Most recent job, within 12 months after BA completion: Satisfaction with benefits)				
Before imputation				
Mean percent relative bias across characteristics	11.11	11.64	12.58	13.13
Median percent relative bias across characteristics	7.88	7.52	8.64	8.14
Percentage of characteristics with significant bias	63.04	49.41	49.41	16.46
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.93	0.62	1.71	0.64
Effect size for difference[2]	0.01	0.01	0.02	0.01
B1BENRELA (Importance of job factors, as of B&B:16/17 interview: Work related to field of study)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.77	11.15	10.01
Median percent relative bias across characteristics	6.52	7.39	8.14	5.92
Percentage of characteristics with significant bias	55.43	49.41	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.68	1.04	1.88*	0.92
Effect size for difference[2]	0.01	0.01	0.02	0.01
B1BENSAL (Importance of job factors, as of B&B:16/17 interview: Wages and bonuses)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.72	11.14	10.67
Median percent relative bias across characteristics	6.49	6.55	8.06	6.37
Percentage of characteristics with significant bias	55.43	49.41	50.60	16.67
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.27	0.11	0.64	0.54
Effect size for difference[2]	0.01	‡	‡	‡
B1CARIND (Ever had a job that was part of career, within 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	11.08	11.56	12.57	13.05
Median percent relative bias across characteristics	8.62	7.43	8.87	8.05
Percentage of characteristics with significant bias	63.04	51.76	49.41	20.25
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.80*	1.52	2.13*	3.32*
Effect size for difference[2]	0.02	0.02	0.02	0.04
B1CARIND1ST (First job, within 12 months after BA completion: Part of a career)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.00	10.55	11.84
Median percent relative bias across characteristics	6.65	6.43	7.40	6.57
Percentage of characteristics with significant bias	59.34	53.57	50.00	23.08
Median effect size	0.07	0.07	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.81	1.05	0.48	0.30
Effect size for difference[2]	0.01	0.01	#	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1CARINDRCNT (Most recent job, within 12 months after BA completion: Part of a career)				
Before imputation				
Mean percent relative bias across characteristics	11.06	11.53	12.58	13.10
Median percent relative bias across characteristics	7.65	7.46	8.76	8.67
Percentage of characteristics with significant bias	61.96	49.41	49.41	18.99
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.60*	2.39*	0.33	0.72
Effect size for difference[2]	0.02	0.02	#	0.01
B1CARLOAN (Vehicle loan or lease payment, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.76	10.72	11.24	9.99
Median percent relative bias across characteristics	6.77	6.84	8.37	6.16
Percentage of characteristics with significant bias	58.70	50.00	50.60	11.54
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.53	1.26	0.84	0.61
Effect size for difference[2]	#	0.01	#	0.01
B1CERTART (Certified to teach arts/music, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.21	0.77	1.21	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CERTENG (Certified to teach English/language arts, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.52	0.65	0.49	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CERTESL (Certified to teach ESL, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.03	0.16	0.51	‡
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1CERTFLG (Certified to teach foreign languages, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.07	0.33	1.21	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CERTGENA (Certified to teach elementary education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.97	0.42	1.51	‡
Effect size for difference[2]	0.01	#	0.01	‡
B1CERTGENB (Certified to teach secondary education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	2.14	1.80	0.07	‡
Effect size for difference[2]	0.03	‡	‡	‡
B1CERTHLTH (Certified to teach health/physical education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.25	0.24	0.49	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CERTMTH (Certified to teach math/computer science, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.28	0.58	0.62	‡
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1CERTOTH (Certified to teach other unspecified subject, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.45	0.44	0.51	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CERTPREK (Certified to teach early childhood education/preK, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.20	0.31	0.09	‡
Effect size for difference[2]	#	#	‡	‡
B1CERTSCI (Certified to teach natural sciences, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	1.06	1.13	1.00	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CERTSOC (Certified to teach social sciences, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.45	0.03	1.10	‡
Effect size for difference[2]	0.01	‡	‡	‡
B1CERTSPED (Certified to teach special education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.32	0.21	0.59	‡
Effect size for difference[2]	#	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1CERTVOC (Certified to teach vocational/career/technical education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	45.01	44.44	57.69	81.44
Median percent relative bias across characteristics	25.92	29.36	39.95	46.59
Percentage of characteristics with significant bias	57.61	48.15	60.49	36.84
Median effect size	0.25	0.25	0.41	0.46
After imputation				
Difference between pre- and post-imputation means[1]	0.12	0.11	0.13	‡
Effect size for difference[2]	‡	‡	‡	‡
B1CLB (Involved in extracurricular club or group during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.80	10.90	11.10	9.77
Median percent relative bias across characteristics	6.51	6.08	8.22	5.92
Percentage of characteristics with significant bias	57.61	48.81	49.40	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.66*	0.56	0.39	2.92*
Effect size for difference[2]	0.01	‡	#	0.04
B1CLICENSE (Had industry certification or occupational license, within 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	11.00	11.45	12.55	12.76
Median percent relative bias across characteristics	8.15	7.61	9.19	8.02
Percentage of characteristics with significant bias	63.04	54.12	50.59	18.99
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.14	1.58	0.72	1.28
Effect size for difference[2]	0.01	0.02	0.01	0.01
B1CONTEMP (Contributed to employer-based retirement account, within the 12 months before B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	13.99	15.16	17.00	18.33
Median percent relative bias across characteristics	8.32	10.76	11.77	13.41
Percentage of characteristics with significant bias	46.74	40.70	45.24	27.85
Median effect size	0.10	0.10	0.10	0.13
After imputation				
Difference between pre- and post-imputation means[1]	0.42	0.03	1.59	0.79
Effect size for difference[2]	0.01	#	0.02	0.01
B1CONTNON (Contributed to non-employer-based retirement savings account, within the 12 months before B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	21.23	21.34	29.42	29.58
Median percent relative bias across characteristics	12.74	13.14	19.72	22.95
Percentage of characteristics with significant bias	48.91	30.59	51.19	26.58
Median effect size	0.12	0.12	0.19	0.23
After imputation				
Difference between pre- and post-imputation means[1]	0.75	0.65	2.92	1.78
Effect size for difference[2]	0.01	0.01	0.03	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1COOP (Participated in a co-operative experience during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.80	10.95	11.15	9.77
Median percent relative bias across characteristics	6.51	6.95	8.47	5.94
Percentage of characteristics with significant bias	57.61	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.17	0.15	0.27	0.11
Effect size for difference[2]	#	#	#	#
B1CRDBAL (Credit card balance, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	10.49	11.58	12.39	11.04
Median percent relative bias across characteristics	6.75	7.45	8.42	7.44
Percentage of characteristics with significant bias	54.35	48.24	45.88	11.54
Median effect size	0.07	0.08	0.07	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.74	3.24	0.31	6.24*
Effect size for difference[2]	#	0.01	#	0.03
B1CSTDYCR (Monthly childcare costs, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	44.43	45.67	51.47	24.34
Median percent relative bias across characteristics	35.26	31.99	43.23	17.50
Percentage of characteristics with significant bias	60.87	53.57	61.45	24.36
Median effect size	0.35	0.35	0.43	0.17
After imputation				
Difference between pre- and post-imputation means[1]	0.50	0.22	5.59	5.10
Effect size for difference[2]	#	#	0.03	0.03
B1CURBEN1ST (First job, within 12 months after BA completion: Reason for non-career job: To receive benefits)				
Before imputation				
Mean percent relative bias across characteristics	18.88	20.21	21.40	17.97
Median percent relative bias across characteristics	15.13	14.67	17.90	9.57
Percentage of characteristics with significant bias	64.13	55.29	60.00	11.39
Median effect size	0.14	0.15	0.17	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.95	1.16	0.74	1.12
Effect size for difference[2]	0.01	0.02	0.01	0.01
B1CURBENRCNT (Most recent job, within 12 months after BA completion: Reason for non-career job: To receive benefits)				
Before imputation				
Mean percent relative bias across characteristics	20.52	22.28	23.78	19.19
Median percent relative bias across characteristics	16.21	16.22	16.78	11.64
Percentage of characteristics with significant bias	64.13	52.94	58.82	12.66
Median effect size	0.16	0.18	0.16	0.10
After imputation				
Difference between pre- and post-imputation means[1]	0.45	0.73	0.50	3.01*
Effect size for difference[2]	0.01	0.01	0.01	0.04

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1CURCRT (Certified to teach, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.70	10.86	11.17	10.27
Median percent relative bias across characteristics	6.15	6.26	8.06	5.00
Percentage of characteristics with significant bias	56.52	50.00	50.60	12.82
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.35	0.14	0.31*
Effect size for difference[2]	#	0.01	#	‡
B1CUREDU1ST (First job, within 12 months after BA completion: Reason for non-career job: To earn money for education)				
Before imputation				
Mean percent relative bias across characteristics	18.88	20.21	21.40	17.97
Median percent relative bias across characteristics	15.13	14.67	17.90	9.57
Percentage of characteristics with significant bias	64.13	55.29	60.00	11.39
Median effect size	0.14	0.15	0.17	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.28	1.73	0.02	2.71
Effect size for difference[2]	0.01	0.02	#	0.03
B1CUREDURCNT (Most recent job, within 12 months after BA completion: Reason for non-career job: To earn money for education)				
Before imputation				
Mean percent relative bias across characteristics	20.52	22.28	23.78	19.19
Median percent relative bias across characteristics	16.21	16.22	16.78	11.64
Percentage of characteristics with significant bias	64.13	52.94	58.82	12.66
Median effect size	0.16	0.18	0.16	0.10
After imputation				
Difference between pre- and post-imputation means[1]	0.35	0.87	1.15	2.37
Effect size for difference[2]	#	0.01	0.01	0.03
B1CUREXP1ST (First job, within 12 months after BA completion: Reason for non-career job: To obtain job experience)				
Before imputation				
Mean percent relative bias across characteristics	18.88	20.21	21.40	17.97
Median percent relative bias across characteristics	15.13	14.67	17.90	9.57
Percentage of characteristics with significant bias	64.13	55.29	60.00	11.39
Median effect size	0.14	0.15	0.17	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.59	0.78	0.58	1.49
Effect size for difference[2]	0.01	0.01	0.01	0.02
B1CUREXPRCNT (Most recent job, within 12 months after BA completion: Reason for non-career job: To obtain job experience)				
Before imputation				
Mean percent relative bias across characteristics	20.52	22.28	23.78	19.19
Median percent relative bias across characteristics	16.21	16.22	16.78	11.64
Percentage of characteristics with significant bias	64.13	52.94	58.82	12.66
Median effect size	0.16	0.18	0.16	0.10
After imputation				
Difference between pre- and post-imputation means[1]	0.95	1.17	1.08	1.95
Effect size for difference[2]	0.01	0.01	0.01	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1CUROTH1ST (First job, within 12 months after BA completion: Reason for non-career job: Other reason)				
Before imputation				
Mean percent relative bias across characteristics	18.88	20.21	21.40	17.97
Median percent relative bias across characteristics	15.13	14.67	17.90	9.57
Percentage of characteristics with significant bias	64.13	55.29	60.00	11.39
Median effect size	0.14	0.15	0.17	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.22	0.96	1.50	0.14
Effect size for difference[2]	#	0.02	0.02	#
B1CUROTHRCNT (Most recent job, within 12 months after BA completion: Reason for non-career job: Other reason)				
Before imputation				
Mean percent relative bias across characteristics	20.52	22.28	23.78	19.19
Median percent relative bias across characteristics	16.21	16.22	16.78	11.64
Percentage of characteristics with significant bias	64.13	52.94	58.82	12.66
Median effect size	0.16	0.18	0.16	0.10
After imputation				
Difference between pre- and post-imputation means[1]	0.06	0.04	0.43	0.37
Effect size for difference[2]	#	#	0.01	0.01
B1CURPAY1ST (First job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills)				
Before imputation				
Mean percent relative bias across characteristics	18.88	20.21	21.40	17.97
Median percent relative bias across characteristics	15.13	14.67	17.90	9.57
Percentage of characteristics with significant bias	64.13	55.29	60.00	11.39
Median effect size	0.14	0.15	0.17	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.84	0.32	2.13	0.35
Effect size for difference[2]	0.01	#	0.02	#
B1CURPAYRCNT (Most recent job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills)				
Before imputation				
Mean percent relative bias across characteristics	20.52	22.28	23.78	19.19
Median percent relative bias across characteristics	16.21	16.22	16.78	11.64
Percentage of characteristics with significant bias	64.13	52.94	58.82	12.66
Median effect size	0.16	0.18	0.16	0.10
After imputation				
Difference between pre- and post-imputation means[1]	0.02	0.36	0.91	1.13
Effect size for difference[2]	#	#	0.01	0.01
B1DEP2 (Number of dependent children, 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	8.09*	4.15	13.90*	6.75*
Effect size for difference[2]	0.03	0.01	0.05	0.05

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1DEPAGEHIGH (Age of oldest dependent child, 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	42.12	44.03	49.72	20.22
Median percent relative bias across characteristics	30.48	29.23	42.88	12.57
Percentage of characteristics with significant bias	64.13	55.95	64.29	25.64
Median effect size	0.34	0.32	0.41	0.14
After imputation				
Difference between pre- and post-imputation means[1]	0.28	1.24	0.24	1.99
Effect size for difference[2]	#	0.01	#	0.04
B1DEPAGELOW (Age of youngest dependent child, 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	42.12	44.03	49.72	20.22
Median percent relative bias across characteristics	30.48	29.23	42.88	12.57
Percentage of characteristics with significant bias	64.13	55.95	64.29	25.64
Median effect size	0.34	0.32	0.41	0.14
After imputation				
Difference between pre- and post-imputation means[1]	0.14	0.21	2.45	2.01
Effect size for difference[2]	#	#	0.03	0.03
B1DERMAJHI (Highest degree enrollment, within 12 months after BA completion: Major or field of study)				
Before imputation				
Mean percent relative bias across characteristics	26.53	28.86	26.72	35.74
Median percent relative bias across characteristics	17.83	19.78	17.18	20.68
Percentage of characteristics with significant bias	60.44	59.04	52.50	40.26
Median effect size	0.20	0.20	0.17	0.26
After imputation				
Difference between pre- and post-imputation means[1]	1.91	‡	‡	‡
Effect size for difference[2]	‡	‡	‡	‡
B1DONATE (Donated to 2015-16 BA degree-granting institution, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.85	11.16	10.07
Median percent relative bias across characteristics	6.23	6.32	8.24	6.03
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.19	0.29	0.01	0.15
Effect size for difference[2]	#	0.01	#	‡
B1DPNTS (Household composition: Living with dependents, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.92	11.03	9.77
Median percent relative bias across characteristics	6.52	6.12	8.14	6.01
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.69	0.97	0.12	0.21
Effect size for difference[2]	0.01	0.02	#	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1DUPCRRCNT (Most recent teaching job, within 12 months after BA completion: Took junior/senior courses in primary subject)				
Before imputation				
Mean percent relative bias across characteristics	55.45	54.21	65.78	152.59
Median percent relative bias across characteristics	38.82	32.78	38.29	57.98
Percentage of characteristics with significant bias	45.88	27.63	39.73	41.82
Median effect size	0.40	0.32	0.47	0.65
After imputation				
Difference between pre- and post-imputation means[1]	2.17	4.65	3.19	‡
Effect size for difference[2]	‡	‡	‡	‡
B1EERCNT (Most recent teaching job, within 12 months after BA completion: taught elementary education)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	2.19	6.37	5.91	‡
Effect size for difference[2]	0.02	0.06	0.06	‡
B1ELNINAW (Teacher loan forgiveness programs influence and usage, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	42.42	43.92	49.00	90.61
Median percent relative bias across characteristics	25.94	27.81	31.72	60.68
Percentage of characteristics with significant bias	54.44	49.38	56.10	45.07
Median effect size	0.27	0.25	0.39	0.59
After imputation				
Difference between pre- and post-imputation means[1]	1.76	3.06	3.29	‡
Effect size for difference[2]	‡	‡	‡	‡
B1ELNPRT (Teacher loan forgiveness awareness, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.76	10.93	11.17	10.14
Median percent relative bias across characteristics	6.46	6.66	8.29	5.95
Percentage of characteristics with significant bias	55.43	49.41	51.81	16.67
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.56	0.84	0.33	1.06
Effect size for difference[2]	0.01	0.01	#	0.01
B1EMPDIS (Reason not working for pay, between BA completion and June 2017: Disabled)				
Before imputation				
Mean percent relative bias across characteristics	47.27	34.80	61.24	79.78
Median percent relative bias across characteristics	27.38	22.69	36.33	48.14
Percentage of characteristics with significant bias	22.47	9.09	25.97	30.67
Median effect size	0.23	0.21	0.40	0.37
After imputation				
Difference between pre- and post-imputation means[1]	‡	‡	‡	‡
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1EMPHM (Reason not working for pay, between BA completion and June 2017: Homemaker)				
Before imputation				
Mean percent relative bias across characteristics	47.48	35.10	61.24	79.78
Median percent relative bias across characteristics	28.38	21.82	36.33	48.14
Percentage of characteristics with significant bias	23.60	11.69	25.97	30.67
Median effect size	0.23	0.22	0.40	0.37
After imputation				
Difference between pre- and post-imputation means[1]	‡	‡	‡	‡
Effect size for difference[2]	‡	‡	‡	‡
B1EMPTMP (Reason not working for pay, between BA completion and June 2017: Laid off, on leave, or waiting to report to work)				
Before imputation				
Mean percent relative bias across characteristics	47.31	34.85	61.24	79.78
Median percent relative bias across characteristics	27.51	22.56	36.33	48.14
Percentage of characteristics with significant bias	22.47	9.09	25.97	30.67
Median effect size	0.23	0.21	0.40	0.37
After imputation				
Difference between pre- and post-imputation means[1]	‡	‡	‡	‡
Effect size for difference[2]	‡	‡	‡	‡
B1EMPTRV (Reason not working for pay, between BA completion and June 2017: Traveling)				
Before imputation				
Mean percent relative bias across characteristics	47.31	34.85	61.24	79.78
Median percent relative bias across characteristics	27.51	22.56	36.33	48.14
Percentage of characteristics with significant bias	22.47	9.09	25.97	30.67
Median effect size	0.23	0.21	0.40	0.37
After imputation				
Difference between pre- and post-imputation means[1]	‡	‡	‡	‡
Effect size for difference[2]	‡	‡	‡	‡
B1EMPTYPRCNT (Most recent employer, within 12 months after BA completion: Type of employer)				
Before imputation				
Mean percent relative bias across characteristics	10.85	11.40	12.27	12.75
Median percent relative bias across characteristics	7.60	7.52	8.63	8.31
Percentage of characteristics with significant bias	64.13	48.24	49.41	18.99
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.92*	1.27*	1.17	1.76
Effect size for difference[2]	0.02	‡	‡	‡
B1EMPVOL (Reason not working for pay, between BA completion and June 2017: Volunteering or unpaid internship)				
Before imputation				
Mean percent relative bias across characteristics	47.27	34.80	61.24	79.78
Median percent relative bias across characteristics	27.38	22.69	36.33	48.14
Percentage of characteristics with significant bias	22.47	9.09	25.97	30.67
Median effect size	0.23	0.21	0.40	0.37
After imputation				
Difference between pre- and post-imputation means[1]	‡	‡	‡	‡
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1ENGRCNT (Most recent teaching job, within 12 months after BA completion: Taught English/language arts)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.71	1.52	0.75	1.67*
Effect size for difference[2]	‡	‡	‡	‡
B1EPREPALT (Prepared to teach through an alternative entry program, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.80	11.17	10.08
Median percent relative bias across characteristics	6.36	6.36	8.12	6.00
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.05	0.08	0.08	0.03
Effect size for difference[2]	#	‡	‡	‡
B1EPREPCOL (Prepared to teach at a college or university that provides certification, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.80	11.17	10.08
Median percent relative bias across characteristics	6.36	6.36	8.12	6.00
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.47	0.63	0.38	0.24
Effect size for difference[2]	0.01	0.01	#	0.01
B1EPREPCOMP (Prepared to teach through a student teaching assignment, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.80	11.17	10.08
Median percent relative bias across characteristics	6.36	6.36	8.12	6.00
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.11	0.16	0.10	0.01
Effect size for difference[2]	#	#	#	#
B1EPREPONL (Prepared to teach through an online-only certification program, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.80	11.17	10.08
Median percent relative bias across characteristics	6.36	6.36	8.12	6.00
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.10	0.05	0.01	0.23
Effect size for difference[2]	#	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1EPRMSBRCNT (Most recent teaching job, within 12 months after BA completion: Primary subject taught)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	4.39	12.06	9.80	‡
Effect size for difference[2]	‡	‡	‡	‡
B1ERNHIDG (Highest degree enrollment, within 12 months after BA completion: Completed program)				
Before imputation				
Mean percent relative bias across characteristics	30.35	31.14	32.17	38.45
Median percent relative bias across characteristics	22.31	17.80	19.21	24.09
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	0.82	3.30	3.10	1.03
Effect size for difference[2]	0.01	0.05	0.05	‡
B1ESLRCNT (Most recent teaching job, within 12 months after BA completion: Taught ESL)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.57	0.99	0.23	#
Effect size for difference[2]	‡	‡	‡	#
B1ESTTCLG (Length of student teaching)				
Before imputation				
Mean percent relative bias across characteristics	44.49	45.65	51.53	102.95
Median percent relative bias across characteristics	28.97	24.69	34.72	72.56
Percentage of characteristics with significant bias	53.26	50.60	47.56	52.63
Median effect size	0.25	0.24	0.34	0.59
After imputation				
Difference between pre- and post-imputation means[1]	1.15	1.08	1.25	0.83
Effect size for difference[2]	‡	‡	‡	‡
B1ETEACHGT (TEACH grant awareness, as of B&B:16/17 interview: As of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.66	11.17	10.04
Median percent relative bias across characteristics	6.35	6.51	8.22	5.93
Percentage of characteristics with significant bias	55.43	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.46	0.58	0.55	0.95
Effect size for difference[2]	0.01	0.01	0.01	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1EVRTCH (Ever taught at preK–12 level, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.91	11.07	11.39	10.26
Median percent relative bias across characteristics	6.65	7.26	8.75	5.96
Percentage of characteristics with significant bias	56.52	54.12	50.60	14.10
Median effect size	0.07	0.08	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	3.74*	4.19*	3.77*	2.27*
Effect size for difference[2]	0.05	0.05	0.04	0.03
B1EVRVT (Ever voted in any election, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	10.47	11.63	11.88	11.65
Median percent relative bias across characteristics	6.90	7.34	8.47	8.19
Percentage of characteristics with significant bias	58.70	52.94	50.60	20.51
Median effect size	0.08	0.08	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.32	0.27	0.01	2.51*
Effect size for difference[2]	#	#	#	0.03
B1EXPAP (Ever on academic probation during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.88	11.07	9.77
Median percent relative bias across characteristics	6.46	6.09	8.12	5.93
Percentage of characteristics with significant bias	56.52	48.81	50.60	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.31	0.58	0.02	0.43*
Effect size for difference[2]	0.01	0.01	#	‡
B1EXPEVR (Highest level of education expected ever, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.77
Median percent relative bias across characteristics	6.52	6.04	8.25	6.01
Percentage of characteristics with significant bias	56.52	50.00	50.60	12.82
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.87*	1.85*	1.97*	0.18
Effect size for difference[2]	0.02	‡	‡	‡
B1EXPGH (Graduated from 2015-16 BA degree-granting institution with academic honors)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.87	11.08	9.71
Median percent relative bias across characteristics	6.61	6.21	8.18	6.05
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	3.01*	3.39*	2.40*	1.68
Effect size for difference[2]	0.03	0.03	0.02	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1FACS (Main factor in post-BA field of study choice between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	29.47	30.29	32.01	37.89
Median percent relative bias across characteristics	21.22	19.28	18.60	22.55
Percentage of characteristics with significant bias	58.24	53.66	48.78	28.21
Median effect size	0.21	0.23	0.19	0.21
After imputation				
Difference between pre- and post-imputation means[1]	2.95	3.62	3.39	16.57*
Effect size for difference[2]	0.05	0.06	0.04	0.21
B1FDAWRK1ST (First employer, within 12 months after BA completion: Found job through: Already working for employer)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	1.08*	1.15	0.69	2.03*
Effect size for difference[2]	0.01	0.01	0.01	0.02
B1FDAWRKRCNT (Most recent employer, within 12 months after BA completion: Found job through: Already working for employer)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.14	0.02	0.58	1.17
Effect size for difference[2]	#	#	0.01	0.01
B1FDCOL1ST (First employer, within 12 months after BA completion: Found job through: Colleague or mentor)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.02	0.03	0.04	0.87
Effect size for difference[2]	#	#	#	0.02
B1FDCOLRCNT (Most recent employer, within 12 months after BA completion: Found job through: Colleague or mentor)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.05	0.28	0.31	0.73
Effect size for difference[2]	#	#	0.01	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1FDDI1ST (First employer, within 12 months after BA completion: Found job through: Direct inquiry)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.03	0.19	0.65	1.77*
Effect size for difference[2]	#	#	0.01	0.03
B1FDDIRCNT (Most recent employer, within 12 months after BA completion: Found job through: Direct inquiry)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.48	0.98	0.62	1.14
Effect size for difference[2]	0.01	0.02	0.01	0.02
B1FDFAC1ST (First employer, within 12 months after BA completion: Found job through: Faculty member or alumni)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.69	0.94	0.19	1.23*
Effect size for difference[2]	0.01	0.02	#	0.03
B1FDFACRCNT (Most recent employer, within 12 months after BA completion: Found job through: Faculty member or alumni)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.52	0.42	0.75	1.05
Effect size for difference[2]	0.01	0.01	0.01	0.02
B1FDFAM1ST (First employer, within 12 months after BA completion: Found job through: Friends or family)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.44	0.55	0.27	0.20
Effect size for difference[2]	#	0.01	#	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1FDFAMRCNT (Most recent employer, within 12 months after BA completion: Found job through: Friends or family)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.37	0.15	0.90	0.13
Effect size for difference[2]	#	#	0.01	#
B1FDHHR1ST (First employer, within 12 months after BA completion: Found job through: Headhunter or recruiter)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.35	0.31	0.54	0.14
Effect size for difference[2]	0.01	0.01	0.01	#
B1FDHHRRCNT (Most recent employer, within 12 months after BA completion: Found job through: Headhunter or recruiter)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.08	0.05	0.12	0.29
Effect size for difference[2]	#	#	#	0.01
B1FDINT1ST (First employer, within 12 months after BA completion: Found job through: Internship)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.81*	0.82	0.98	0.68*
Effect size for difference[2]	0.02	0.01	0.02	0.02
B1FDINTRCNT (Most recent employer, within 12 months after BA completion: Found job through: Internship)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.72*	0.81	0.71	0.49
Effect size for difference[2]	0.01	0.02	0.01	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1FDONL1ST (First employer, within 12 months after BA completion: Found job through: Online job posting)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	2.14*	2.31*	2.09*	0.79
Effect size for difference[2]	0.02	0.03	0.02	0.01
B1FDONLRCNT (Most recent employer, within 12 months after BA completion: Found job through: Online job posting)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.67	0.71	0.71	0.12
Effect size for difference[2]	0.01	0.01	0.01	#
B1FDOTH1ST (First employer, within 12 months after BA completion: Found job through: Other)				
Before imputation				
Mean percent relative bias across characteristics	10.71	11.29	12.28	12.47
Median percent relative bias across characteristics	7.61	7.48	8.26	7.81
Percentage of characteristics with significant bias	60.87	45.88	47.62	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.42	0.30	0.70	0.33
Effect size for difference[2]	0.01	0.01	0.01	0.01
B1FDOTHRCNT (Most recent employer, within 12 months after BA completion: Found job through: Other)				
Before imputation				
Mean percent relative bias across characteristics	10.87	11.48	12.28	12.98
Median percent relative bias across characteristics	7.70	7.52	8.59	8.34
Percentage of characteristics with significant bias	61.96	50.59	49.41	17.72
Median effect size	0.07	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.21	0.06	0.72	0.48
Effect size for difference[2]	#	#	0.01	0.01
B1FIN2000 (Respondent's confidence in ability to come up with $2,000 within the next month, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.80	11.13	10.10
Median percent relative bias across characteristics	6.29	6.67	8.23	6.11
Percentage of characteristics with significant bias	57.61	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.65	0.71	0.20	3.70*
Effect size for difference[2]	0.01	0.01	#	0.05

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1FLRCNT (Most recent teaching job, within 12 months after BA completion: Taught foreign languages)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.20	0.79	1.11	0.36
Effect size for difference[2]	‡	‡	‡	‡
B1FRPLRCNT (Most recent school, within 12 months after BA completion: Percent free or reduced price lunch eligible)				
Before imputation				
Mean percent relative bias across characteristics	48.55	49.89	58.31	99.60
Median percent relative bias across characteristics	29.05	31.80	42.14	51.92
Percentage of characteristics with significant bias	55.56	56.79	46.84	46.38
Median effect size	0.30	0.30	0.47	0.48
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.84	2.41	1.06
Effect size for difference[2]	#	0.02	0.04	0.02
B1FTRBEGSAL (Estimated expected beginning salary, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	10.21	11.14	11.62	11.55
Median percent relative bias across characteristics	6.85	7.00	7.64	5.86
Percentage of characteristics with significant bias	58.24	51.81	47.56	22.08
Median effect size	0.08	0.08	0.08	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.48	0.20	0.95	0.10
Effect size for difference[2]	0.01	#	0.02	#
B1FTRHIGHSAL (Estimated highest possible beginning salary, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	10.47	11.42	11.19	12.18
Median percent relative bias across characteristics	6.96	7.62	6.29	6.53
Percentage of characteristics with significant bias	54.95	50.60	46.99	21.79
Median effect size	0.08	0.08	0.08	0.06
After imputation				
Difference between pre- and post-imputation means[1]	1.70	1.25	7.00	3.52*
Effect size for difference[2]	#	#	0.01	0.04
B1FTRLOWSAL (Estimated lowest possible beginning salary, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	10.39	11.47	11.16	12.22
Median percent relative bias across characteristics	7.03	7.68	5.99	6.68
Percentage of characteristics with significant bias	54.95	49.40	47.56	23.08
Median effect size	0.08	0.08	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.98*	1.41*	3.13*	1.21*
Effect size for difference[2]	0.03	0.02	0.05	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1GENDER (Gender, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.74	10.77	11.16	10.05
Median percent relative bias across characteristics	6.26	6.51	8.24	5.84
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.94*	1.43	3.18*	0.97
Effect size for difference[2]	‡	‡	‡	‡
B1GMAT (Took GMAT, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.81	11.02	9.70
Median percent relative bias across characteristics	6.50	5.99	8.26	5.92
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.15	0.10	0.10	0.03
Effect size for difference[2]	0.01	‡	‡	‡
B1GRDEXM (Took a graduate or professional entrance exam, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.74	10.83	11.01	9.66
Median percent relative bias across characteristics	6.47	5.98	8.21	5.91
Percentage of characteristics with significant bias	56.52	50.00	50.60	12.82
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.68	1.09	0.41	1.11
Effect size for difference[2]	0.01	0.01	#	0.02
B1GRE (Took GRE, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.81	11.02	9.70
Median percent relative bias across characteristics	6.50	5.99	8.26	5.92
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.15	0.28	0.21	0.96*
Effect size for difference[2]	#	#	#	0.04
B1GREEK (Involved in Greek life during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.92	11.00	9.78
Median percent relative bias across characteristics	6.48	6.21	8.13	5.92
Percentage of characteristics with significant bias	55.43	51.19	48.19	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.53	1.05	3.59*
Effect size for difference[2]	#	0.01	0.01	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1HAVEDEPM00 (Have any dependents, month of BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.38*	0.97	2.86*	5.35*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM01 (Have any dependents, 1 month after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.39*	1.00	2.82*	5.43*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM02 (Have any dependents, 2 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.37*	0.99	2.83*	5.40*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM03 (Have any dependents, 3 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.39*	0.97	2.93*	5.32*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM04 (Have any dependents, 4 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.49*	1.02	2.93*	5.44*
Effect size for difference[2]	0.03	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1HAVEDEPM05 (Have any dependents, 5 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.53*	1.11	2.95*	5.40*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM06 (Have any dependents, 6 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.50*	1.06	2.98*	5.37*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM07 (Have any dependents, 7 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.50*	1.07	2.96*	5.30*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM08 (Have any dependents, 8 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.47*	1.04	2.94*	5.25*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM09 (Have any dependents, 9 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.48*	1.04	2.96*	5.21*
Effect size for difference[2]	0.03	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1HAVEDEPM10 (Have any dependents, 10 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.51*	1.09	2.94*	5.08*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM11 (Have any dependents, 11 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.46*	1.06	2.86*	5.02*
Effect size for difference[2]	0.03	‡	‡	‡
B1HAVEDEPM12 (Have any dependents, 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	2.50*	1.11	2.89*	5.04*
Effect size for difference[2]	0.03	‡	‡	‡
B1HIDEG (Highest degree enrollment, within 12 months after BA completion: Degree type)				
Before imputation				
Mean percent relative bias across characteristics	25.77	27.52	27.75	37.77
Median percent relative bias across characteristics	18.00	18.25	18.17	22.59
Percentage of characteristics with significant bias	62.64	59.76	51.25	36.36
Median effect size	0.20	0.19	0.18	0.25
After imputation				
Difference between pre- and post-imputation means[1]	8.22*	9.96*	7.27*	6.13
Effect size for difference[2]	‡	‡	‡	‡
B1HIDGASST (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Assistantships or fellowships)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	4.67*	6.26*	3.37	6.38*
Effect size for difference[2]	0.07	0.09	0.05	0.16

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1HIDGEMPAID (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Employer tuition assistance)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	0.31	0.39	0.33	1.69
Effect size for difference[2]	0.01	0.01	0.01	0.03
B1HIDGGIFT (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Personal loan or gift)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	2.95*	3.77	2.19	0.27
Effect size for difference[2]	0.05	0.06	0.04	‡
B1HIDGGRANT (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Grants or scholarships)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	1.35	1.66	1.27	4.88
Effect size for difference[2]	0.01	0.02	0.01	0.05
B1HIDGONLIN (Highest degree enrollment, within 12 months after BA completion: Took online courses)				
Before imputation				
Mean percent relative bias across characteristics	30.52	31.45	32.21	38.46
Median percent relative bias across characteristics	21.26	17.75	19.38	24.10
Percentage of characteristics with significant bias	59.34	55.42	47.56	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	1.60	1.54	1.59	12.68*
Effect size for difference[2]	0.02	0.02	0.02	0.14
B1HIDGOTHAID (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Other)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.79	0.41	3.46
Effect size for difference[2]	#	0.02	0.01	0.05

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1HIDGPOCKET (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Own money)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	2.20	2.12	4.78	16.67*
Effect size for difference[2]	0.02	0.02	0.05	0.17
B1HIDGPRIV (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Private loans)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	3.53*	3.06	5.73*	2.12
Effect size for difference[2]	0.06	0.05	0.09	0.04
B1HIDGWRKSDY (Highest degree enrollment, within 12 months after BA completion: Financial aid type: Federal work-study)				
Before imputation				
Mean percent relative bias across characteristics	30.46	31.40	32.31	38.43
Median percent relative bias across characteristics	21.78	17.78	19.54	24.08
Percentage of characteristics with significant bias	59.34	55.42	46.34	30.77
Median effect size	0.21	0.22	0.20	0.21
After imputation				
Difference between pre- and post-imputation means[1]	0.04	0.02	#	0.92*
Effect size for difference[2]	#	‡	#	‡
B1HOMOWE (Amount owed on mortgage for primary residence, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	32.73	33.19	39.17	21.11
Median percent relative bias across characteristics	19.04	18.78	29.39	14.18
Percentage of characteristics with significant bias	61.96	48.81	54.76	25.64
Median effect size	0.17	0.17	0.28	0.12
After imputation				
Difference between pre- and post-imputation means[1]	0.08	1.68	1.83	2.11
Effect size for difference[2]	#	0.02	0.02	0.03
B1HOMVAL (Value of residence, As of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	32.76	33.29	38.77	20.67
Median percent relative bias across characteristics	18.88	20.46	27.72	14.05
Percentage of characteristics with significant bias	64.13	48.81	54.76	26.92
Median effect size	0.17	0.16	0.28	0.12
After imputation				
Difference between pre- and post-imputation means[1]	0.29	1.65	2.64	2.36
Effect size for difference[2]	#	0.02	0.03	0.03

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1HOTH (Household composition: Living with others, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.92	11.03	9.77
Median percent relative bias across characteristics	6.52	6.12	8.14	6.01
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.08*	1.22	0.87	0.85
Effect size for difference[2]	0.01	0.01	0.01	0.01
B1HOUSE (Housing status, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.77	10.82	11.17	10.15
Median percent relative bias across characteristics	6.35	6.75	8.12	6.06
Percentage of characteristics with significant bias	57.61	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.91	0.91	1.36	1.92*
Effect size for difference[2]	0.01	‡	‡	‡
B1HPERCNT (Most recent teaching job, within 12 months after BA completion: Taught health/physical education)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.21	0.35	0.03	1.30*
Effect size for difference[2]	‡	‡	‡	‡
B1INCHO (Satisfaction with quality of undergraduate education, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.85	11.02	9.73
Median percent relative bias across characteristics	6.19	5.97	8.20	5.96
Percentage of characteristics with significant bias	55.43	48.81	50.60	12.82
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.95	0.68	0.50	2.98*
Effect size for difference[2]	0.01	‡	‡	‡
B1INCOM (Gross income, 2016 calendar year)				
Before imputation				
Mean percent relative bias across characteristics	9.60	10.55	11.68	10.04
Median percent relative bias across characteristics	5.93	6.92	8.66	6.37
Percentage of characteristics with significant bias	53.26	48.24	49.41	11.39
Median effect size	0.06	0.07	0.08	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.68	1.04	0.29	1.43
Effect size for difference[2]	0.01	0.01	#	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1INCSP (Spouse or domestic partner's gross income, 2016 calendar year)				
Before imputation				
Mean percent relative bias across characteristics	26.67	27.39	32.73	19.16
Median percent relative bias across characteristics	21.47	19.63	23.27	9.65
Percentage of characteristics with significant bias	60.87	54.12	49.41	20.25
Median effect size	0.16	0.16	0.23	0.12
After imputation				
Difference between pre- and post-imputation means[1]	2.17	0.46	2.95	8.46*
Effect size for difference[2]	0.02	#	0.03	0.08
B1IND01 (Participated in formal teacher induction program in first teaching job since 2015-16 BA degree)				
Before imputation				
Mean percent relative bias across characteristics	42.33	43.62	48.19	90.61
Median percent relative bias across characteristics	26.55	25.85	32.25	60.68
Percentage of characteristics with significant bias	53.33	49.38	52.44	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	3.69	4.00	3.82	‡
Effect size for difference[2]	0.04	0.04	0.04	‡
B1INFLACCT (Teaching influences, as of B&B:16/17 interview: Teacher accountability)				
Before imputation				
Mean percent relative bias across characteristics	42.46	43.70	48.34	90.61
Median percent relative bias across characteristics	26.50	26.15	32.28	60.68
Percentage of characteristics with significant bias	53.33	49.38	51.22	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	4.39	4.31	5.94	‡
Effect size for difference[2]	0.04	0.05	‡	‡
B1INFLADV (Teaching influences, as of B&B:16/17 interview: possibilities for career advancement)				
Before imputation				
Mean percent relative bias across characteristics	42.44	43.67	48.34	90.61
Median percent relative bias across characteristics	26.01	25.78	32.28	60.68
Percentage of characteristics with significant bias	53.33	50.62	51.22	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	2.58	4.04	1.24	‡
Effect size for difference[2]	‡	‡	‡	‡
B1INFLCONT (Teaching influences, as of B&B:16/17 interview: Opportunity to contribute to society)				
Before imputation				
Mean percent relative bias across characteristics	42.46	43.70	48.34	90.61
Median percent relative bias across characteristics	26.50	26.15	32.28	60.68
Percentage of characteristics with significant bias	53.33	49.38	51.22	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	0.32	0.01	0.71	2.38*
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1INFLFIN (Teaching influences, as of B&B:16/17 interview: Financial compensation)				
Before imputation				
Mean percent relative bias across characteristics	42.46	43.70	48.34	90.61
Median percent relative bias across characteristics	26.50	26.15	32.28	60.68
Percentage of characteristics with significant bias	53.33	49.38	51.22	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	0.59	0.41	1.22	‡
Effect size for difference[2]	0.01	0.01	‡	‡
B1INFLKIDS (Teaching influences, as of B&B:16/17 interview: Working with kids)				
Before imputation				
Mean percent relative bias across characteristics	42.46	43.70	48.38	90.61
Median percent relative bias across characteristics	26.51	26.15	32.23	60.68
Percentage of characteristics with significant bias	53.33	49.38	51.22	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	0.38	1.15	1.03	1.53
Effect size for difference[2]	‡	‡	‡	‡
B1INFLPRES (Teaching influences, as of B&B:16/17 interview: Prestige of occupation)				
Before imputation				
Mean percent relative bias across characteristics	42.46	43.70	48.34	90.61
Median percent relative bias across characteristics	26.50	26.15	32.28	60.68
Percentage of characteristics with significant bias	53.33	49.38	51.22	45.07
Median effect size	0.27	0.25	0.38	0.59
After imputation				
Difference between pre- and post-imputation means[1]	2.11	2.37	1.98	‡
Effect size for difference[2]	‡	‡	‡	‡
B1INFWK (Had informal work between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.29	10.95	10.99
Median percent relative bias across characteristics	6.48	6.10	7.81	6.32
Percentage of characteristics with significant bias	60.87	49.41	48.81	16.46
Median effect size	0.06	0.07	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.01	0.21	0.31	0.88*
Effect size for difference[2]	#	#	#	0.02
B1INFWKEN (Earnings from informal work, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	27.65	26.43	29.39	35.16
Median percent relative bias across characteristics	18.51	16.58	21.99	22.48
Percentage of characteristics with significant bias	48.91	43.53	46.43	24.05
Median effect size	0.19	0.18	0.19	0.27
After imputation				
Difference between pre- and post-imputation means[1]	5.77	8.60	0.67	3.59
Effect size for difference[2]	0.02	0.03	#	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LANGS (Second language, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.71	10.68	11.14	10.12
Median percent relative bias across characteristics	6.14	6.42	8.11	5.86
Percentage of characteristics with significant bias	55.43	51.19	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.82	0.85	0.96	0.85
Effect size for difference[2]	‡	‡	‡	‡
B1LEVRCNT (Most recent school, within 12 months after BA completion: Level)				
Before imputation				
Mean percent relative bias across characteristics	44.85	46.14	51.58	94.36
Median percent relative bias across characteristics	26.94	29.75	35.02	53.57
Percentage of characteristics with significant bias	54.44	51.85	49.37	44.29
Median effect size	0.28	0.27	0.41	0.48
After imputation				
Difference between pre- and post-imputation means[1]	2.22	2.57	4.30	11.34
Effect size for difference[2]	0.02	‡	0.06	‡
B1LGBTQ (Sexual orientation, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.83	10.99	11.63	10.18
Median percent relative bias across characteristics	6.25	6.98	8.50	5.85
Percentage of characteristics with significant bias	55.43	49.41	51.19	12.82
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.17	0.14	0.16	1.04
Effect size for difference[2]	0.01	‡	‡	‡
B1LICREQ1ST (First job, within 12 months after BA completion: License required for work)				
Before imputation				
Mean percent relative bias across characteristics	10.92	11.45	12.47	12.91
Median percent relative bias across characteristics	8.03	7.66	8.61	8.18
Percentage of characteristics with significant bias	64.13	50.59	48.24	18.99
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.89	1.37	0.15	0.39
Effect size for difference[2]	0.01	0.02	#	#
B1LICREQRCNT (Most recent job, within 12 months after BA completion: License required for work)				
Before imputation				
Mean percent relative bias across characteristics	11.02	11.51	12.45	13.03
Median percent relative bias across characteristics	7.66	7.57	8.65	8.60
Percentage of characteristics with significant bias	63.04	49.41	49.41	20.25
Median effect size	0.07	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.80	1.38	0.06	1.48
Effect size for difference[2]	0.01	0.02	#	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LKCOL (Job search activities, between BA completion and June 2017: Talked to coworkers or mentors)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.15	0.01	0.20	1.43
Effect size for difference[2]	#	#	#	0.01
B1LKEMA (Job search activities, between BA completion and June 2017: Used an employment agency)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.08	0.39	0.39
Effect size for difference[2]	#	#	#	#
B1LKFAC (Job search activities, between BA completion and June 2017: Talked to faculty members or alumni)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	1.15	0.81	2.58*	2.21
Effect size for difference[2]	0.01	0.01	0.03	0.02
B1LKFAM (Job search activities, between BA completion and June 2017: Talked to friends or family members)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	1.48	1.69	0.99	1.91
Effect size for difference[2]	0.02	0.02	0.01	0.02
B1LKINT (Job search activities, between BA completion and June 2017: Completed an internship)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.63	0.93	0.12	0.15
Effect size for difference[2]	0.01	0.02	#	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LKONL (Job search activities, between BA completion and June 2017: Searched online job postings)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.56	0.49	0.59	1.18
Effect size for difference[2]	0.01	0.01	0.01	0.02
B1LKOTH (Job search activities, between BA completion and June 2017: Other)				
Before imputation				
Mean percent relative bias across characteristics	13.57	14.68	15.39	13.36
Median percent relative bias across characteristics	11.61	10.66	12.48	9.78
Percentage of characteristics with significant bias	55.43	52.38	56.63	12.82
Median effect size	0.10	0.11	0.11	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.53	0.79	0.17	0.51
Effect size for difference[2]	0.01	0.01	#	0.01
B1LKWKM00 (Looked for work, month of BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.34	0.09	0.68	1.24
Effect size for difference[2]	#	#	0.01	0.01
B1LKWKM01 (Looked for work 1 month after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.42	0.41	0.46	0.26
Effect size for difference[2]	#	#	0.01	#
B1LKWKM02 (Looked for work 2 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.22	0.41	0.23	0.38
Effect size for difference[2]	#	#	#	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LKWKM03 (Looked for work 3 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.58	0.73	0.14	0.90
Effect size for difference[2]	0.01	0.01	#	0.01
B1LKWKM04 (Looked for work 4 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.50	0.04	1.14	1.79
Effect size for difference[2]	0.01	#	0.01	0.02
B1LKWKM05 (Looked for work 5 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.49	0.20	0.62	2.65*
Effect size for difference[2]	0.01	#	0.01	0.03
B1LKWKM06 (Looked for work 6 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.48	0.27	0.55	1.97
Effect size for difference[2]	0.01	#	0.01	0.02
B1LKWKM07 (Looked for work 7 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.75	0.35	1.15	2.45
Effect size for difference[2]	0.01	#	0.01	0.03

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LKWKM08 (Looked for work 8 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.25	0.06	0.34	1.54
Effect size for difference[2]	#	#	#	0.02
B1LKWKM09 (Looked for work 9 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.21	0.07	0.46	1.73
Effect size for difference[2]	#	#	0.01	0.02
B1LKWKM10 (Looked for work 10 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.56	0.31	0.85	1.35
Effect size for difference[2]	0.01	#	0.01	0.01
B1LKWKM11 (Looked for work 11 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.32	0.40	0.18	1.69
Effect size for difference[2]	#	#	#	0.02
B1LKWKM12 (Looked for work 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.63	10.81	11.20	9.98
Median percent relative bias across characteristics	6.58	7.23	8.23	5.93
Percentage of characteristics with significant bias	57.61	50.00	51.81	14.10
Median effect size	0.07	0.07	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.08	0.18	0.30	1.48
Effect size for difference[2]	#	#	#	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LNGCAR (Used non-English language in a job since BA completion, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	17.60	21.93	18.98	19.65
Median percent relative bias across characteristics	12.56	17.28	12.48	9.88
Percentage of characteristics with significant bias	53.26	52.94	43.53	15.38
Median effect size	0.12	0.15	0.11	0.11
After imputation				
Difference between pre- and post-imputation means[1]	0.49	1.44	1.63	3.54
Effect size for difference[2]	#	0.01	0.02	0.04
B1LOCRCNT (Most recent school, within 12 months after BA completion: Locale)				
Before imputation				
Mean percent relative bias across characteristics	44.82	46.02	51.60	94.36
Median percent relative bias across characteristics	26.58	30.16	34.78	53.57
Percentage of characteristics with significant bias	54.44	50.62	49.37	44.29
Median effect size	0.28	0.26	0.40	0.48
After imputation				
Difference between pre- and post-imputation means[1]	3.71	6.83	10.10	‡
Effect size for difference[2]	‡	‡	‡	‡
B1LSAT (Took LSAT, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.81	11.02	9.70
Median percent relative bias across characteristics	6.50	5.99	8.26	5.92
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.12	0.01	0.37	#
Effect size for difference[2]	#	‡	0.01	‡
B1LVCAR (Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with teaching as a career or wanted to pursue another career)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	0.13	1.27	1.96*	0.35
Effect size for difference[2]	#	‡	‡	‡
B1LVCOND (Reasons left teaching, as of B&B:16/17 interview: dissatisfied with workplace conditions)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	2.96*	2.29*	0.13	0.17
Effect size for difference[2]	0.04	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LVLAID (Reasons left teaching, as of B&B:16/17 interview: Laid off)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	0.49	0.46	0.53	0.22
Effect size for difference[2]	‡	‡	‡	‡
B1LVOTH (Reasons left teaching, as of B&B:16/17 interview: Other)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	2.61	2.40	3.69	1.06
Effect size for difference[2]	0.03	0.02	0.04	0.01
B1LVPERS (Reasons left teaching, as of B&B:16/17 interview: Personal life reasons)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	0.73	2.62	1.33	0.24
Effect size for difference[2]	0.01	0.03	‡	‡
B1LVSAL (Reasons left teaching, as of B&B:16/17 interview: Inadequate salary and/or benefits)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	1.46	0.98	1.02	1.52
Effect size for difference[2]	0.02	‡	‡	‡
B1LVSCHL (Reasons left teaching, as of B&B:16/17 interview: Returned to school)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	0.63	2.41	1.94	1.26
Effect size for difference[2]	0.01	0.03	0.02	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1LVTRSF (Reasons left teaching, as of B&B:16/17 interview: Involuntarily transferred)				
Before imputation				
Mean percent relative bias across characteristics	31.22	36.01	29.87	40.63
Median percent relative bias across characteristics	23.38	23.41	21.01	29.32
Percentage of characteristics with significant bias	51.09	42.35	37.35	30.77
Median effect size	0.21	0.23	0.23	0.23
After imputation				
Difference between pre- and post-imputation means[1]	0.14	0.12	0.19	0.16
Effect size for difference[2]	‡	‡	‡	‡
B1MAJCHO (Satisfaction with choice of undergraduate major, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.85	11.03	9.12
Median percent relative bias across characteristics	6.45	6.01	8.28	5.36
Percentage of characteristics with significant bias	56.52	50.00	50.60	16.67
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	1.11*	1.39*	0.36	1.62
Effect size for difference[2]	‡	‡	‡	‡
B1MARCHB (Family status 12 months after BA completion (Considering all dependents))				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.60	11.75	9.66
Median percent relative bias across characteristics	6.64	6.77	8.62	5.57
Percentage of characteristics with significant bias	57.61	51.19	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	3.24*	1.78*	4.17*	5.20*
Effect size for difference[2]	0.03	0.02	0.05	0.05
B1MARRM00 (Marital status, month of BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.89	0.16	1.84*	1.71*
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM01 (Marital status, 1 month after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.92	0.18	1.93*	1.70*
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1MARRM02 (Marital status, 2 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.83	0.10	1.85*	1.69*
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM03 (Marital status, 3 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.93	0.14	2.07*	1.67
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM04 (Marital status, 4 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.98	0.24	1.98*	1.83*
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM05 (Marital status, 5 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.02	0.25	2.07*	1.88*
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM06 (Marital status, 6 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.97	0.40	2.02*	1.83*
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1MARRM07 (Marital status, 7 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.03*	0.51	2.02*	1.80*
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM08 (Marital status, 8 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.01	0.54	1.96*	1.64
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM09 (Marital status, 9 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.98	0.51	1.89*	1.70
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM10 (Marital status, 10 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.95	0.34	2.17*	1.75
Effect size for difference[2]	‡	‡	‡	‡
B1MARRM11 (Marital status, 11 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.90	0.23	2.13*	1.75
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1MARRM12 (Marital status, 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.85	11.04	9.80
Median percent relative bias across characteristics	6.58	5.89	8.33	5.85
Percentage of characteristics with significant bias	57.61	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.79	0.20	2.06*	1.77
Effect size for difference[2]	‡	‡	‡	‡
B1MATRCNT (Most recent teaching job, within 12 months after BA completion: taught math/computer science)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.97	0.04	1.71	1.77
Effect size for difference[2]	0.01	‡	‡	‡
B1MCAT (Took MCAT, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.81	11.02	9.70
Median percent relative bias across characteristics	6.50	5.99	8.26	5.92
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.04	0.10	0.10	0.46*
Effect size for difference[2]	#	‡	#	‡
B1MTGAMT (Monthly rent or mortgage payment amount, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.79	10.75	11.23	9.94
Median percent relative bias across characteristics	6.39	6.35	8.23	6.19
Percentage of characteristics with significant bias	56.52	48.81	50.60	11.54
Median effect size	0.07	0.07	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.08	0.76	0.61	2.56*
Effect size for difference[2]	#	0.01	0.01	0.03
B1NDCWK (Enrolled in non-degree coursework between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.73	10.86	11.06	9.74
Median percent relative bias across characteristics	6.59	6.15	8.28	5.91
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.12	0.11	0.06	0.57
Effect size for difference[2]	#	#	#	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1NEMPBW (Spent time taking a break from work during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.98	23.14	27.67	28.44
Median percent relative bias across characteristics	14.09	16.22	15.66	18.08
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	1.09	0.29	4.22	0.42
Effect size for difference[2]	0.01	#	0.05	0.01
B1NEMPCC (Spent time caring for children during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.98	23.14	27.67	28.44
Median percent relative bias across characteristics	14.09	16.22	15.66	18.08
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	1.20	1.18	1.03	1.25
Effect size for difference[2]	0.02	0.02	0.02	0.01
B1NEMPCF (Spent time caring for family during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.98	23.14	27.67	28.44
Median percent relative bias across characteristics	14.09	16.22	15.66	18.08
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	0.66	0.34	1.29	0.62
Effect size for difference[2]	0.01	0.01	0.02	0.01
B1NEMPHI (Spent time with health issue during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.98	23.14	27.67	28.44
Median percent relative bias across characteristics	14.09	16.22	15.66	18.08
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	0.20	0.55	0.77	1.11
Effect size for difference[2]	#	0.01	0.01	0.02
B1NEMPLW (Spent time looking for work during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.98	23.14	27.67	28.44
Median percent relative bias across characteristics	14.09	16.22	15.66	18.10
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	1.43	2.14	2.29	7.32*
Effect size for difference[2]	0.01	0.02	0.02	0.08

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1NEMPSE (Spent time doing something else during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.98	23.14	27.67	28.44
Median percent relative bias across characteristics	14.09	16.22	15.66	18.08
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	0.32	1.28	2.02	1.59
Effect size for difference[2]	#	0.01	0.02	0.02
B1NEMPUI (Spent time in an unpaid internship during non-working and non-enrollment spans, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	22.99	23.05	27.67	28.44
Median percent relative bias across characteristics	13.99	16.59	15.66	18.08
Percentage of characteristics with significant bias	45.65	38.10	49.40	21.52
Median effect size	0.15	0.16	0.22	0.14
After imputation				
Difference between pre- and post-imputation means[1]	0.14	0.79	1.18	1.60
Effect size for difference[2]	#	0.01	0.02	0.04
B1NPCONT (Breaks in attendance from BA degree-granting institution)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.86	11.08	9.75
Median percent relative bias across characteristics	6.52	5.98	8.21	5.99
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.28	0.07	1.23*	1.12
Effect size for difference[2]	#	#	0.02	0.02
B1NPOMAJ (Original BA degree major)				
Before imputation				
Mean percent relative bias across characteristics	20.52	18.47	21.83	35.25
Median percent relative bias across characteristics	17.42	16.84	17.77	18.48
Percentage of characteristics with significant bias	64.84	58.54	57.50	11.69
Median effect size	0.16	0.13	0.19	0.19
After imputation				
Difference between pre- and post-imputation means[1]	2.17	3.47	‡	‡
Effect size for difference[2]	‡	‡	‡	‡
B1NSF19B (Ever had a job that was closely related to major or field of study, within 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	10.36	10.48	10.75	12.70
Median percent relative bias across characteristics	7.21	6.96	7.37	8.40
Percentage of characteristics with significant bias	61.54	51.19	50.00	20.25
Median effect size	0.07	0.07	0.08	0.09
After imputation				
Difference between pre- and post-imputation means[1]	2.05*	2.01*	1.74*	4.08*
Effect size for difference[2]	0.03	0.03	0.02	0.05

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1NSF19B1ST (First job, within 12 months after BA completion: Related to bachelor's degree program)				
Before imputation				
Mean percent relative bias across characteristics	10.98	11.47	12.69	13.08
Median percent relative bias across characteristics	8.00	7.57	8.66	8.02
Percentage of characteristics with significant bias	64.13	49.41	48.24	18.99
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	1.51*	1.16	1.68	4.37*
Effect size for difference[2]	0.02	0.01	0.02	0.05
B1NSF19BRCNT (Most recent job, within 12 months after BA completion: Related to BA degree program)				
Before imputation				
Mean percent relative bias across characteristics	11.07	11.55	12.60	13.11
Median percent relative bias across characteristics	7.63	7.42	8.65	8.72
Percentage of characteristics with significant bias	63.04	49.41	49.41	20.25
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.47*	2.17*	1.24	1.28
Effect size for difference[2]	0.02	0.03	0.01	0.01
B1NSFA1ST (First job, within 12 months after BA completion: Requires a bachelor's degree)				
Before imputation				
Mean percent relative bias across characteristics	11.04	11.56	12.72	13.09
Median percent relative bias across characteristics	7.95	7.77	8.66	8.03
Percentage of characteristics with significant bias	61.96	49.41	48.24	18.99
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	3.37*	3.75*	2.77*	3.72*
Effect size for difference[2]	0.04	0.04	0.03	0.04
B1NSFARCNT (Most recent job, within 12 months after BA completion: Requires a BA degree)				
Before imputation				
Mean percent relative bias across characteristics	11.08	11.63	12.68	13.12
Median percent relative bias across characteristics	7.78	7.59	8.83	8.69
Percentage of characteristics with significant bias	63.04	51.76	49.41	18.99
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.49	0.51	0.66	0.89
Effect size for difference[2]	#	0.01	0.01	0.01
B1NUMCRD (Number of credit cards, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.76	11.00	11.54	9.76
Median percent relative bias across characteristics	6.29	7.39	8.47	6.00
Percentage of characteristics with significant bias	56.52	50.59	51.19	8.97
Median effect size	0.07	0.07	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.58	0.89	0.39	1.27
Effect size for difference[2]	0.01	0.01	#	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1NUMINST (Number of institutions attended as an undergraduate student before BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.82	11.03	11.08	9.78
Median percent relative bias across characteristics	7.34	7.13	8.21	6.03
Percentage of characteristics with significant bias	57.61	52.38	51.81	12.82
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.83*	1.74*	0.64	1.65*
Effect size for difference[2]	0.02	0.03	0.01	0.03
B1NUMNCD (Number of non-child dependents, 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	9.67	10.62	11.77	9.57
Median percent relative bias across characteristics	6.65	6.76	8.67	5.44
Percentage of characteristics with significant bias	57.61	50.00	52.94	8.97
Median effect size	0.06	0.07	0.08	0.05
After imputation				
Difference between pre- and post-imputation means[1]	0.06	0.06	0.44	0.44
Effect size for difference[2]	‡	‡	‡	‡
B1NUMPRCNT (Most recent employer, within 12 months after BA completion: Number of employees)				
Before imputation				
Mean percent relative bias across characteristics	11.04	11.58	12.51	12.83
Median percent relative bias across characteristics	7.79	7.55	8.50	8.38
Percentage of characteristics with significant bias	61.96	47.06	49.41	13.92
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.73*	1.75*	2.02	2.61*
Effect size for difference[2]	0.02	0.02	0.02	0.04
B1NUTRNACC (Successfully transferred credits to BA degree-granting institution)				
Before imputation				
Mean percent relative bias across characteristics	15.97	16.29	19.69	17.10
Median percent relative bias across characteristics	11.90	11.91	15.61	12.22
Percentage of characteristics with significant bias	61.54	55.42	51.85	17.95
Median effect size	0.13	0.12	0.16	0.10
After imputation				
Difference between pre- and post-imputation means[1]	0.61	0.59	0.22	6.65*
Effect size for difference[2]	‡	‡	‡	‡
B1NUTRNCRD (Ever attempted to transfer credits to BA degree-granting institution)				
Before imputation				
Mean percent relative bias across characteristics	15.62	16.05	19.19	16.12
Median percent relative bias across characteristics	11.89	12.17	15.46	12.08
Percentage of characteristics with significant bias	63.74	57.83	56.79	24.36
Median effect size	0.12	0.12	0.16	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.29	0.07	0.36	0.45
Effect size for difference[2]	0.01	‡	‡	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1OCC33RCNT (Occupation, current/most recent within job 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	10.18	10.67	10.95	11.76
Median percent relative bias across characteristics	7.09	7.46	7.43	6.68
Percentage of characteristics with significant bias	63.74	51.19	48.19	21.79
Median effect size	0.07	0.07	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	2.77*	3.87*	2.78*	3.61*
Effect size for difference[2]	‡	‡	‡	‡
B1OTHRCNT (Most recent teaching job, within 12 months after BA completion: Taught other unspecified subject)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.18	0.15	0.09	1.86*
Effect size for difference[2]	‡	‡	‡	‡
B1OTREL (Household composition: Living with other relatives, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.92	11.03	9.77
Median percent relative bias across characteristics	6.52	6.12	8.14	6.01
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.09	0.19	0.22	0.48
Effect size for difference[2]	#	#	#	0.01
B1PARIL (Household composition: Living with parents or in-laws, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.92	11.03	9.77
Median percent relative bias across characteristics	6.52	6.12	8.14	6.01
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.09*	1.12	1.26	0.31
Effect size for difference[2]	0.01	0.01	0.01	#
B1PAY1ST (First job, within 12 months after BA completion: Satisfaction with compensation)				
Before imputation				
Mean percent relative bias across characteristics	11.00	11.54	12.67	13.07
Median percent relative bias across characteristics	7.98	7.68	8.72	8.38
Percentage of characteristics with significant bias	64.13	48.24	49.41	18.99
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	1.29	1.17	1.56	1.96*
Effect size for difference[2]	0.01	0.01	0.02	0.02

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1PAYRCNT (Most recent job, within 12 months after BA completion: Satisfaction with compensation)				
Before imputation				
Mean percent relative bias across characteristics	11.11	11.64	12.60	13.09
Median percent relative bias across characteristics	7.69	7.53	8.72	8.43
Percentage of characteristics with significant bias	61.96	49.41	49.41	17.72
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	1.19	1.95	0.57	3.39*
Effect size for difference[2]	0.01	0.02	0.01	0.04
B1PIPLN (Teacher pipeline status, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.91	11.07	11.42	10.26
Median percent relative bias across characteristics	6.67	7.32	8.81	5.99
Percentage of characteristics with significant bias	57.61	54.12	51.81	14.10
Median effect size	0.07	0.08	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	3.87*	4.36*	3.89*	2.47*
Effect size for difference[2]	‡	‡	‡	‡
B1PMINRCNT (Most recent school, within 12 months after BA completion: Percent minority)				
Before imputation				
Mean percent relative bias across characteristics	45.54	45.86	52.40	94.36
Median percent relative bias across characteristics	26.66	29.20	38.17	53.57
Percentage of characteristics with significant bias	51.11	53.75	46.84	44.29
Median effect size	0.28	0.28	0.41	0.48
After imputation				
Difference between pre- and post-imputation means[1]	0.92	0.16	1.07	8.73
Effect size for difference[2]	0.01	#	0.02	0.17
B1POSRCNT (Most recent teaching job, within 12 months after BA completion: Teaching position type)				
Before imputation				
Mean percent relative bias across characteristics	38.76	39.09	40.63	74.53
Median percent relative bias across characteristics	26.06	24.62	27.28	52.07
Percentage of characteristics with significant bias	53.85	50.60	43.90	52.00
Median effect size	0.24	0.25	0.28	0.53
After imputation				
Difference between pre- and post-imputation means[1]	4.74	7.32	3.48	8.53
Effect size for difference[2]	‡	‡	‡	‡
B1PRACT (Participated in a practicum during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.75	10.99	11.14	9.77
Median percent relative bias across characteristics	6.56	7.04	8.29	5.94
Percentage of characteristics with significant bias	57.61	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.54	0.37	1.05	0.01
Effect size for difference[2]	0.01	#	0.01	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1PREFT1ST (First job, within 12 months after BA completion: Prefer to work more hours)				
Before imputation				
Mean percent relative bias across characteristics	24.38	25.55	28.04	28.31
Median percent relative bias across characteristics	15.31	15.88	20.30	17.59
Percentage of characteristics with significant bias	59.34	53.49	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	1.61	1.21	2.02	11.22*
Effect size for difference[2]	0.02	0.01	0.02	0.11
B1PREFTRCNT (Most recent job, within 12 months after BA completion: Prefer to work more hours)				
Before imputation				
Mean percent relative bias across characteristics	29.97	30.68	32.98	38.41
Median percent relative bias across characteristics	17.93	18.35	23.75	24.69
Percentage of characteristics with significant bias	60.44	54.76	49.40	26.92
Median effect size	0.22	0.22	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	0.72	2.13	0.63	17.50*
Effect size for difference[2]	0.01	0.02	0.01	0.17
B1PREKRCNT (Most recent teaching job, within 12 months after BA completion: Taught early childhood education (preK))				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	1.09	1.81	0.32	‡
Effect size for difference[2]	0.01	0.02	‡	‡
B1PRSBRCNT (Most recent teaching job, within 12 months after BA completion: felt prepared to teach all subjects taught)				
Before imputation				
Mean percent relative bias across characteristics	42.37	44.27	47.91	91.08
Median percent relative bias across characteristics	26.73	27.06	38.96	60.17
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.29	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	2.89	3.53	0.74	3.56*
Effect size for difference[2]	0.04	‡	‡	‡
B1PUPRRCNT (Most recent school, within 12 months after BA completion: Sector (public/private))				
Before imputation				
Mean percent relative bias across characteristics	44.82	46.02	51.60	94.36
Median percent relative bias across characteristics	26.58	30.16	34.78	53.57
Percentage of characteristics with significant bias	54.44	50.62	49.37	44.29
Median effect size	0.28	0.26	0.40	0.48
After imputation				
Difference between pre- and post-imputation means[1]	1.93	0.62	0.08	31.22*
Effect size for difference[2]	‡	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1REC (Involved in intramural or recreational sports during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.73	10.88	11.08	9.77
Median percent relative bias across characteristics	6.60	6.13	8.06	6.07
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.48	0.02	0.56	4.02*
Effect size for difference[2]	#	‡	0.01	0.05
B1RETEMP (Have an employer-based retirement account, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.70	11.20	11.28	10.41
Median percent relative bias across characteristics	6.26	7.42	7.76	6.65
Percentage of characteristics with significant bias	54.35	47.67	47.62	15.19
Median effect size	0.06	0.07	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.33	0.40	0.41	0.82
Effect size for difference[2]	#	#	#	0.01
B1RETNON (Have a non-employer-based retirement account, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.87	11.14	11.24	10.82
Median percent relative bias across characteristics	5.97	7.58	7.99	6.63
Percentage of characteristics with significant bias	55.43	44.71	44.05	13.92
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.05	0.51	0.80	1.93*
Effect size for difference[2]	#	0.01	0.01	0.02
B1RLTINT1ST (First job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op)				
Before imputation				
Mean percent relative bias across characteristics	10.47	10.96	11.50	12.32
Median percent relative bias across characteristics	6.88	7.36	8.22	7.28
Percentage of characteristics with significant bias	61.54	54.76	50.60	24.05
Median effect size	0.07	0.07	0.08	0.09
After imputation				
Difference between pre- and post-imputation means[1]	12.96*	12.96*	11.27*	12.26*
Effect size for difference[2]	0.13	0.14	0.12	0.13
B1RLTINTRCNT (Most recent job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op)				
Before imputation				
Mean percent relative bias across characteristics	10.50	10.91	11.44	12.48
Median percent relative bias across characteristics	7.20	6.89	7.96	7.33
Percentage of characteristics with significant bias	60.44	51.19	50.60	24.05
Median effect size	0.07	0.07	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	12.75*	12.71*	11.11*	12.39*
Effect size for difference[2]	0.13	0.14	0.12	0.13

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1RSEMP (Reason for non-degree coursework between BA completion and June 2017: Needed for employment)				
Before imputation				
Mean percent relative bias across characteristics	26.52	31.93	28.43	37.96
Median percent relative bias across characteristics	14.79	13.90	17.73	28.94
Percentage of characteristics with significant bias	28.26	20.24	31.71	12.82
Median effect size	0.12	0.15	0.19	0.20
After imputation				
Difference between pre- and post-imputation means[1]	1.60	1.81	0.89	1.44
Effect size for difference[2]	0.02	‡	‡	‡
B1RSGOAL (Reason for non-degree coursework between BA completion and June 2017: Career goals)				
Before imputation				
Mean percent relative bias across characteristics	26.52	31.93	28.43	37.96
Median percent relative bias across characteristics	14.79	13.90	17.73	28.94
Percentage of characteristics with significant bias	28.26	20.24	31.71	12.82
Median effect size	0.12	0.15	0.19	0.20
After imputation				
Difference between pre- and post-imputation means[1]	1.57	2.78	1.81	‡
Effect size for difference[2]	0.02	0.03	0.02	‡
B1RSLTED (Reason for non-degree coursework between BA completion and June 2017: Education goals)				
Before imputation				
Mean percent relative bias across characteristics	26.52	31.93	28.43	37.96
Median percent relative bias across characteristics	14.79	13.90	17.73	28.94
Percentage of characteristics with significant bias	28.26	20.24	31.71	12.82
Median effect size	0.12	0.15	0.19	0.20
After imputation				
Difference between pre- and post-imputation means[1]	2.27	1.89	1.16	3.49*
Effect size for difference[2]	0.02	‡	‡	‡
B1RSOTH (Reason for non-degree coursework between BA completion and June 2017: Other)				
Before imputation				
Mean percent relative bias across characteristics	26.52	31.93	28.43	37.96
Median percent relative bias across characteristics	14.79	13.90	17.73	28.94
Percentage of characteristics with significant bias	28.26	20.24	31.71	12.82
Median effect size	0.12	0.15	0.19	0.20
After imputation				
Difference between pre- and post-imputation means[1]	0.63	0.82	0.43	0.56
Effect size for difference[2]	‡	‡	‡	‡
B1RSPERS (Reason for non-degree coursework between BA completion and June 2017: Personal enrichment)				
Before imputation				
Mean percent relative bias across characteristics	26.52	31.93	28.43	37.96
Median percent relative bias across characteristics	14.79	13.90	17.73	28.94
Percentage of characteristics with significant bias	28.26	20.24	31.71	12.82
Median effect size	0.12	0.15	0.19	0.20
After imputation				
Difference between pre- and post-imputation means[1]	3.23	3.66	2.03	‡
Effect size for difference[2]	0.03	0.04	0.02	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1SAMESTATE (Ever employed in same state as bachelor's degree institution, within 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	11.26	12.33	11.93	12.50
Median percent relative bias across characteristics	7.21	8.28	7.62	8.88
Percentage of characteristics with significant bias	63.74	50.59	45.88	17.72
Median effect size	0.08	0.08	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	11.70*	9.24*	12.82*	7.07*
Effect size for difference[2]	0.13	0.13	0.14	0.07
B1SAMESTATE1ST (First employer, within 12 months after BA completion: Located in the same state as bachelor's degree-granting institution)				
Before imputation				
Mean percent relative bias across characteristics	9.80	10.11	10.53	11.61
Median percent relative bias across characteristics	6.69	6.48	7.01	7.05
Percentage of characteristics with significant bias	57.14	50.00	48.19	20.51
Median effect size	0.07	0.07	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	3.35*	3.04*	3.69*	0.28
Effect size for difference[2]	0.04	0.04	0.04	#
B1SAMESTATERCNT (Most recent employer, within 12 months after BA completion: Located in the same state as BA-granting institution)				
Before imputation				
Mean percent relative bias across characteristics	11.80	12.72	13.21	13.60
Median percent relative bias across characteristics	7.73	8.81	9.06	9.52
Percentage of characteristics with significant bias	58.70	49.41	49.41	22.78
Median effect size	0.08	0.08	0.08	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.70	0.24	1.06	9.99*
Effect size for difference[2]	0.01	#	0.01	0.10
B1SCIRCNT (Most recent teaching job, within 12 months after BA completion: Taught natural sciences)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.38	0.71	0.60	2.16
Effect size for difference[2]	0.01	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1SEC1ST (First job, within 12 months after BA completion: Satisfaction with job security)				
Before imputation				
Mean percent relative bias across characteristics	10.97	11.58	12.65	13.08
Median percent relative bias across characteristics	7.77	7.67	8.75	8.00
Percentage of characteristics with significant bias	61.96	49.41	49.41	18.99
Median effect size	0.08	0.07	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	2.98*	3.42*	2.72*	1.85*
Effect size for difference[2]	0.03	0.04	0.03	0.03
B1SECERCNT (Most recent teaching job, within 12 months after BA completion: Taught secondary education)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.06	0.05	0.25	2.29*
Effect size for difference[2]	‡	‡	‡	‡
B1SECRCNT (Most recent job, within 12 months after BA completion: Satisfaction with job security)				
Before imputation				
Mean percent relative bias across characteristics	11.07	11.65	12.55	13.11
Median percent relative bias across characteristics	7.69	7.51	8.67	8.64
Percentage of characteristics with significant bias	59.78	49.41	49.41	18.99
Median effect size	0.08	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.57	0.36	0.56	3.07*
Effect size for difference[2]	0.01	#	0.01	0.04
B1SECT (First postsecondary institution control and level)				
Before imputation				
Mean percent relative bias across characteristics	10.02	11.10	11.26	10.31
Median percent relative bias across characteristics	7.37	7.18	8.49	6.04
Percentage of characteristics with significant bias	58.70	52.38	51.81	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.03	10.56*	18.23*	16.98*
Effect size for difference[2]	‡	‡	‡	‡
B1SEDRCNT (Most recent teaching job, within 12 months after BA completion: Taught special education)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.14	0.43	0.83	1.76
Effect size for difference[2]	#	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1SELLPO (Financial result if respondent were to sell all major possessions, turn all investments and other assets into cash, and pay off all debts, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.96	10.98	11.59	10.70
Median percent relative bias across characteristics	6.66	7.07	8.21	7.07
Percentage of characteristics with significant bias	56.52	50.00	51.19	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.05	1.04	1.16	1.98*
Effect size for difference[2]	0.01	0.01	0.01	0.02
B1SFRBFGF (Sharing financial responsibilities with boyfriend or girlfriend, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.21	10.48	10.10	9.64
Median percent relative bias across characteristics	5.97	7.16	7.18	6.07
Percentage of characteristics with significant bias	59.34	53.01	47.56	16.67
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	3.13*	3.29*	2.87*	3.61*
Effect size for difference[2]	0.05	0.05	0.05	0.06
B1SFRFRRM (Sharing financial responsibilities with roommates, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.21	10.48	10.10	9.64
Median percent relative bias across characteristics	5.97	7.16	7.18	6.07
Percentage of characteristics with significant bias	59.34	53.01	47.56	16.67
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	1.03*	0.92	1.21*	1.11*
Effect size for difference[2]	0.02	0.02	0.02	0.03
B1SFROTHERS (Sharing financial responsibilities with others, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.21	10.48	10.10	9.64
Median percent relative bias across characteristics	5.97	7.16	7.18	6.07
Percentage of characteristics with significant bias	59.34	53.01	47.56	16.67
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	0.08	0.22	0.10*	0.02
Effect size for difference[2]	#	0.01	‡	‡
B1SFRPARENTS (Sharing financial responsibilities with parents, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.21	10.48	10.10	9.64
Median percent relative bias across characteristics	5.97	7.16	7.18	6.07
Percentage of characteristics with significant bias	59.34	53.01	47.56	16.67
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	1.48*	1.39*	1.44*	1.94*
Effect size for difference[2]	0.02	0.02	0.02	0.03

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1SFRRELATIVES (Sharing financial responsibilities with siblings, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.21	10.48	10.10	9.64
Median percent relative bias across characteristics	5.97	7.16	7.18	6.07
Percentage of characteristics with significant bias	59.34	53.01	47.56	16.67
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	0.34	0.53	0.08	0.10
Effect size for difference[2]	0.01	0.01	#	#
B1SFRSPOUSE (Sharing financial responsibilities with spouse, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.21	10.48	10.10	9.64
Median percent relative bias across characteristics	5.97	7.16	7.18	6.07
Percentage of characteristics with significant bias	59.34	53.01	47.56	16.67
Median effect size	0.07	0.08	0.07	0.05
After imputation				
Difference between pre- and post-imputation means[1]	6.85*	6.60*	5.02*	7.77*
Effect size for difference[2]	0.07	0.08	0.06	0.08
B1SOCRCNT (Most recent teaching job, within 12 months after BA completion: Taught social sciences)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	1.76	3.38	0.62	2.04
Effect size for difference[2]	0.03	0.06	‡	‡
B1SPAMT (Spouse or domestic partner's student loans: Amount borrowed, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	26.87	25.44	31.76	22.28
Median percent relative bias across characteristics	19.04	18.80	22.69	15.09
Percentage of characteristics with significant bias	63.74	53.01	50.62	15.38
Median effect size	0.17	0.18	0.22	0.13
After imputation				
Difference between pre- and post-imputation means[1]	5.01*	2.89	7.16	10.56*
Effect size for difference[2]	0.04	0.02	0.05	0.08
B1SPCOL (Spouse or domestic partner attended college or graduate school, 2016-17 school year)				
Before imputation				
Mean percent relative bias across characteristics	25.77	25.06	30.01	19.76
Median percent relative bias across characteristics	20.32	19.48	23.33	11.84
Percentage of characteristics with significant bias	67.03	60.24	63.75	17.95
Median effect size	0.18	0.19	0.22	0.11
After imputation				
Difference between pre- and post-imputation means[1]	0.09	0.18	0.77	0.47
Effect size for difference[2]	#	#	0.01	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1SPEMP (Spouse or domestic partner ever employed, 2016 calendar year)				
Before imputation				
Mean percent relative bias across characteristics	25.15	24.60	30.61	18.85
Median percent relative bias across characteristics	18.30	18.99	25.15	10.56
Percentage of characteristics with significant bias	65.22	52.38	60.24	20.51
Median effect size	0.16	0.17	0.22	0.10
After imputation				
Difference between pre- and post-imputation means[1]	1.21	0.75	1.32	3.11*
Effect size for difference[2]	0.02	0.01	0.02	0.04
B1SPLNPY (Spouse or domestic partner's student loans: Monthly payment, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	39.32	38.61	38.55	36.74
Median percent relative bias across characteristics	27.96	29.37	29.43	27.49
Percentage of characteristics with significant bias	59.34	50.60	47.50	19.23
Median effect size	0.25	0.27	0.31	0.29
After imputation				
Difference between pre- and post-imputation means[1]	5.74	5.39	3.50	14.95*
Effect size for difference[2]	‡	‡	‡	‡
B1SPLV (Spouse or domestic partner's education level, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	24.97	24.05	29.52	18.81
Median percent relative bias across characteristics	19.76	17.85	22.95	10.89
Percentage of characteristics with significant bias	64.84	59.04	59.26	16.67
Median effect size	0.17	0.18	0.22	0.10
After imputation				
Difference between pre- and post-imputation means[1]	2.98	3.31	0.12	4.94*
Effect size for difference[2]	‡	‡	‡	‡
B1SPODP (Household composition: Living with spouse or domestic partner, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.92	11.03	9.77
Median percent relative bias across characteristics	6.52	6.12	8.14	6.01
Percentage of characteristics with significant bias	57.61	48.81	49.40	15.38
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.02	1.16	0.20	2.42
Effect size for difference[2]	0.01	0.01	#	0.02
B1SPOWE (Spouse or domestic partner's student loans: Amount owed, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	35.46	34.97	34.33	32.81
Median percent relative bias across characteristics	25.87	24.30	26.77	23.93
Percentage of characteristics with significant bias	61.54	54.22	43.75	11.54
Median effect size	0.23	0.27	0.26	0.25
After imputation				
Difference between pre- and post-imputation means[1]	1.72	1.36	3.53	3.88
Effect size for difference[2]	0.02	0.02	0.04	0.04

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1STEMOC (Ever employed in a STEM occupation, within 12 months after BA completion)				
Before imputation				
Mean percent relative bias across characteristics	10.55	11.03	11.38	12.03
Median percent relative bias across characteristics	8.23	9.03	7.85	7.08
Percentage of characteristics with significant bias	60.44	51.76	49.40	24.36
Median effect size	0.07	0.07	0.09	0.08
After imputation				
Difference between pre- and post-imputation means[1]	1.61*	1.71*	1.32	1.15
Effect size for difference[2]	0.02	0.02	0.01	0.01
B1STRESS (Had financial difficulty, within the 12 months before B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.81	10.90	11.20	10.11
Median percent relative bias across characteristics	6.34	6.61	8.14	6.20
Percentage of characteristics with significant bias	56.52	50.00	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.17	0.21	0.43	2.30*
Effect size for difference[2]	#	#	0.01	0.02
B1SUBGRE (Took GRE Subject Test, as of June 2017)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.81	11.02	9.70
Median percent relative bias across characteristics	6.50	5.99	8.26	5.92
Percentage of characteristics with significant bias	56.52	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.01	0.04	0.09	0.04
Effect size for difference[2]	#	‡	‡	‡
B1TTLIRCNT (Most recent school, within 12 months after BA completion: Title I eligible)				
Before imputation				
Mean percent relative bias across characteristics	48.14	49.35	57.67	99.68
Median percent relative bias across characteristics	27.83	29.73	40.73	51.72
Percentage of characteristics with significant bias	54.44	56.79	46.84	46.38
Median effect size	0.30	0.30	0.46	0.48
After imputation				
Difference between pre- and post-imputation means[1]	1.65	1.69	3.29	7.66*
Effect size for difference[2]	0.02	0.02	0.04	‡
B1UGCARPREP (Studies at BA degree-granting institution prepared respondent for future career, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.55	12.21	12.35	14.74
Median percent relative bias across characteristics	8.36	7.97	8.33	10.15
Percentage of characteristics with significant bias	67.39	55.95	52.38	21.52
Median effect size	0.08	0.08	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.35	1.26	1.46	2.81*
Effect size for difference[2]	0.01	0.02	‡	0.04

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1UGCARSRVS1 (Utilized searchable job database from career planning services at BA-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.32	0.42	0.32	0.44
Effect size for difference[2]	#	0.01	#	0.01
B1UGCARSRVS2 (Utilized career counseling from career planning services at BA-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.48	0.19	0.50	0.71
Effect size for difference[2]	0.01	#	0.01	0.01
B1UGCARSRVS3 (Utilized online career or personality assessments from career planning services at BA degree-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.10	0.45	0.91	0.90
Effect size for difference[2]	#	0.01	0.01	0.01
B1UGCARSRVS4 (Participated in career/job fairs at BA-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.28	0.19	0.62	0.90
Effect size for difference[2]	#	#	0.01	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1UGCARSRVS5 (Participated in career planning services' mock interviews at BA degree-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.16	0.04	0.13	0.57
Effect size for difference[2]	#	#	#	0.01
B1UGCARSRVS6 (Utilized resume or cover letter assistance from career planning services at BA-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.99	1.13	0.18	2.35*
Effect size for difference[2]	0.01	0.01	#	0.02
B1UGCARSRVS7 (Utilized alumni network from career planning services at BA degree-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.38	0.11	0.38	0.56
Effect size for difference[2]	0.01	#	0.01	0.01
B1UGCARSRVS8 (Utilized another type of career planning service at BA-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.57	12.25	12.42	14.78
Median percent relative bias across characteristics	8.35	8.01	8.54	9.84
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.09	0.06	0.21
Effect size for difference[2]	#	‡	‡	‡

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1UGCARSRVS9 (Did not use career planning services at BA-granting institution, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.56	12.25	12.37	14.76
Median percent relative bias across characteristics	8.34	8.01	8.46	9.75
Percentage of characteristics with significant bias	67.39	55.95	52.38	24.05
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.84	0.63	0.24	3.52*
Effect size for difference[2]	0.01	0.01	#	0.04
B1UGEXOCC33 (Occupation code for expected occupation, as of NPSAS:16 interview (33 categories))				
Before imputation				
Mean percent relative bias across characteristics	12.79	13.03	13.09	14.64
Median percent relative bias across characteristics	9.26	9.13	8.85	9.75
Percentage of characteristics with significant bias	61.96	46.43	48.81	18.99
Median effect size	0.08	0.09	0.09	0.09
After imputation				
Difference between pre- and post-imputation means[1]	2.37	1.76	4.26	9.01*
Effect size for difference[2]	‡	‡	‡	‡
B1UGGRADAPP (Applied to graduate school before BA completion)				
Before imputation				
Mean percent relative bias across characteristics	12.14	11.60	12.76	13.45
Median percent relative bias across characteristics	8.14	7.79	9.02	7.22
Percentage of characteristics with significant bias	60.87	51.19	49.40	20.25
Median effect size	0.08	0.08	0.08	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.70	0.99	0.40	3.64*
Effect size for difference[2]	0.01	0.01	#	0.05
B1UGGRDATND (Likelihood will attend graduate school within the next 12 months, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	19.83	20.39	20.85	20.45
Median percent relative bias across characteristics	13.03	12.39	15.18	8.06
Percentage of characteristics with significant bias	60.87	57.14	51.81	21.52
Median effect size	0.15	0.17	0.14	0.07
After imputation				
Difference between pre- and post-imputation means[1]	1.37*	2.26*	1.77	4.53*
Effect size for difference[2]	0.02	0.04	0.02	‡
B1UGGRDPLN (Likelihood will apply to graduate school within the next 12 months, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	16.22	16.59	16.99	18.19
Median percent relative bias across characteristics	10.73	10.46	9.02	8.49
Percentage of characteristics with significant bias	61.96	53.57	53.01	24.05
Median effect size	0.08	0.10	0.10	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.80	0.82	2.59	2.86*
Effect size for difference[2]	0.01	0.01	0.03	0.04

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1UGLEADER (Held a formal leadership role during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	12.47	12.28	12.53	14.62
Median percent relative bias across characteristics	8.27	8.04	8.09	9.37
Percentage of characteristics with significant bias	66.30	54.76	51.81	21.79
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.56	0.03	1.37	0.61
Effect size for difference[2]	0.01	#	0.01	0.01
B1UGLEARNCOMM (Participated in a learning community during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	12.48	12.32	12.61	14.68
Median percent relative bias across characteristics	8.31	8.01	8.14	9.45
Percentage of characteristics with significant bias	66.30	54.76	50.60	23.08
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.23	0.12	0.38	0.17
Effect size for difference[2]	#	#	#	#
B1UGOCCCOM (Likelihood of entering expected occupation, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	12.93	12.62	12.84	14.83
Median percent relative bias across characteristics	9.03	9.03	8.72	9.20
Percentage of characteristics with significant bias	61.96	55.42	50.00	21.52
Median effect size	0.08	0.09	0.08	0.09
After imputation				
Difference between pre- and post-imputation means[1]	0.64	1.03	0.43	1.71
Effect size for difference[2]	0.01	0.02	0.01	0.02
B1UGPINTERN (Participated in a paid internship during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.73	10.92	11.05	9.67
Median percent relative bias across characteristics	6.43	7.01	8.22	5.75
Percentage of characteristics with significant bias	56.52	48.81	50.60	17.95
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.44	0.68	0.33	1.07*
Effect size for difference[2]	0.01	0.01	#	0.02
B1UGRESEARCH (Participated in a research project with a faculty member during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	12.52	12.38	12.60	14.76
Median percent relative bias across characteristics	8.33	8.03	8.09	10.21
Percentage of characteristics with significant bias	67.39	54.76	51.81	22.78
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.07	0.16	0.20	0.57
Effect size for difference[2]	#	#	#	0.01

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1UGSREXP (Participated in a culminating senior experience during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	12.51	12.32	12.59	14.63
Median percent relative bias across characteristics	8.29	8.02	8.20	9.44
Percentage of characteristics with significant bias	66.30	54.76	51.81	23.08
Median effect size	0.08	0.09	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.13	0.93	0.93	0.27
Effect size for difference[2]	#	0.01	0.01	#
B1UGUINTERN (Participated in an unpaid internship during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.73	10.96	11.11	9.78
Median percent relative bias across characteristics	6.24	6.93	8.33	5.95
Percentage of characteristics with significant bias	57.61	48.81	50.60	14.10
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.12	0.21	0.06	0.08
Effect size for difference[2]	#	#	#	#
B1UGWKPLN (Plans for work after graduation, as of NPSAS:16 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.90	10.59	10.85	11.28
Median percent relative bias across characteristics	7.05	6.47	7.90	6.02
Percentage of characteristics with significant bias	64.84	56.63	52.44	24.68
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.45	0.47	0.23	0.35
Effect size for difference[2]	‡	‡	‡	‡
B1VAR (Involved in intercollegiate sports during undergraduate education)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.82	11.14	9.77
Median percent relative bias across characteristics	6.60	6.15	8.35	5.93
Percentage of characteristics with significant bias	56.52	50.00	49.40	14.10
Median effect size	0.07	0.08	0.07	0.06
After imputation				
Difference between pre- and post-imputation means[1]	0.33	0.35	0.58	3.31*
Effect size for difference[2]	#	0.01	0.01	‡
B1VOCRCNT (Most recent teaching job, within 12 months after BA completion: taught vocational/career/technical education)				
Before imputation				
Mean percent relative bias across characteristics	42.31	44.29	47.70	91.16
Median percent relative bias across characteristics	26.57	27.32	37.94	60.09
Percentage of characteristics with significant bias	52.22	46.91	52.44	43.66
Median effect size	0.30	0.26	0.39	0.61
After imputation				
Difference between pre- and post-imputation means[1]	0.15	0.17	0.12	#
Effect size for difference[2]	‡	‡	‡	#

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1VTNEL (Voted in 2016 presidential election)				
Before imputation				
Mean percent relative bias across characteristics	10.52	11.64	11.88	11.48
Median percent relative bias across characteristics	6.87	7.31	8.51	7.90
Percentage of characteristics with significant bias	59.78	52.94	50.60	19.23
Median effect size	0.08	0.08	0.08	0.08
After imputation				
Difference between pre- and post-imputation means[1]	0.03	0.11	0.11	2.39*
Effect size for difference[2]	#	#	#	0.03
B1VYHRS (Number of hours volunteered, within the 12 months before B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.60	11.05	11.49	10.69
Median percent relative bias across characteristics	5.62	7.01	8.08	6.44
Percentage of characteristics with significant bias	56.52	48.24	47.06	19.23
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	2.04	3.85	1.14	4.45
Effect size for difference[2]	0.01	0.01	#	0.01
B1WORTH (Undergraduate education worth the financial cost, as of B&B:16/17 interview)				
Before imputation				
Mean percent relative bias across characteristics	9.72	10.78	11.03	9.75
Median percent relative bias across characteristics	6.58	6.06	8.45	5.96
Percentage of characteristics with significant bias	56.52	48.81	50.60	19.23
Median effect size	0.07	0.08	0.07	0.07
After imputation				
Difference between pre- and post-imputation means[1]	0.65	0.37	0.29	4.34*
Effect size for difference[2]	0.01	#	#	0.04
B1WRKS (Primarily student or employee while concurrently employed and enrolled, between BA completion and June 2017)				
Before imputation				
Mean percent relative bias across characteristics	32.83	32.95	40.55	36.23
Median percent relative bias across characteristics	19.25	19.17	24.11	18.82
Percentage of characteristics with significant bias	52.17	49.41	45.24	28.57
Median effect size	0.20	0.20	0.23	0.20
After imputation				
Difference between pre- and post-imputation means[1]	0.93	0.56	1.75	2.35
Effect size for difference[2]	0.01	0.01	0.02	0.02
B1WYFR1ST (First job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities)				
Before imputation				
Mean percent relative bias across characteristics	24.31	25.31	28.19	28.00
Median percent relative bias across characteristics	15.02	16.13	20.43	17.19
Percentage of characteristics with significant bias	59.34	52.33	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	1.67	1.56	0.53	6.00*
Effect size for difference[2]	0.03	0.03	0.01	0.09

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1WYFRRCNT (Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities)				
Before imputation				
Mean percent relative bias across characteristics	29.91	30.67	32.77	37.97
Median percent relative bias across characteristics	17.99	18.38	22.61	24.87
Percentage of characteristics with significant bias	60.44	53.57	48.19	26.92
Median effect size	0.22	0.21	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	0.05	0.67	0.72	1.32
Effect size for difference[2]	#	0.01	0.01	0.02
B1WYMLJ1ST (First job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job)				
Before imputation				
Mean percent relative bias across characteristics	24.31	25.31	28.19	28.00
Median percent relative bias across characteristics	15.02	16.13	20.43	17.19
Percentage of characteristics with significant bias	59.34	52.33	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	0.11	1.95	2.97	7.10
Effect size for difference[2]	#	0.03	0.04	0.09
B1WYMLJRCNT (Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job)				
Before imputation				
Mean percent relative bias across characteristics	29.91	30.67	32.77	37.97
Median percent relative bias across characteristics	17.99	18.38	22.61	24.87
Percentage of characteristics with significant bias	60.44	53.57	48.19	26.92
Median effect size	0.22	0.21	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	2.15	0.55	5.90	8.83*
Effect size for difference[2]	0.03	0.01	0.07	0.12
B1WYNJA1ST (First job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available)				
Before imputation				
Mean percent relative bias across characteristics	24.31	25.31	28.19	28.00
Median percent relative bias across characteristics	15.02	16.13	20.43	17.19
Percentage of characteristics with significant bias	59.34	52.33	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	1.78	3.18	2.13	7.03
Effect size for difference[2]	0.02	0.03	0.02	0.07

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1WYNJARCNT (Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available)				
Before imputation				
Mean percent relative bias across characteristics	29.91	30.67	32.77	37.97
Median percent relative bias across characteristics	17.99	18.38	22.61	24.87
Percentage of characteristics with significant bias	60.44	53.57	48.19	26.92
Median effect size	0.22	0.21	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	1.03	0.51	5.06	3.98
Effect size for difference[2]	0.01	0.01	0.05	0.04
B1WYNOH1ST (First job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours)				
Before imputation				
Mean percent relative bias across characteristics	24.31	25.31	28.19	28.00
Median percent relative bias across characteristics	15.02	16.13	20.43	17.19
Percentage of characteristics with significant bias	59.34	52.33	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	1.28	0.37	2.22	12.04*
Effect size for difference[2]	0.02	#	0.03	0.15
B1WYNOHRCNT (Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Did not want to work more hours)				
Before imputation				
Mean percent relative bias across characteristics	29.91	30.67	32.77	37.97
Median percent relative bias across characteristics	17.99	18.38	22.61	24.87
Percentage of characteristics with significant bias	60.44	53.57	48.19	26.92
Median effect size	0.22	0.21	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	1.04	2.57	1.15	10.12*
Effect size for difference[2]	0.01	0.03	0.01	0.13
B1WYOTH1ST (First job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason)				
Before imputation				
Mean percent relative bias across characteristics	24.31	25.31	28.19	28.00
Median percent relative bias across characteristics	15.02	16.13	20.43	17.19
Percentage of characteristics with significant bias	59.34	52.33	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	2.08	2.64	0.14	9.00*
Effect size for difference[2]	0.03	0.04	#	0.13

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
B1WYOTHRCNT (Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason)				
Before imputation				
Mean percent relative bias across characteristics	29.91	30.67	32.77	37.97
Median percent relative bias across characteristics	17.99	18.38	22.61	24.87
Percentage of characteristics with significant bias	60.44	53.57	48.19	26.92
Median effect size	0.22	0.21	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	1.86	2.66	0.82	5.84
Effect size for difference[2]	0.03	0.04	0.01	0.07
B1WYSCH1ST (First job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school)				
Before imputation				
Mean percent relative bias across characteristics	24.31	25.31	28.19	28.00
Median percent relative bias across characteristics	15.02	16.13	20.43	17.19
Percentage of characteristics with significant bias	59.34	52.33	48.24	18.99
Median effect size	0.17	0.18	0.20	0.19
After imputation				
Difference between pre- and post-imputation means[1]	5.22*	7.10*	2.11	2.49
Effect size for difference[2]	0.05	0.07	0.02	0.03
B1WYSCHRCNT (Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school)				
Before imputation				
Mean percent relative bias across characteristics	29.91	30.67	32.77	37.97
Median percent relative bias across characteristics	17.99	18.38	22.61	24.87
Percentage of characteristics with significant bias	60.44	53.57	48.19	26.92
Median effect size	0.22	0.21	0.21	0.26
After imputation				
Difference between pre- and post-imputation means[1]	2.38	2.23	1.96	11.14
Effect size for difference[2]	0.02	0.02	0.02	0.12
BORAMT1 (Cumulative amount borrowed for undergrad)				
Before imputation				
Mean percent relative bias across characteristics	4.90	5.28	5.62	5.81
Median percent relative bias across characteristics	3.17	3.46	3.49	3.11
Percentage of characteristics with significant bias	50.00	43.59	34.62	9.09
Median effect size	0.03	0.03	0.04	0.04
After imputation				
Difference between pre- and post-imputation means[1]	1.47*	1.29	2.20*	2.23*
Effect size for difference[2]	0.01	0.01	0.02	0.03
NFEDCUM1 (Cumulative non-federal loan amount for undergrad)				
Before imputation				
Mean percent relative bias across characteristics	7.72	8.39	8.14	8.49
Median percent relative bias across characteristics	4.49	4.57	5.33	4.73
Percentage of characteristics with significant bias	57.78	55.70	50.00	15.49
Median effect size	0.06	0.06	0.06	0.05
After imputation				
Difference between pre- and post-imputation means[1]	9.00*	4.54	12.69*	15.18*
Effect size for difference[2]	0.02	0.01	0.04	0.04

See notes at end of table.

Table I-9. Summary of item nonresponse bias analysis for all students and by control of institution: 2017—Continued

Variable	Overall	Public institution	Private nonprofit institution	Private for-profit institution
PAREDUC (Highest education attained by either parent)				
Before imputation				
Mean percent relative bias across characteristics	4.86	4.88	5.85	5.85
Median percent relative bias across characteristics	2.33	2.01	4.27	3.24
Percentage of characteristics with significant bias	32.22	25.32	33.33	10.94
Median effect size	0.02	0.03	0.04	0.06
After imputation				
Difference between pre- and post-imputation means[1]	4.12*	3.45*	4.37*	3.04*
Effect size for difference[2]	‡	‡	‡	‡

Rounds to zero.
‡Reporting standards not met (fewer than 30 unweighted nonrespondents).
* $p < .05$. 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.
[1] For categorical variables, this is the size-weighted average percentage difference across categories pre- and post-imputation. Size refers to the unweighted count of eligible students in a category.
[2] For categorical variables, the effect size is calculated as the square root of the sum over categories of the squared differences over weighted post-imputation means, using the student analysis weight. For continuous variables it is calculated as the weighted difference over the post-imputation standard deviation.
NOTE: PreK = prekindergarten. Relative bias, significance, and effect size before imputation are calculated using the weighted differences between respondent and full-sample means, using the student base (sampling) weight. Relative bias is calculated as 100 times the ratio of estimated bias to the weighted full-sample mean. Effect size for categorical variables is calculated as the square root of the sum over categories of the squared differences over full-sample means. 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, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Appendix J. Design Effects

List of Tables

TABLE PAGE

J-1. Design effects for selected variables for all students: 2017 ..... J-3

J-2. Design effects for selected variables for all students at public institutions: 2017 ..... J-4

J-3. Design effects for selected variables for all students at private nonprofit institutions: 2017 ..... J-5

J-4. Design effects for selected variables for all students at private for-profit institutions: 2017 ..... J-6

J-5. Design effects for selected variables for White students: 2017 ..... J-7

J-6. Design effects for selected variables for Black students: 2017 ..... J-8

J-7. Design effects for selected variables for Hispanic students: 2017 ..... J-9

J-8. Design effects for selected variables for Asian students: 2017 ..... J-10

J-9. Design effects for selected variables for Other students: 2017 ..... J-11

J-10. Design effects for selected variables for Male students: 2017 ..... J-12

J-11. Design effects for selected variables for Female students: 2017 ..... J-13

Table J-1. Design effects for selected variables for all students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	46.7	0.62	0.36	1.74	3.02
Employed 12 months after BA completion	B1MEMPM12 = 1	79.8	0.40	0.29	1.41	1.98
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	52.3	0.55	0.36	1.54	2.38
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	6. 9	0.23	0.18	1.27	1.62
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	32,172.3	228.65	173.92	1.31	1.73
Most recent job, within 12 months after BA completion: Occupation, business-related	B1OCC33RCNT = 4, 5, 6	23.6	0.41	0.30	1.35	1.83
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	33.3	0.52	0.34	1.53	2.35
Unemployed, 12 months after BA completion	B1LFP12M = 4	5.5	0.23	0.16	1.39	1.93
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	31.2	0.17	0.12	1.47	2.16
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	23.3	0.40	0.30	1.33	1.76
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	12.3	0.32	0.24	1.37	1.89
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	19.6	0.42	0.28	1.49	2.23
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1, 2, 3	21.8	0.23	0.30	0.78	0.61
First postsecondary institution control and level: 2-year or less	B1SECT = 2, 3, 5, 6, 8, 9	27.6	0.50	0.32	1.57	2.47
Attended more than one institution before BA completion	B1NUMINST > 1	48.7	0.46	0.36	1.28	1.65
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	76.0	0.50	0.40	1.26	1.58
Age, as of BA completion	B1AGEATBA (mean)	25.9	0.06	0.05	1.30	1.69
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	75.4	0.47	0.31	1.51	2.29
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.0	0.27	0.17	1.57	2.48
Cumulative undergraduate GPA	GPA (mean)	326.0	0.52	0.35	1.48	2.19
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	18,192.2	7.77	127.53	0.06	#
Ever received Pell Grant funds	PELLCUM > 0	50.8	0.02	0.36	0.06	#
Parental education, bachelor's degree	PAREDUC = 6	28.8	0.41	0.32	1.25	1.56
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	20,894.4	95.62	155.34	0.62	0.38
Summary statistics						
Minimum	†	†	†	†	0.06	#
25th percentile	†	†	†	†	1.27	1.60
Median	†	†	†	†	1.36	1.86
75th percentile	†	†	†	†	1.50	2.26
Maximum	†	†	†	†	1.74	3.02

† Not applicable.
# Rounds to zero.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-2. Design effects for selected variables for all students at public institutions: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	45.9	0.84	0.57	1.48	2.19
Employed 12 months after BA completion	B1MEMPM12 = 1	79.9	0.52	0.45	1.15	1.33
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	52.0	0.80	0.57	1.41	1.98
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	7.3	0.33	0.30	1.11	1.24
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	31,160.2	316.00	260.26	1.21	1.47
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	23.4	0.58	0.48	1.20	1.44
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	32.4	0.69	0.53	1.30	1.69
Unemployed, 12 months after BA completion	B1LFP12M = 4	5.2	0.28	0.25	1.11	1.24
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	30.9	0.24	0.19	1.29	1.65
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	23.9	0.54	0.48	1.10	1.22
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	11.8	0.41	0.37	1.13	1.27
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	20.6	0.60	0.46	1.30	1.70
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	23.4	0.41	0.48	0.85	0.73
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	30.2	0.70	0.52	1.35	1.81
Attended more than one institution before BA completion	B1NUMINST > 1	51.2	0.60	0.57	1.06	1.13
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	73.4	0.68	0.57	1.19	1.40
Age, as of BA completion	B1AGEATBA (mean)	25.4	0.08	0.07	1.17	1.37
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	78.6	0.57	0.47	1.23	1.50
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.2	0.37	0.27	1.35	1.84
Cumulative undergraduate GPA	GPA (mean)	321.8	0.71	0.55	1.28	1.65
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	16,488.9	12.07	191.80	0.06	#
Ever received Pell Grant funds	PELLCUM > 0	51.0	0.03	0.57	0.06	#
Parental education, bachelor's degree	PAREDUC = 6	29.8	0.58	0.52	1.12	1.25
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	18,514.9	126.93	224.05	0.57	0.32
Summary statistics						
Minimum	†	†	†	†	0.06	#
25th percentile	†	†	†	†	1.11	1.23
Median	†	†	†	†	1.18	1.39
75th percentile	†	†	†	†	1.29	1.67
Maximum	†	†	†	†	1.48	2.19

† Not applicable.
# Rounds to zero.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-3. Design effects for selected variables for all students at private nonprofit institutions: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	47.6	0.91	0.65	1.41	1.98
Employed 12 months after BA completion	B1MEMPM12 = 1	80.0	0.65	0.52	1.25	1.57
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	51.6	0.77	0.65	1.18	1.39
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	6.6	0.34	0.32	1.06	1.12
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	33,125.3	445.27	333.11	1.34	1.79
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	24.3	0.67	0.56	1.20	1.44
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	36.1	0.80	0.62	1.27	1.62
Unemployed, 12 months after BA completion	B1LFP12M = 4	5.3	0.42	0.29	1.43	2.05
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	31.8	0.25	0.21	1.17	1.36
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	22.4	0.72	0.54	1.33	1.77
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	12.9	0.59	0.44	1.36	1.86
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	20.3	0.64	0.52	1.22	1.48
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	20.0	0.55	0.52	1.07	1.14
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	21.1	0.62	0.53	1.17	1.36
Attended more than one institution before BA completion	B1NUMINST > 1	41.6	0.84	0.64	1.30	1.70
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	71.3	0.86	0.72	1.19	1.41
Age, as of BA completion	B1AGEATBA (mean)	25.5	0.11	0.09	1.24	1.54
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	76.1	0.67	0.55	1.22	1.48
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	5.5	0.41	0.30	1.37	1.89
Cumulative undergraduate GPA	GPA (mean)	334.1	0.94	0.61	1.54	2.37
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	18,568.5	8.18	223.38	0.04	#
Ever received Pell Grant funds	PELLCUM > 0	45.7	0.02	0.65	0.04	#
Parental education, bachelor's degree	PAREDUC = 6	29.0	0.74	0.59	1.25	1.56
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	22,725.2	191.98	305.08	0.63	0.40
Summary statistics						
Minimum	†	†	†	†	0.04	#
25th percentile	†	†	†	†	1.17	1.36
Median	†	†	†	†	1.23	1.51
75th percentile	†	†	†	†	1.33	1.78
Maximum	†	†	†	†	1.54	2.37

† Not applicable.
# Rounds to zero.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-4. Design effects for selected variables for all students at private for-profit institutions: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	50.2	1.16	0.66	1.76	3.11
Employed 12 months after BA completion	B1MEMPM12 = 1	77.3	0.84	0.55	1.52	2.32
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	59.4	1.53	0.64	2.38	5.66
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	3.5	0.51	0.24	2.11	4.46
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	38,410.0	551.18	370.78	1.49	2.21
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	22.3	1.15	0.55	2.10	4.42
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	29.1	1.11	0.60	1.86	3.47
Unemployed, 12 months after BA completion	B1LFP12M = 4	8.7	0.62	0.37	1.68	2.81
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	32.3	0.26	0.21	1.20	1.45
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	20.9	0.99	0.53	1.86	3.46
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	14.6	0.90	0.46	1.95	3.78
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	5.9	0.42	0.31	1.35	1.82
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	14.4	0.75	0.46	1.63	2.64
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	33.4	0.94	0.62	1.52	2.31
Attended more than one institution before BA completion	B1NUMINST > 1	58.7	1.01	0.65	1.56	2.44
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	127.5	2.29	1.04	2.20	4.82
Age, as of BA completion	B1AGEATBA (mean)	33.8	0.43	0.13	3.34	11.16
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	38.9	2.60	0.64	4.07	16.57
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.2	0.59	0.32	1.86	3.47
Cumulative undergraduate GPA	GPA (mean)	330.0	1.39	0.75	1.86	3.47
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	34,365.3	8.00	284.02	0.03	#
Ever received Pell Grant funds	PELLCUM > 0	74.8	0.02	0.57	0.03	#
Parental education, bachelor's degree	PAREDUC = 6	17.8	0.71	0.50	1.41	1.99
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	36,917.4	311.33	318.75	0.98	0.95
Summary statistics						
Minimum	†	†	†	†	0.03	#
25th percentile	†	†	†	†	1.45	2.10
Median	†	†	†	†	1.72	2.96
75th percentile	†	†	†	†	2.02	4.09
Maximum	†	†	†	†	4.07	16.57

† Not applicable.
# Rounds to zero.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-5. Design effects for selected variables for White students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	46.8	0.73	0.45	1.61	2.58
Employed 12 months after BA completion	B1MEMPM12 = 1	83.1	0.45	0.34	1.32	1.75
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	54.8	0.58	0.45	1.28	1.63
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	7.1	0.27	0.23	1.17	1.37
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	32,830.1	265.41	214.84	1.24	1.53
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	23.8	0.51	0.39	1.31	1.72
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	35.2	0.62	0.43	1.43	2.04
Unemployed, 12 months after BA completion	B1LFP12M = 4	4.2	0.24	0.18	1.31	1.73
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	31.9	0.21	0.15	1.42	2.02
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	22.6	0.52	0.38	1.35	1.84
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	12.1	0.39	0.30	1.32	1.74
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	19.0	0.56	0.36	1.58	2.49
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	21.8	0.38	0.38	1.02	1.04
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	26.6	0.58	0.40	1.45	2.10
Attended more than one institution before BA completion	B1NUMINST > 1	48.2	0.57	0.45	1.25	1.56
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	73.4	0.62	0.50	1.25	1.57
Age, as of BA completion	B1AGEATBA (mean)	25.6	0.08	0.06	1.34	1.81
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	76.5	0.56	0.39	1.46	2.13
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	5.7	0.29	0.21	1.40	1.96
Cumulative undergraduate GPA	GPA (mean)	330.9	0.66	0.44	1.50	2.24
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	17,578.1	141.43	155.64	0.91	0.83
Ever received Pell Grant funds	PELLCUM > 0	43.1	0.43	0.45	0.95	0.90
Parental education, bachelor's degree	PAREDUC = 6	31.0	0.54	0.42	1.28	1.64
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	20,753.6	193.50	197.89	0.98	0.96
Summary statistics						
Minimum	†	†	†	†	0.91	0.83
25th percentile	†	†	†	†	1.24	1.54
Median	†	†	†	†	1.32	1.74
75th percentile	†	†	†	†	1.42	2.03
Maximum	†	†	†	†	1.61	2.58

† Not applicable.
[1] 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).
[2] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-6. Design effects for selected variables for Black students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	44.7	1.78	0.99	1.79	3.19
Employed 12 months after BA completion	B1MEMPM12 = 1	74.2	1.41	0.87	1.62	2.62
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	48.6	1.68	1.00	1.68	2.83
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	7.1	0.75	0.51	1.45	2.11
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	29,585.4	813.12	477.53	1.70	2.90
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	25.2	1.63	0.87	1.88	3.53
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	28.3	1.49	0.90	1.65	2.74
Unemployed, 12 months after BA completion	B1LFP12M = 4	8.9	0.84	0.57	1.47	2.15
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	30.0	0.58	0.35	1.63	2.67
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	27.1	1.41	0.89	1.59	2.52
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	16.5	1.08	0.74	1.46	2.12
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	16.2	1.23	0.74	1.67	2.78
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	14.4	1.05	0.70	1.49	2.23
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	30.5	1.63	0.92	1.77	3.14
Attended more than one institution before BA completion	B1NUMINST > 1	52.1	1.60	1.00	1.61	2.58
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	94.4	2.21	1.41	1.57	2.47
Age, as of BA completion	B1AGEATBA (mean)	28.9	0.28	0.19	1.49	2.23
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	63.9	1.54	0.96	1.60	2.57
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.7	0.86	0.50	1.72	2.95
Cumulative undergraduate GPA	GPA (mean)	304.4	1.44	0.98	1.47	2.16
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	29,720.5	562.46	391.94	1.44	2.06
Ever received Pell Grant funds	PELLCUM > 0	77.9	1.44	0.83	1.73	3.00
Parental education, bachelor's degree	PAREDUC = 6	21.2	1.35	0.82	1.66	2.74
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	31,677.7	688.77	442.52	1.56	2.42
Summary statistics						
Minimum	†	†	†	†	1.44	2.06
25th percentile	†	†	†	†	1.49	2.23
Median	†	†	†	†	1.61	2.60
75th percentile	†	†	†	†	1.69	2.87
Maximum	†	†	†	†	1.88	3.53

† Not applicable.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-7. Design effects for selected variables for Hispanic students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	44.9	1.44	0.94	1.53	2.33
Employed 12 months after BA completion	B1MEMPM12 = 1	74.8	1.24	0.82	1.50	2.26
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	50.3	1.39	0.95	1.47	2.15
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	7.4	0.87	0.50	1.74	3.03
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	29,967.6	623.90	447.16	1.40	1.95
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	23.1	1.28	0.80	1.60	2.55
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	29.7	1.13	0.87	1.30	1.69
Unemployed, 12 months after BA completion	B1LFP12M = 4	8.0	0.75	0.51	1.46	2.15
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	30.1	0.53	0.33	1.64	2.67
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	22.0	1.14	0.79	1.45	2.10
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	12.0	0.88	0.62	1.43	2.03
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	19.1	1.12	0.75	1.50	2.24
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	18.7	1.03	0.74	1.39	1.94
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	32.8	1.37	0.89	1.54	2.37
Attended more than one institution before BA completion	B1NUMINST > 1	52.9	1.39	0.95	1.47	2.16
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	79.8	1.43	0.99	1.45	2.10
Age, as of BA completion	B1AGEATBA (mean)	26.0	0.17	0.11	1.46	2.14
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	73.0	1.53	0.84	1.81	3.28
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.1	0.81	0.45	1.78	3.18
Cumulative undergraduate GPA	GPA (mean)	318.5	1.46	0.91	1.60	2.57
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	17,217.9	453.74	327.88	1.38	1.92
Ever received Pell Grant funds	PELLCUM > 0	71.8	1.26	0.85	1.48	2.18
Parental education, bachelor's degree	PAREDUC = 6	22.2	1.36	0.79	1.72	2.96
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	18,879.3	514.89	371.16	1.39	1.92
Summary statistics						
Minimum	†	†	†	†	1.30	1.69
25th percentile	†	†	†	†	1.44	2.06
Median	†	†	†	†	1.47	2.17
75th percentile	†	†	†	†	1.60	2.56
Maximum	†	†	†	†	1.81	3.28

† Not applicable.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-8. Design effects for selected variables for Asian students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	53.2	2.04	1.40	1.46	2.12
Employed 12 months after BA completion	B1MEMPM12 = 1	68.0	2.23	1.31	1.71	2.91
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	43.8	2.26	1.39	1.63	2.64
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	4.3	0.75	0.57	1.32	1.75
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	34,109.8	1,363.35	882.77	1.54	2.39
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	21.0	1.74	1.14	1.53	2.33
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	32.3	2.32	1.31	1.77	3.14
Unemployed, 12 months after BA completion	B1LFP12M = 4	7.6	1.12	0.74	1.51	2.29
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	29.3	0.89	0.54	1.65	2.74
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	25.0	1.44	1.22	1.18	1.39
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	9.7	0.95	0.83	1.14	1.31
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	28.8	1.61	1.27	1.26	1.60
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	36.0	1.80	1.35	1.34	1.78
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	25.0	1.56	1.22	1.28	1.64
Attended more than one institution before BA completion	B1NUMINST > 1	42.1	1.90	1.39	1.37	1.88
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	66.1	2.20	1.22	1.80	3.23
Age, as of BA completion	B1AGEATBA (mean)	24.3	0.18	0.13	1.40	1.97
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	84.6	1.46	1.01	1.44	2.08
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.2	0.98	0.68	1.44	2.07
Cumulative undergraduate GPA	GPA (mean)	328.8	1.80	1.21	1.48	2.20
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	9,716.4	559.42	405.26	1.38	1.91
Ever received Pell Grant funds	PELLCUM > 0	43.3	1.78	1.39	1.28	1.64
Parental education, bachelor's degree	PAREDUC = 6	31.1	1.74	1.30	1.34	1.79
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	11,618.7	647.45	525.91	1.23	1.52
Summary statistics						
Minimum	†	†	†	†	1.14	1.31
25th percentile	†	†	†	†	1.30	1.70
Median	†	†	†	†	1.42	2.02
75th percentile	†	†	†	†	1.53	2.36
Maximum	†	†	†	†	1.80	3.23

† Not applicable.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-9. Design effects for selected variables for Other students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	42.1	2.48	1.69	1.47	2.15
Employed 12 months after BA completion	B1MEMPM12 = 1	81.4	2.07	1.33	1.56	2.42
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	45.9	2.47	1.71	1.45	2.10
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	6.7	1.20	0.85	1.40	1.97
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	30,819.9	1,037.61	764.35	1.36	1.84
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	23.4	2.48	1.45	1.71	2.93
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	29.8	2.66	1.57	1.70	2.88
Unemployed, 12 months after BA completion	B1LFP12M = 4	5.2	1.11	0.76	1.46	2.12
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	31.1	0.68	0.54	1.28	1.63
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	24.6	2.15	1.47	1.46	2.12
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	11.9	1.49	1.11	1.34	1.80
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	21.0	2.01	1.40	1.44	2.07
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	22.2	2.19	1.42	1.54	2.37
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	25.9	2.28	1.50	1.52	2.31
Attended more than one institution before BA completion	B1NUMINST > 1	48.5	2.54	1.71	1.48	2.20
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	78.6	2.95	1.96	1.51	2.27
Age, as of BA completion	B1AGEATBA (mean)	26.0	0.33	0.23	1.42	2.02
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	76.3	2.24	1.46	1.54	2.37
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	7.0	1.43	0.88	1.63	2.65
Cumulative undergraduate GPA	GPA (mean)	321.5	3.14	1.73	1.81	3.29
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	19,637.0	886.56	619.18	1.43	2.05
Ever received Pell Grant funds	PELLCUM > 0	56.0	2.64	1.70	1.55	2.40
Parental education, bachelor's degree	PAREDUC = 6	29.6	2.50	1.56	1.60	2.55
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	21,567.3	946.13	699.57	1.35	1.83
Summary statistics						
Minimum	†	†	†	†	1.28	1.63
25th percentile	†	†	†	†	1.43	2.04
Median	†	†	†	†	1.48	2.18
75th percentile	†	†	†	†	1.55	2.41
Maximum	†	†	†	†	1.81	3.29

† Not applicable.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-10. Design effects for selected variables for Male students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	49.2	0.88	0.57	1.55	2.40
Employed 12 months after BA completion	B1MEMPM12 = 1	79.2	0.63	0.46	1.37	1.87
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	52.8	0.88	0.57	1.55	2.40
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	3.5	0.26	0.21	1.25	1.57
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	34,736.3	424.02	302.99	1.40	1.96
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	24.3	0.77	0.49	1.58	2.50
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	38.3	0.81	0.55	1.46	2.14
Unemployed, 12 months after BA completion	B1LFP12M = 4	6.4	0.38	0.28	1.39	1.92
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	32.2	0.26	0.19	1.35	1.83
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	21.3	0.67	0.46	1.45	2.10
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	10.7	0.47	0.35	1.34	1.78
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	18.6	0.68	0.44	1.53	2.33
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	31.0	0.56	0.53	1.06	1.13
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	26.2	0.80	0.50	1.59	2.54
Attended more than one institution before BA completion	B1NUMINST > 1	45.7	0.78	0.57	1.37	1.88
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	75.0	0.80	0.60	1.32	1.74
Age, as of BA completion	B1AGEATBA (mean)	25.8	0.10	0.07	1.30	1.68
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	78.4	0.61	0.47	1.29	1.68
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	5.3	0.43	0.26	1.67	2.78
Cumulative undergraduate GPA	GPA (mean)	319.3	0.97	0.58	1.68	2.84
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	16,528.0	218.10	195.66	1.11	1.24
Ever received Pell Grant funds	PELLCUM > 0	47.9	0.62	0.57	1.09	1.19
Parental education, bachelor's degree	PAREDUC = 6	29.6	0.75	0.52	1.45	2.11
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	19,212.5	301.72	241.83	1.25	1.56
Summary statistics						
Minimum	†	†	†	†	1.06	1.13
25th percentile	†	†	†	†	1.30	1.68
Median	†	†	†	†	1.38	1.90
75th percentile	†	†	†	†	1.54	2.36
Maximum	†	†	†	†	1.68	2.84

† Not applicable.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table J-11. Design effects for selected variables for Female students: 2017

Variable label	Defined as	Estimate[1]	Design standard error	Simple random sample standard error	DEFT[2]	DEFF[3]
One job, within 12 months after BA completion	B1TOTJOB = 1	44.8	0.77	0.46	1.67	2.80
Employed 12 months after BA completion	B1MEMPM12 = 1	80.2	0.53	0.37	1.43	2.06
Most recent job, within 12 months after BA completion: Employer offered any benefits	B1BENANYRCNT = 1	52.0	0.71	0.46	1.54	2.37
Ever employed in teaching occupation, within 12 months after BA completion	B1TCHOCC = 1	9.4	0.36	0.27	1.33	1.77
Most recent job, within 12 months after BA completion: Annualized salary based on month 12	B1YRSAL12RCNT (mean)	30,285.5	277.29	204.70	1.35	1.84
Most recent job, within 12 months after BA completion: Occupation, business related	B1OCC33RCNT = 4,5,6	23.0	0.50	0.39	1.29	1.66
Most recent job, within 12 months after BA completion: Salaried employee	B1SALEMPRCNT = 1	29.6	0.61	0.42	1.44	2.08
Unemployed, 12 months after BA completion	B1LFP12M = 4	4.8	0.29	0.20	1.45	2.10
Most recent job, within 12 months after BA completion: Hours worked in month 12	B1HRS12RCNT (mean)	30.5	0.24	0.15	1.61	2.59
Enrolled in a degree/certificate program, within 12 months after BA completion	B1ENRPG = 1	24.8	0.62	0.40	1.55	2.40
Highest degree enrollment, within 12 months after BA completion: Master's	B1HIDEG = 5	13.5	0.49	0.32	1.56	2.44
Took a graduate or professional entrance exam, as of June 2017	B1GRDEXM = 1	20.4	0.54	0.37	1.46	2.14
Field of study: Undergraduate (10 categories): STEM	B1MAJORS4Y = 1,2,3	15.0	0.42	0.33	1.27	1.61
First postsecondary institution control and level: 2-year or less	B1SECT = 2,3,5,6,8,9	28.7	0.68	0.42	1.62	2.63
Attended more than one institution before BA completion	B1NUMINST > 1	51.0	0.66	0.46	1.44	2.06
Months between initial enrollment in PSE and BA completion	B1PSE_BA (mean)	76.7	0.69	0.53	1.29	1.66
Age, as of BA completion	B1AGEATBA (mean)	26.0	0.09	0.07	1.37	1.87
Unmarried no dependents, 12 months after BA completion (considering all dependents)	B1MARCHB = 1	73.2	0.67	0.41	1.65	2.71
Prior degree: 4-year bachelor's degree	DEGPRBA = 1	6.4	0.35	0.23	1.57	2.46
Cumulative undergraduate GPA	GPA (mean)	331.1	0.57	0.43	1.33	1.77
Cumulative federal loan amount for undergrad	FEDCUM1 (mean)	19,429.6	160.86	167.27	0.96	0.92
Ever received Pell Grant funds	PELLCUM > 0	53.0	0.46	0.46	1.00	1.01
Parental education, bachelor's degree	PAREDUC = 6	28.3	0.56	0.42	1.34	1.81
Total amount in loans borrowed for undergraduate	BORAMT1 (mean)	22,145.1	228.45	202.08	1.13	1.28
Summary statistics						
Minimum	†	†	†	†	0.96	0.92
25th percentile	†	†	†	†	1.31	1.72
Median	†	†	†	†	1.44	2.06
75th percentile	†	†	†	†	1.55	2.42
Maximum	†	†	†	†	1.67	2.80

† Not applicable.
[1] Estimate is either the mean for continuous variables or the percent for categorical ones.
[2] 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).
[3] 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: STEM = science, technology, engineering, and mathematics. PSE = postsecondary education. GPA = grade point average.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Appendix K. Item Response Rates and Imputation Results

List of Tables

TABLE PAGE

K-1. Weighted item response rates, by control of institution: 2017 ..... K-3

K-2. Means of continuous variables before and after imputation: 2017 ..... K-20

K-3. Distributions of categorical variables before and after imputation: 2017 ..... K-22

Table K-1. Weighted item response rates, by control of institution: 2017

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1AFFCHLD	Result of financial cost of undergraduate and graduate education: Delayed having children, as of B&B:16/17 interview	19,490	76.40	76.15	76.74	77.38
B1AFFEDJB	Result of financial cost of undergraduate and graduate education: Took job instead of enrolling in additional education, as of B&B:16/17 interview	19,490	76.32	76.11	76.54	77.44
B1AFFHOME	Result of financial cost of undergraduate and graduate education: Delayed buying a home, as of B&B:16/17 interview	19,490	76.46	76.21	76.81	77.37
B1AFFLESS	Result of financial cost of undergraduate and graduate education: Took job outside of field of study or a less desirable job, as of B&B:16/17 interview	19,490	76.56	76.31	76.94	77.43
B1AFFMARR	Result of financial cost of undergraduate and graduate education: Delayed getting married, as of B&B:16/17 interview	19,490	76.46	76.20	76.83	77.31
B1AFFWKMR	Result of financial cost of undergraduate and graduate education: Worked more than desired, as of B&B:16/17 interview	19,490	76.53	76.27	76.89	77.45
B1AGEATBA	Age, as of BA completion	19,490	99.97	100.00	99.91	100.00
B1ALONE	Household composition: Living alone, as of B&B:16/17 interview	19,490	77.86	77.62	78.07	79.29
B1APPLY	Ever applied for a preK–12th grade teaching position, as of June 2017	19,490	78.77	78.88	78.57	78.49
B1ARTRCNT	Most recent teaching job, within 12 months after BA completion: Taught arts/music	3,320	16.91	16.86	17.55	13.25
B1AWFAM	Respondent's immediate family aware of sexual orientation, as of B&B:16/17 interview	19,490	76.56	76.39	76.82	77.11
B1AWSOC	People respondent socializes with aware of sexual orientation, as of B&B:16/17 interview	19,490	76.53	76.37	76.74	77.14
B1AWWORK	People respondent works with aware of sexual orientation, as of B&B:16/17 interview	19,490	76.51	76.34	76.75	77.09
B1BAL1ST	First job, within 12 months after BA completion: Satisfaction with work-life balance	17,600	70.86	70.74	71.21	70.40
B1BALRCNT	Most recent job, within 12 months after BA completion: Satisfaction with work-life balance	17,600	70.56	70.31	71.14	70.29
B1BEN1ST	First job, within 12 months after BA completion: Satisfaction with benefits	17,600	70.82	70.69	71.20	70.30
B1BENANY	Ever had a job that offered benefits, within 12 months after BA completion	17,600	90.78	90.78	91.01	89.65
B1BENANY1ST	First job, within 12 months after BA completion: Employer offered any benefits	17,600	90.58	90.66	90.62	89.41
B1BENANYRCNT	Most recent job, within 12 months after BA completion: Employer offered any benefits	17,600	90.00	89.96	90.25	89.18
B1BENBEN	Importance of job factors, as of B&B:16/17 interview: Employer-provided benefits	19,490	76.81	76.50	77.23	78.02
B1BENCOM	Importance of job factors, as of B&B:16/17 interview: Commute	19,490	76.71	76.40	77.14	77.86
B1BENFLEX	Importance of job factors, as of B&B:16/17 interview: Making decisions	19,490	76.83	76.54	77.24	77.91
B1BENPRO	Importance of job factors, as of B&B:16/17 interview: Promotion opportunities	19,490	76.75	76.45	77.15	77.89

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1BENRCNT	Most recent job, within 12 months after BA completion: Satisfaction with benefits	17,600	70.48	70.22	71.10	70.11
B1BENRELA	Importance of job factors, as of B&B:16/17 interview: Work related to field of study	19,490	76.86	76.59	77.19	77.98
B1BENSAL	Importance of job factors, as of B&B:16/17 interview: Wages and bonuses	19,490	76.80	76.51	77.20	77.79
B1BOCOM1ST	First job, within 12 months after BA completion: Amount of annualized tips, bonus, or commissions	17,600	89.50	89.58	89.57	88.22
B1BOCOMRCNT	Most recent job, within 12 months after BA completion: Amount of annualized tips, bonus, or commissions	17,600	89.10	89.01	89.50	88.11
B1CARIND	Ever had a job that was part of career, within 12 months after BA completion	17,600	70.96	70.82	71.32	70.51
B1CARIND1ST	First job, within 12 months after BA completion: Part of a career	17,600	84.00	83.82	84.36	84.16
B1CARINDRCNT	Most recent job, within 12 months after BA completion: Part of a career	17,600	70.66	70.42	71.21	70.42
B1CARLOAN	Monthly vehicle loan or lease payment, as of B&B:16/17 interview	19,490	76.41	76.36	76.40	76.89
B1CERTART	Certified to teach arts/music, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTENG	Certified to teach English/language arts, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTESL	Certified to teach ESL, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTFLG	Certified to teach foreign languages, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTGENA	Certified to teach elementary education, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTGENB	Certified to teach general education (middle or secondary grades), as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTHLTH	Certified to teach health/physical education, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTMTH	Certified to teach math/computer science, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTOTH	Certified to teach other unspecified subject, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTPREK	Certified to teach early childhood education (preK), as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTSCI	Certified to teach natural sciences, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTSOC	Certified to teach social sciences, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTSPED	Certified to teach special education, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CERTVOC	Certified to teach vocational/career/technical education, as of B&B:16/17 interview	5,370	13.86	14.99	12.50	7.77
B1CLB	Involved in extracurricular club or group during undergraduate education	19,490	77.79	77.64	77.83	79.21
B1CLICENSE	Had professional certification or state or industry license, within 12 months after BA completion	17,600	71.59	71.35	72.13	71.37

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1CONTEMP	Contributed to employer-based retirement account, within the 12 months before B&B:16/17 interview	12,640	53.74	53.62	53.39	56.72
B1CONTNON	Contributed to non-employer-based retirement savings account, within the 12 months before B&B:16/17 interview	8,450	27.54	27.44	27.55	28.59
B1COOP	Participated in a co-operative experience during undergraduate education	19,490	77.69	77.51	77.78	79.11
B1CRDBAL	Credit card balance, as of B&B:16/17 interview	16,620	70.54	70.76	70.19	69.92
B1CSTDYCR	Monthly childcare costs, as of B&B:16/17 interview	6,850	23.82	21.19	22.01	46.14
B1CURBEN1ST	First job, within 12 months after BA completion: Reason for non-career job: To receive benefits	10,380	53.43	54.20	52.28	50.35
B1CURBENRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To receive benefits	9,450	47.91	48.06	47.70	47.30
B1CURCRT	Certified to teach, as of B&B:16/17 interview	19,490	77.03	76.90	77.13	77.91
B1CUREDU1ST	First job, within 12 months after BA completion: Reason for non-career job: To earn money for education	10,380	53.43	54.20	52.28	50.35
B1CUREDURCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To earn money for education	9,450	47.91	48.06	47.70	47.30
B1CUREXP1ST	First job, within 12 months after BA completion: Reason for non-career job: To obtain job experience	10,380	53.43	54.20	52.28	50.35
B1CUREXPRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To obtain job experience	9,450	47.91	48.06	47.70	47.30
B1CUROTH1ST	First job, within 12 months after BA completion: Reason for non-career job: Other reason	10,380	53.43	54.20	52.28	50.35
B1CUROTHRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: Other reason	9,450	47.91	48.06	47.70	47.30
B1CURPAY1ST	First job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills	10,380	53.43	54.20	52.28	50.35
B1CURPAYRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills	9,450	47.91	48.06	47.70	47.30
B1DEP2	Number of dependent children, 12 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1DEPAGEHIGH	Age of oldest dependent child, 12 months after BA completion	7,560	29.09	25.50	27.49	54.68
B1DEPAGELOW	Age of youngest dependent child, 12 months after BA completion	7,560	29.09	25.50	27.49	54.68
B1DERMAJHI	Highest degree enrollment, within 12 months after BA completion: Major or field of study	4,550	83.19	81.52	85.52	90.91
B1DONATE	Donated to 2015–16 BA-granting institution, as of B&B:16/17 interview	19,490	76.89	76.74	77.06	77.69
B1DPNTS	Household composition: Living with dependents, as of B&B:16/17 interview	19,490	77.86	77.62	78.07	79.29

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1DUPCRRCNT	Most recent teaching job, within 12 months after BA completion: Took junior/senior courses in primary subject taught	2,600	5.05	5.29	4.96	2.13
B1EDUIND1ST	First employer, within 12 months after BA completion: Employer education level	17,600	90.28	90.25	90.49	89.47
B1EDUINDRCNT	Most recent employer, within 12 months after BA completion: Level of education industry	17,600	87.36	87.22	87.53	87.94
B1EERCNT	Most recent teaching job, within 12 months after BA completion: Taught elementary education	3,320	16.91	16.86	17.55	13.25
B1ELNINAW	Teacher loan forgiveness programs influence and participation, as of B&B:16/17 interview	3,340	17.66	17.80	17.83	14.53
B1ELNPRT	Teacher loan forgiveness awareness, as of B&B:16/17 interview	19,490	77.07	76.92	77.21	78.04
B1EMPDIS	Reason not working for pay, between BA completion and June 2017: Disabled	620	39.82	40.64	37.13	46.27
B1EMPHM	Reason not working for pay, between BA completion and June 2017: Homemaker	620	39.53	40.14	37.13	46.27
B1EMPSLF	Ever self-employed, within 12 months after BA completion	17,600	91.01	91.09	91.10	89.67
B1EMPSLF1ST	First employer, within 12 months after BA completion: Self-employed	17,600	90.96	91.03	91.06	89.72
B1EMPSLFRCNT	Most recent employer, within 12 months after BA completion: Self-employed	17,600	90.34	90.30	90.59	89.45
B1EMPTMP	Reason not working for pay, between BA completion and June 2017: Laid off, on leave, or waiting to report to work	620	39.76	40.53	37.13	46.27
B1EMPTRV	Reason not working for pay, between BA completion and June 2017: Traveling	620	39.76	40.53	37.13	46.27
B1EMPTYP1ST	First employer, within 12 months after BA completion: Type of employer	17,600	85.77	85.66	85.99	85.71
B1EMPTYPRCNT	Most recent employer, within 12 months after BA completion: Type of employer	17,600	71.22	70.92	71.90	71.03
B1EMPVOL	Reason not working for pay, between BA completion and June 2017: Volunteering or unpaid internship	620	39.82	40.64	37.13	46.27
B1ENGRCNT	Most recent teaching job, within 12 months after BA completion: Taught English/language arts	3,320	16.91	16.86	17.55	13.25
B1ENR	Ever enrolled at BA-granting and another institution simultaneously	19,490	89.38	89.61	89.61	85.79
B1EPREPALT	Prepared to teach through an alternative entry program, as of B&B:16/17 interview	19,490	77.12	77.00	77.19	78.06
B1EPREPCOL	Prepared to teach at a college or university that provides certification, as of B&B:16/17 interview	19,490	77.12	77.00	77.19	78.06
B1EPREPCOMP	Prepared to teach through a student teaching assignment, as of B&B:16/17 interview	19,490	77.12	77.00	77.19	78.06
B1EPREPONL	Prepared to teach through an online-only certification program, as of B&B:16/17 interview	19,490	77.12	77.00	77.19	78.06

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1EPRMSBRCNT	Most recent teaching job, within 12 months after BA completion: Primary subject taught	3,320	16.91	16.86	17.55	13.25
B1ERNHIDG	Highest degree enrollment, within 12 months after BA completion: Completed program	4,550	43.48	42.58	46.70	36.95
B1ESLRCNT	Most recent teaching job, within 12 months after BA completion: Taught ESL	3,320	16.91	16.86	17.55	13.25
B1ESTTCLG	Length of student teaching	5,410	14.97	15.99	13.87	8.71
B1ETEACHGT	TEACH grant awareness, as of B&B:16/17 interview	19,490	77.03	76.84	77.21	78.08
B1EVRTCH	Ever taught at preK through 12th grade level, as of B&B:16/17 interview	19,490	78.89	79.03	78.66	78.57
B1EVRVT	Ever voted in any election, as of B&B:16/17 interview	18,690	77.06	76.86	77.35	77.71
B1EXPAP	Ever on academic probation during undergraduate education	19,490	77.96	77.78	78.09	79.29
B1EXPEVR	Highest level of education expected ever, as of B&B:16/17 interview	19,490	77.96	77.79	78.08	79.24
B1EXPGH	Graduated from BA-granting institution with academic honors	19,490	77.88	77.71	78.00	79.12
B1FACS	Main factor in post-bachelor's field of study choice between BA completion and June 2017	4,550	44.38	43.46	47.74	37.47
B1FDAWRK1ST	First employer, within 12 months after BA completion: Found job through: Already working for employer	17,600	73.31	73.25	73.56	72.66
B1FDAWRKRCNT	Most recent employer, within 12 months after BA completion: Found job through: Already working for employer	17,600	71.31	71.02	71.99	71.02
B1FDCOL1ST	First employer, within 12 months after BA completion: Found job through: Colleague or mentor	17,600	73.31	73.25	73.56	72.66
B1FDCOLRCNT	Most recent employer, within 12 months after BA completion: Found job through: Colleague or mentor	17,600	71.31	71.02	71.99	71.02
B1FDDI1ST	First employer, within 12 months after BA completion: Found job through: Direct inquiry	17,600	73.31	73.25	73.56	72.66
B1FDDIRCNT	Most recent employer, within 12 months after BA completion: Found job through: Direct inquiry	17,600	71.31	71.02	71.99	71.02
B1FDFAC1ST	First employer, within 12 months after BA completion: Found job through: Faculty member or alumni	17,600	73.31	73.25	73.56	72.66
B1FDFACRCNT	Most recent employer, within 12 months after BA completion: Found job through: Faculty member or alumni	17,600	71.31	71.02	71.99	71.02
B1FDFAM1ST	First employer, within 12 months after BA completion: Found job through: Friends or family	17,600	73.31	73.25	73.56	72.66
B1FDFAMRCNT	Most recent employer, within 12 months after BA completion: Found job through: Friends or family	17,600	71.31	71.02	71.99	71.02
B1FDHHR1ST	First employer, within 12 months after BA completion: Found job through: Headhunter or recruiter	17,600	73.31	73.25	73.56	72.66

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1FDHHRRCNT	Most recent employer, within 12 months after BA completion: Found job through: Headhunter or recruiter	17,600	71.31	71.02	71.99	71.02
B1FDINT1ST	First employer, within 12 months after BA completion: Found job through: Internship	17,600	73.31	73.25	73.56	72.66
B1FDINTRCNT	Most recent employer, within 12 months after BA completion: Found job through: Internship	17,600	71.31	71.02	71.99	71.02
B1FDONL1ST	First employer, within 12 months after BA completion: Found job through: Online job posting	17,600	73.31	73.25	73.56	72.66
B1FDONLRCNT	Most recent employer, within 12 months after BA completion: Found job through: Online job posting	17,600	71.31	71.02	71.99	71.02
B1FDOTH1ST	First employer, within 12 months after BA completion: Found job through: Other	17,600	73.31	73.25	73.56	72.66
B1FDOTHRCNT	Most recent employer, within 12 months after BA completion: Found job through: Other	17,600	71.31	71.02	71.99	71.02
B1FIN2000	Respondent's confidence in ability to come up with $2,000 within the next month, as of B&B:16/17 interview	19,490	76.55	76.37	76.78	77.28
B1FLRCNT	Most recent teaching job, within 12 months after BA completion: Taught foreign languages	3,320	16.91	16.86	17.55	13.25
B1FRPLRCNT	Most recent school, within 12 months after BA completion: Percent free or reduced price lunch eligible	3,230	10.91	11.65	9.94	6.88
B1FTRBEGSAL	Estimated expected beginning salary, as of NPSAS:16 interview	18,380	81.31	80.86	80.89	87.99
B1FTRHIGHSAL	Estimated highest possible beginning salary, as of NPSAS:16 interview	18,380	78.80	78.45	78.41	84.25
B1FTRLOWSAL	Estimated lowest possible beginning salary, as of NPSAS:16 interview	18,380	78.83	78.53	78.26	84.67
B1GENDER	Gender, as of B&B:16/17 interview	19,490	77.04	76.84	77.28	77.96
B1GMAT	Took GMAT, as of June 2017	19,490	77.91	77.78	77.97	79.02
B1GPA	Overall GPA for 2015–16 BA degree	19,490	96.82	97.19	96.92	92.44
B1GRDEXM	Took a graduate or professional entrance exam, as of June 2017	19,490	78.02	77.86	78.10	79.24
B1GRE	Took GRE, as of June 2017	19,490	77.91	77.78	77.97	79.02
B1GREEK	Involved in Greek life during undergraduate education	19,490	77.47	77.29	77.55	79.06
B1HAVEDEPM00	Have any dependents, month of BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM01	Have any dependents, 1 month after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM02	Have any dependents, 2 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM03	Have any dependents, 3 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM04	Have any dependents, 4 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM05	Have any dependents, 5 months after BA completion	19,490	75.69	75.77	75.99	73.27

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1HAVEDEPM06	Have any dependents, 6 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM07	Have any dependents, 7 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM08	Have any dependents, 8 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM09	Have any dependents, 9 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM10	Have any dependents, 10 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM11	Have any dependents, 11 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HAVEDEPM12	Have any dependents, 12 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1HIDEG	Highest degree enrollment, within 12 months after BA completion: degree type	4,550	85.78	85.90	88.11	71.83
B1HIDGASST	Highest degree enrollment, within 12 months after BA completion: Had assistantships or fellowships	4,550	43.36	42.52	46.45	37.01
B1HIDGEMPAID	Highest degree enrollment, within 12 months after BA completion: Used employer tuition assistance	4,550	43.36	42.52	46.45	37.01
B1HIDGGIFT	Highest degree enrollment, within 12 months after BA completion: Used personal loan or gift	4,550	43.36	42.52	46.45	37.01
B1HIDGGRANT	Highest degree enrollment, within 12 months after BA completion: Used grants or scholarships	4,550	43.36	42.52	46.45	37.01
B1HIDGONLIN	Highest degree enrollment, within 12 months after BA completion: Took online courses	4,550	43.35	42.46	46.55	36.96
B1HIDGOTHAID	Highest degree enrollment, within 12 months after BA completion: Used other financial aid type	4,550	43.36	42.52	46.45	37.01
B1HIDGPOCKET	Highest degree enrollment, within 12 months after BA completion: Used own money	4,550	43.36	42.52	46.45	37.01
B1HIDGPRIV	Highest degree enrollment, within 12 months after BA completion: Used private loans	4,550	43.36	42.52	46.45	37.01
B1HIDGWRKSDY	Highest degree enrollment, within 12 months after BA completion: Had federal work-study	4,550	43.36	42.52	46.45	37.01
B1HOMOWE	Amount owed on mortgage for primary residence, as of B&B:16/17 interview	7,420	32.51	30.50	30.50	53.65
B1HOMVAL	Value of residence, as of B&B:16/17 interview	7,420	33.09	31.16	30.94	54.06
B1HOTH	Household composition: Living with other types of individuals, as of B&B:16/17 interview	19,490	77.86	77.62	78.07	79.29
B1HOURST1ST	First job, within 12 months after BA completion: Average starting hours	17,600	89.56	89.77	89.37	88.31
B1HOURSTRCNT	Most recent job, within 12 months after BA completion: Average starting hours	17,600	89.41	89.48	89.47	88.33
B1HOUSE	Housing status, as of B&B:16/17 interview	19,490	76.88	76.71	77.05	77.83
B1HPERCNT	Most recent teaching job, within 12 months after BA completion: Taught health/physical education	3,320	16.91	16.86	17.55	13.25

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1HRCHNG1ST	First job, within 12 months after BA completion: Number of hours changes	17,600	89.15	89.27	89.12	88.10
B1HRCHNGRCNT	Most recent job, within 12 months after BA completion: Number of hours changes	17,600	89.08	89.07	89.24	88.23
B1HRS12RCNT	Most recent job, within 12 months after BA completion: Hours worked in month 12	17,600	89.17	89.21	89.30	88.09
B1INCHO	Satisfaction with quality of undergraduate education, as of B&B:16/17 interview	19,490	77.99	77.83	78.08	79.13
B1INCOM	Gross income, 2016 calendar year	19,490	70.02	70.12	69.42	71.95
B1INCSP	Spouse or domestic partner's gross income, 2016 calendar year	9,020	40.41	39.67	37.25	56.55
B1IND01	Participated in formal teacher induction program in first teaching job since 2015–16 BA	3,340	17.80	17.93	18.00	14.53
B1INDU1ST	First employer, within 12 months after BA completion: Industry	17,600	90.94	91.02	91.02	89.70
B1INDURCNT	Most recent employer, within 12 months after BA completion: Industry	17,600	90.15	90.13	90.37	89.26
B1INFLACCT	Teaching influences, as of B&B:16/17 interview: Teacher accountability	3,340	17.84	17.96	18.05	14.53
B1INFLADV	Teaching influences, as of B&B:16/17 interview: Possibilities for career advancement	3,340	17.82	17.93	18.05	14.53
B1INFLCONT	Teaching influences, as of B&B:16/17 interview: Opportunity to contribute to society	3,340	17.84	17.96	18.05	14.53
B1INFLFIN	Teaching influences, as of B&B:16/17 interview: Financial compensation	3,340	17.84	17.96	18.05	14.53
B1INFLKIDS	Teaching influences, as of B&B:16/17 interview: Working with kids	3,340	17.83	17.96	18.04	14.53
B1INFLPRES	Teaching influences, as of B&B:16/17 interview: Prestige of occupation	3,340	17.84	17.96	18.05	14.53
B1INFWK	Had informal work between BA completion and June 2017	19,490	74.80	74.46	75.41	75.39
B1INFWKEN	Earnings from informal work, between BA completion and June 2017	6,600	28.90	28.19	32.13	18.30
B1INTERN	Had a paid internship, within 12 months after BA completion	17,600	91.44	91.47	91.63	90.18
B1INTERN1ST	First job, within 12 months after BA completion: Internship	17,600	90.75	90.85	90.79	89.46
B1INTERNRCNT	Most recent job, within 12 months after BA completion: Internship	17,600	90.23	90.19	90.50	89.26
B1JOBPRIOR1ST	First job, within 12 months after BA completion: Held job prior to BA completion	17,600	90.96	91.03	91.06	89.72
B1JOBPRIORRCNT	Most recent job, within 12 months after BA completion: Held job prior to BA completion	17,600	90.34	90.30	90.59	89.45
B1LANGS	Second language, as of B&B:16/17 interview	19,490	76.82	76.62	77.07	77.70
B1LEVRCNT	Most recent school, within 12 months after BA completion: Level	3,310	12.47	12.81	12.41	7.92
B1LFP12M	Employment and enrollment status 12 months after BA completion	19,490	91.23	91.38	91.07	90.47
B1LGBTQ	Sexual orientation, as of B&B:16/17 interview	19,490	76.73	76.62	76.85	77.26

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1LICREQ1ST	First job, within 12 months after BA completion: License required for work	17,600	71.10	70.97	71.45	70.78
B1LICREQRCNT	Most recent job, within 12 months after BA completion: License required for work	17,600	70.76	70.53	71.28	70.63
B1LKCOL	Job search activities, between BA completion and June 2017: Talked to coworkers or mentors	13,760	66.97	66.71	67.29	68.06
B1LKEMA	Job search activities, between BA completion and June 2017: Used an employment agency	13,760	66.97	66.71	67.29	68.06
B1LKFAC	Job search activities, between BA completion and June 2017: Talked to faculty members or alumni	13,760	66.97	66.71	67.29	68.06
B1LKFAM	Job search activities, between BA completion and June 2017: Talked to friends or family members	13,760	66.97	66.71	67.29	68.06
B1LKINT	Job search activities, between BA completion and June 2017: Completed an internship	13,760	66.97	66.71	67.29	68.06
B1LKONL	Job search activities, between BA completion and June 2017: Searched online job postings	13,760	66.97	66.71	67.29	68.06
B1LKOTH	Job search activities, between BA completion and June 2017: Other	13,760	66.97	66.71	67.29	68.06
B1LKWKM00	Looked for work, month of BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM01	Looked for work 1 month after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM02	Looked for work 2 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM03	Looked for work 3 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM04	Looked for work 4 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM05	Looked for work 5 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM06	Looked for work 6 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM07	Looked for work 7 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM08	Looked for work 8 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM09	Looked for work 9 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM10	Looked for work 10 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM11	Looked for work 11 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LKWKM12	Looked for work 12 months after BA completion	19,490	76.58	76.37	76.81	77.69
B1LNGCAR	Used non-English language in a job since BA completion, as of B&B:16/17 interview	9,300	48.57	47.17	51.88	45.41
B1LOCRCNT	Most recent school, within 12 months after BA completion: Locale	3,320	12.51	12.88	12.42	7.92
B1LSAT	Took LSAT, as of June 2017	19,490	77.91	77.78	77.97	79.02

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1LVCAR	Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with teaching as a career or wanted to pursue another career	5,330	19.76	18.46	22.38	19.88
B1LVCOND	Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with workplace conditions	5,330	19.76	18.46	22.38	19.88
B1LVLAID	Reasons left teaching, as of B&B:16/17 interview: Laid off	5,330	19.76	18.46	22.38	19.88
B1LVOTH	Reasons left teaching, as of B&B:16/17 interview: Other	5,330	19.76	18.46	22.38	19.88
B1LVPERS	Reasons left teaching, as of B&B:16/17 interview: Personal life reasons	5,330	19.76	18.46	22.38	19.88
B1LVSAL	Reasons left teaching, as of B&B:16/17 interview: Inadequate salary and/or benefits	5,330	19.76	18.46	22.38	19.88
B1LVSCHL	Reasons left teaching, as of B&B:16/17 interview: Returned to school	5,330	19.76	18.46	22.38	19.88
B1LVTRSF	Reasons left teaching, as of B&B:16/17 interview: Involuntarily transferred	5,330	19.76	18.46	22.38	19.88
B1MAJCHO	Satisfaction with choice of undergraduate major, as of B&B:16/17 interview	19,490	77.86	77.70	77.94	79.15
B1MAJORS4Y	BA major (detailed), 2015-16	19,490	99.57	99.53	99.63	99.66
B1MARCHB	Family status 12 months after BA completion (considering all dependents)	19,490	75.61	75.72	75.93	72.88
B1MARR	Marital status, as of B&B:16/17 interview	19,490	93.70	93.03	94.27	97.95
B1MARRM00	Marital status, month of BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM01	Marital status, 1 month after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM02	Marital status, 2 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM03	Marital status, 3 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM04	Marital status, 4 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM05	Marital status, 5 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM06	Marital status, 6 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM07	Marital status, 7 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM08	Marital status, 8 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM09	Marital status, 9 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM10	Marital status, 10 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM11	Marital status, 11 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MARRM12	Marital status, 12 months after BA completion	19,490	77.92	77.78	78.05	78.77
B1MATRCNT	Most recent teaching job, within 12 months after BA completion: Taught math/computer science	3,320	16.91	16.86	17.55	13.25
B1MCAT	Took MCAT, as of June 2017	19,490	77.91	77.78	77.97	79.02
B1MEMPM00	Employed, month of BA completion	19,490	94.90	94.98	94.76	94.84
B1MEMPM01	Employed 1 month after BA completion	19,490	94.94	95.01	94.80	94.91
B1MEMPM02	Employed 2 months after BA completion	19,490	94.94	95.00	94.82	94.85
B1MEMPM03	Employed 3 months after BA completion	19,490	94.94	94.99	94.83	94.87
B1MEMPM04	Employed 4 months after BA completion	19,490	94.87	94.93	94.76	94.88
B1MEMPM05	Employed 5 months after BA completion	19,490	94.86	94.90	94.78	94.86
B1MEMPM06	Employed 6 months after BA completion	19,490	94.87	94.91	94.78	94.86

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1MEMPM07	Employed 7 months after BA completion	19,490	94.86	94.90	94.78	94.86
B1MEMPM08	Employed 8 months after BA completion	19,490	94.84	94.86	94.79	94.84
B1MEMPM09	Employed 9 months after BA completion	19,490	94.80	94.80	94.79	94.84
B1MEMPM10	Employed 10 months after BA completion	19,490	94.80	94.80	94.79	94.82
B1MEMPM11	Employed 11 months after BA completion	19,490	94.79	94.80	94.76	94.82
B1MEMPM12	Employed 12 months after BA completion	19,490	94.81	94.82	94.77	94.89
B1MTGAMT	Monthly rent or mortgage payment amount, as of B&B:16/17 interview	19,490	76.52	76.35	76.73	77.26
B1NDCWK	Enrolled in nondegree coursework between BA completion and June 2017	19,490	77.86	77.71	77.93	79.11
B1NEMPBW	Spent time taking a break from work during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.10	36.75	40.91	39.19
B1NEMPCC	Spent time caring for children during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.10	36.75	40.91	39.19
B1NEMPCF	Spent time caring for family during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.10	36.75	40.91	39.19
B1NEMPHI	Spent time with personal health issues during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.10	36.75	40.91	39.19
B1NEMPLW	Spent time looking for work during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.10	36.75	40.91	39.21
B1NEMPSE	Spent time doing something else during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.10	36.75	40.91	39.19
B1NEMPUI	Spent time in an unpaid internship during non-working and non-enrollment spans, between BA completion and June 2017	6,320	38.14	36.81	40.91	39.19
B1NPCHNM	Number of times changed major for BA degree	19,490	98.11	98.37	98.04	95.72
B1NPCONT	Breaks in attendance from BA-granting institution	19,490	77.99	77.85	78.03	79.38
B1NPOMAJ	Original BA degree major	5,210	81.75	82.46	81.79	61.92
B1NSF19B	Ever had a job that was closely related to major or field of study, within 12 months after BA completion	17,600	80.25	80.08	80.86	78.96
B1NSF19B1ST	First job, within 12 months after BA completion: Related to bachelor's degree program	17,600	70.93	70.84	71.20	70.50
B1NSF19BRCNT	Most recent job, within 12 months after BA completion: Related to BA degree program	17,600	70.61	70.39	71.12	70.34
B1NSFA1ST	First job, within 12 months after BA completion: Requires a BA	17,600	70.78	70.65	71.10	70.43
B1NSFARCNT	Most recent job, within 12 months after BA completion: Requires a BA	17,600	70.47	70.20	71.06	70.32
B1NUMCRD	Number of credit cards, as of B&B:16/17 interview	19,490	75.66	75.56	75.83	75.90
B1NUMEMP	Number of employers, within 12 months after BA completion	19,490	92.32	92.31	92.48	91.58

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1NUMINST	Number of institutions attended before BA completion	19,490	77.12	76.98	77.20	78.21
B1NUMNCD	Number of nonchild dependents, 12 months after BA completion	19,490	75.69	75.77	75.99	73.27
B1NUMP1ST	First employer, within 12 months after BA completion: Number of employees	17,600	85.53	85.42	85.74	85.62
B1NUMPRCNT	Most recent employer, within 12 months after BA completion: Number of employees	17,600	70.51	70.22	71.17	70.25
B1NUTRNACC	Successfully transferred credits to BA-granting institution	9,350	76.39	78.01	73.10	72.94
B1NUTRNCRD	Ever attempted to transfer credits to BA-granting institution	9,880	78.21	79.66	75.03	76.14
B1OCC33RCNT	Most recent job, within 12 months after BA completion: Occupation, 33 categories	17,600	82.70	82.81	82.01	85.02
B1OTHRCNT	Most recent teaching job, within 12 months after BA completion: Taught other unspecified subject	3,320	16.91	16.86	17.55	13.25
B1OTREL	Household composition: Living with other relatives, as of B&B:16/17 interview	19,490	77.86	77.62	78.07	79.29
B1PARIL	Household composition: Living with parents or in-laws, as of B&B:16/17 interview	19,490	77.86	77.62	78.07	79.29
B1PAY1ST	First job, within 12 months after BA completion: Satisfaction with compensation	17,600	70.84	70.72	71.21	70.27
B1PAYCHG1ST	First job, within 12 months after BA completion: Number of pay changes	17,600	89.79	90.12	89.39	88.27
B1PAYCHGRCNT	Most recent job, within 12 months after BA completion: Number of pay changes	17,600	89.36	89.48	89.33	88.21
B1PAYRCNT	Most recent job, within 12 months after BA completion: Satisfaction with compensation	17,600	70.52	70.24	71.18	70.26
B1PIPLN	Teacher pipeline status, as of B&B:16/17 interview	19,490	78.78	78.92	78.53	78.50
B1PMINRCNT	Most recent school, within 12 months after BA completion: Percent minority	3,320	11.94	12.24	11.89	7.92
B1POSRCNT	Most recent teaching job, within 12 months after BA completion: Teaching position type	3,760	26.07	26.54	25.75	21.21
B1PRACT	Participated in a practicum during undergraduate education	19,490	77.68	77.52	77.75	79.09
B1PREFT1ST	First job, within 12 months after BA completion: Prefer to work more hours	7,720	36.67	37.62	36.41	25.85
B1PREFTRCNT	Most recent job, within 12 months after BA completion: Prefer to work more hours	5,310	38.73	38.98	40.29	26.94
B1PREKRCNT	Most recent teaching job, within 12 months after BA completion: Taught early childhood education (preK)	3,320	16.91	16.86	17.55	13.25
B1PRSBRCNT	Most recent teaching job, within 12 months after BA completion: Felt prepared to teach all subjects taught	3,320	16.99	16.91	17.66	13.31
B1PSE_BA	Months between initial enrollment in PSE and BA completion	19,490	92.56	92.61	93.07	89.44
B1PUPRRCNT	Most recent school, within 12 months after BA completion: Control (public/private)	3,320	12.51	12.88	12.42	7.92
B1REC	Involved in intramural or recreational sports during undergraduate education	19,490	77.57	77.41	77.63	78.94

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1REGION	Region of residence, as of B&B:16/17 interview	19,490	92.36	92.95	90.98	92.95
B1RETEMP	Had an employer-based retirement account, as of B&B:16/17 interview	19,490	72.10	71.86	72.42	73.02
B1RETNON	Had a non-employer-based retirement account, as of B&B:16/17 interview	19,490	68.54	68.52	68.43	69.37
B1RLTINT1ST	First job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op	17,600	78.62	78.69	77.67	82.84
B1RLTINTRCNT	Most recent job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op	17,600	78.06	77.97	77.39	82.57
B1RSEMP	Reason for non-degree coursework between BA completion and June 2017: Needed for employment	4,690	16.38	16.64	16.50	12.72
B1RSGOAL	Reason for non-degree coursework between BA completion and June 2017: Career goals	4,690	16.38	16.64	16.50	12.72
B1RSLTED	Reason for non-degree coursework between BA completion and June 2017: Education goals	4,690	16.38	16.64	16.50	12.72
B1RSOTH	Reason for non-degree coursework between BA completion and June 2017: Other	4,690	16.38	16.64	16.50	12.72
B1RSPERS	Reason for non-degree coursework between BA completion and June 2017: Personal enrichment	4,690	16.38	16.64	16.50	12.72
B1SAL12RCNT	Most recent job, within 12 months after BA completion: Monthly salary in month 12	17,600	89.03	89.23	88.92	87.33
B1SALEMP	Ever was a salaried employee, within 12 months after BA completion	17,600	90.83	90.93	90.88	89.47
B1SALEMP1ST	First job, within 12 months after BA completion: Salaried employee	17,600	90.80	90.92	90.80	89.54
B1SALEMPRCNT	Most recent job, within 12 months after BA completion: Salaried employee	17,600	89.97	90.00	90.09	88.96
B1SAMESTATE	Ever employed in same state as bachelor's degree-granting institution, within 12 months after BA completion	17,600	69.29	67.85	71.32	74.72
B1SAMESTATE1ST	First employer, within 12 months after BA completion: Located in the same state as bachelor's degree-granting institution	17,600	83.53	83.39	83.83	83.57
B1SAMESTATERCNT	Most recent employer, within 12 months after BA completion: Located in the same state as BA-granting institution	17,600	64.61	64.45	64.88	64.89
B1SCIRCNT	Most recent teaching job, within 12 months after BA completion: Taught natural sciences	3,320	16.91	16.86	17.55	13.25
B1SEC1ST	First job, within 12 months after BA completion: Satisfaction with job security	17,600	70.78	70.63	71.18	70.36
B1SECERCNT	Most recent teaching job, within 12 months after BA completion: Taught general education (middle/secondary grades)	3,320	16.91	16.86	17.55	13.25
B1SECRCNT	Most recent job, within 12 months after BA completion: Satisfaction with job security	17,600	70.48	70.19	71.14	70.28
B1SECT	First postsecondary institution control and level	19,490	76.67	76.61	76.75	76.87

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1SEDRCNT	Most recent teaching job, within 12 months after BA completion: Taught special education	3,320	16.91	16.86	17.55	13.25
B1SELLPO	Financial result if respondent were to sell all major possessions, turn all investments and other assets into cash, and pay off all debts, as of B&B:16/17 interview	19,490	76.12	75.95	76.33	76.94
B1SFRBFGF	Sharing financial responsibilities with boyfriend or girlfriend, as of B&B:16/17 interview	19,490	80.67	79.73	81.25	87.64
B1SFRFRRM	Sharing financial responsibilities with friends or roommates, as of B&B:16/17 interview	19,490	80.67	79.73	81.25	87.64
B1SFROTHERS	Sharing financial responsibilities with other types of individuals, as of B&B:16/17 interview	19,490	80.67	79.73	81.25	87.64
B1SFRPARENTS	Sharing financial responsibilities with parents, as of B&B:16/17 interview	19,490	80.67	79.73	81.25	87.64
B1SFRRELATIVES	Sharing financial responsibilities with a sibling, as of B&B:16/17 interview	19,490	80.67	79.73	81.25	87.64
B1SFRSPOUSE	Sharing financial responsibilities with spouse or domestic partner, as of B&B:16/17 interview	19,490	80.67	79.73	81.25	87.64
B1SOCRCNT	Most recent teaching job, within 12 months after BA completion: Taught social sciences	3,320	16.91	16.86	17.55	13.25
B1SPAMT	Spouse or domestic partner's student loans: Amount borrowed, as of B&B:16/17 interview	5,870	55.13	55.51	52.28	61.25
B1SPCOL	Spouse or domestic partner attended college or graduate school, 2016–17 school year	6,900	66.83	66.73	63.66	76.07
B1SPEMP	Spouse or domestic partner ever employed, 2016 calendar year	9,020	46.99	46.17	43.86	63.62
B1SPLNPY	Spouse or domestic partner's student loans: Monthly payment, as of B&B:16/17 interview	3,630	34.74	35.75	31.40	38.15
B1SPLV	Spouse or domestic partner's education level, as of B&B:16/17 interview	6,900	64.70	64.35	62.17	73.78
B1SPODP	Household composition: Living with spouse or domestic partner, as of B&B:16/17 interview	19,490	77.86	77.62	78.07	79.29
B1SPOWE	Spouse or domestic partner's student loans: Amount owed, as of B&B:16/17 interview	3,950	37.99	38.94	34.35	42.85
B1STEMOC	Ever employed in a STEM occupation, within 12 months after BA completion	17,600	79.50	79.86	78.07	83.10
B1STRESS	Had financial difficulty, within the 12 months before B&B:16/17 interview	19,490	76.54	76.37	76.75	77.24
B1STSAL1ST	First job, within 12 months after BA completion: Starting annualized pay	17,600	87.25	87.53	86.73	86.74
B1STSALRCNT	Most recent job, within 12 months after BA completion: Starting annualized pay	17,600	87.51	87.73	87.12	87.17
B1SUBGRE	Took GRE Subject Test, as of June 2017	19,490	77.91	77.78	77.97	79.02
B1TCHM00	Worked as a teacher, month of BA completion	19,490	99.70	99.67	99.74	99.84
B1TCHM01	Worked as a teacher, 1 month after BA completion	19,490	99.65	99.62	99.69	99.84

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1TCHM02	Worked as a teacher, 2 months after BA completion	19,490	99.61	99.61	99.56	99.85
B1TCHM03	Worked as a teacher, 3 months after BA completion	19,490	99.61	99.59	99.59	99.89
B1TCHM04	Worked as a teacher, 4 months after BA completion	19,490	99.61	99.59	99.58	99.89
B1TCHM05	Worked as a teacher 5, months after BA completion	19,490	99.58	99.57	99.55	99.89
B1TCHM06	Worked as a teacher, 6 months after BA completion	19,490	99.60	99.53	99.69	99.89
B1TCHM07	Worked as a teacher, 7 months after BA completion	19,490	99.63	99.58	99.69	99.89
B1TCHM08	Worked as a teacher, 8 months after BA completion	19,490	99.63	99.61	99.64	99.88
B1TCHM09	Worked as a teacher, 9 months after BA completion	19,490	99.63	99.61	99.63	99.86
B1TCHM10	Worked as a teacher, 10 months after BA completion	19,490	99.61	99.58	99.63	99.89
B1TCHM11	Worked as a teacher, 11 months after BA completion	19,490	99.60	99.56	99.62	99.89
B1TCHM12	Worked as a teacher, 12 months after BA completion	19,490	99.60	99.54	99.66	99.89
B1TCHOCC	Ever employed in teaching occupation, within 12 months after BA completion	17,600	86.19	86.39	85.75	86.28
B1TEACHR	Regular, long-term substitute, or support teacher, within 12 months after BA completion	19,490	87.64	87.51	87.33	90.51
B1TJBNUM	Number of teaching jobs held, within 12 months after BA completion	19,490	89.54	89.65	89.00	91.04
B1TTLIRCNT	Most recent school, within 12 months after BA completion: Title I eligible	3,230	11.02	11.76	10.08	6.83
B1UGCARPREP	Studies at BA-granting institution prepared respondent for future career, as of NPSAS:16 interview	19,490	72.17	71.40	73.93	71.36
B1UGCARSRVS1	Utilized searchable job database from career planning services at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS2	Utilized career counseling from career planning services at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS3	Utilized online career or personality assessments from career planning services at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS4	Participated in career/job fairs at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS5	Participated in career planning services' mock interviews at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS6	Utilized resume or cover letter assistance from career planning services at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS7	Utilized alumni network from career planning services at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1UGCARSRVS8	Utilized another type of career planning service at BA-granting institution, as of NPSAS:16 interview	19,490	72.03	71.28	73.75	71.25
B1UGCARSRVS9	Did not use career planning services at BA-granting institution, as of NPSAS:16 interview	19,490	72.05	71.30	73.80	71.31
B1UGEXOCC33	Occupation code for expected occupation, as of NPSAS:16 interview (33 categories)	18,380	68.63	67.80	70.22	69.39
B1UGGRADAPP	Applied to graduate school before BA completion	18,990	70.85	70.08	72.48	70.92
B1UGGRDATND	Likelihood will attend graduate school within the next 12 months, as of NPSAS:16 interview	11,200	53.46	52.60	55.80	50.72
B1UGGRDPLN	Likelihood will apply to graduate school within the next 12 months, as of NPSAS:16 interview	15,680	64.89	64.08	66.33	66.39
B1UGLEADER	Held a formal leadership role during undergraduate education	19,490	72.27	71.45	74.11	71.64
B1UGLEARNCOMM	Participated in a learning community during undergraduate education	19,490	72.16	71.33	74.03	71.49
B1UGOCCCOM	Likelihood of entering expected occupation, as of NPSAS:16 interview	18,380	71.13	70.31	72.85	71.17
B1UGPINTERN	Participated in a paid internship during undergraduate education	19,490	77.77	77.54	78.02	78.96
B1UGRESEARCH	Participated in a research project with a faculty member during undergraduate education	19,490	72.15	71.32	74.05	71.44
B1UGSREXP	Participated in a culminating senior experience during undergraduate education	19,490	72.26	71.41	74.17	71.60
B1UGUINTERN	Participated in an unpaid internship during undergraduate education	19,490	77.81	77.66	77.86	79.13
B1UGWKPLN	Plans for work after graduation, as of NPSAS:16 interview	19,490	84.42	83.77	84.54	90.64
B1VAR	Involved in intercollegiate sports during undergraduate education	19,490	77.40	77.23	77.46	79.01
B1VOCRCNT	Most recent teaching job, within 12 months after BA completion: Taught vocational/career/technical education	3,320	16.91	16.86	17.55	13.25
B1VTNEL	Voted in 2016 presidential election	18,690	77.11	76.90	77.39	77.82
B1VYHRS	Number of hours volunteered, within the 12 months before B&B:16/17 interview	19,490	73.89	73.78	73.83	75.42
B1WORTH	Undergraduate education worth the financial cost, as of B&B:16/17 interview	19,490	77.93	77.77	78.04	79.03
B1WRKS	Primarily student or employee while concurrently employed and enrolled, between BA completion and June 2017	7,770	20.30	20.32	20.65	18.29
B1WYFR1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities	7,600	37.49	38.37	37.37	26.70
B1WYFRRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities	5,310	38.76	38.96	40.40	27.12
B1WYMLJ1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job	7,600	37.49	38.37	37.37	26.70

See notes at end of table.

Table K-1. Weighted item response rates for all students and by control of institution: 2017—Continued

Variable	Variable label	Sample size	All students	Public institution	Private nonprofit institution	Private for-profit institution
B1WYMLJRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job	5,310	38.76	38.96	40.40	27.12
B1WYNJA1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available	7,600	37.49	38.37	37.37	26.70
B1WYNJARCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available	5,310	38.76	38.96	40.40	27.12
B1WYNOH1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours	7,600	37.49	38.37	37.37	26.70
B1WYNOHRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours	5,310	38.76	38.96	40.40	27.12
B1WYOTH1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason	7,600	37.49	38.37	37.37	26.70
B1WYOTHRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason	5,310	38.76	38.96	40.40	27.12
B1WYSCH1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school	7,600	37.49	38.37	37.37	26.70
B1WYSCHRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school	5,310	38.76	38.96	40.40	27.12
B1YRSAL12RCNT	Most recent job, within 12 months after BA completion: Annualized salary based on month 12	17,600	89.03	89.23	88.92	87.33
BORAMT1	Cumulative amount borrowed for undergrad	19,490	80.56	80.37	80.21	84.44
DEGPRBA	Prior degree: Bachelor's	19,490	97.43	97.72	97.52	94.02
DEPEND	Dependency status in 2015–16 academic year	18,990	92.87	92.26	92.91	99.37
DEPEND5B	Family status in 2016	19,490	96.37	96.55	95.76	97.57
FEDCUM1	Cumulative federal loan amount for undergrad	19,490	100.00	100.00	100.00	100.00
GENDER	Sex	19,490	100.00	100.00	100.00	100.00
NFEDCUM1	Cumulative non-federal loan amount for undergrad	19,490	80.56	80.37	80.21	84.44
PAREDUC	Highest education attained by either parent	19,490	77.23	77.12	75.89	85.11
PELLCUM	Cumulative amount of Pell grant funds ever received	19,490	100.00	100.00	100.00	100.00
RACE	Race/ethnicity	19,490	97.61	97.92	96.77	98.60
VETERAN	Veteran's status in 2015–16 year	19,490	100.00	100.00	100.00	100.00

NOTE: PreK = prekindergarten. ESL = English as a Second Language. TEACH = Teacher Education Assistance for College and Higher Education. NPSAS = National Postsecondary Student Aid Study. GMAT = Graduate Management Admission Test. GPA = Grade point average. GRE = Graduate Record Examination. LSAT = Law School Admission Test. MCAT = Medical College Admission Test. PSE = postsecondary education. STEM = Science, Technology, Engineering and Mathematics.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17).

Table K-2. Means of continuous variables before and after imputation: 2017

Variable	Variable label	Mean before imputation	Mean after imputation	Difference	Percent relative difference
B1BOCOM1ST	First job, within 12 months after BA completion: Amount of annualized tips, bonus, or commissions	1,826.49	1,823.62	2.87	0.16
B1BOCOMRCNT	Most recent job, within 12 months after BA completion: Amount of annualized tips, bonus, or commissions	1,850.40	1,824.07	26.33	1.44
B1CARLOAN	Monthly vehicle loan or lease payment, as of B&B:16/17 interview	155.75	154.93	0.82	0.53
B1CRDBAL	Credit card balance, as of B&B:16/17 interview	1,766.69	1,753.77	12.92	0.74
B1CSTDYCR	Monthly childcare costs, as of B&B:16/17 interview	223.95	222.84	1.11	0.50
B1DEP2	Number of dependent children, 12 months after BA completion	0.24	0.26	-0.02*	-8.09
B1DEPAGEHIGH	Age of oldest dependent child, 12 months after BA completion	9.23	9.26	-0.03	-0.28
B1DEPAGELOW	Age of youngest dependent child, 12 months after BA completion	6.47	6.46	0.01	0.14
B1FRPLRCNT	Most recent school, within 12 months after BA completion: Percent free or reduced price lunch eligible	55.00	54.93	0.07	0.13
B1FTRBEGSAL	Estimated expected beginning salary, as of NPSAS:16 interview	38,617.03	38,433.65	183.38	0.48
B1FTRHIGHSAL	Estimated highest possible beginning salary, as of NPSAS:16 interview	60,212.45	61,255.07	-1,042.62	-1.70
B1FTRLOWSAL	Estimated lowest possible beginning salary, as of NPSAS:16 interview	31,551.48	30,939.92	611.56*	1.98
B1GPA	Overall GPA for 2015–16 BA degree	3.29	3.29	-0.00*	-0.10
B1HOMOWE	Amount owed on mortgage for primary residence, as of B&B:16/17 interview	140,610.30	140,496.60	113.68	0.08
B1HOMVAL	Value of residence, as of B&B:16/17 interview	227,340.50	227,999.00	-658.55	-0.29
B1HOURST1ST	First job, within 12 months after BA completion: Average starting hours	34.18	33.72	0.45*	1.34
B1HOURSTRCNT	Most recent job, within 12 months after BA completion: Average starting hours	31.98	31.46	0.52*	1.65
B1HRCHNG1ST	First job, within 12 months after BA completion: Number of hours changes	0.33	0.35	-0.02*	-4.74
B1HRCHNGRCNT	Most recent job, within 12 months after BA completion: Number of hours changes	0.30	0.33	-0.03*	-10.17
B1HRS12RCNT	Most recent job, within 12 months after BA completion: Hours worked in month 12	31.56	31.25	0.32*	1.01
B1INCOM	Gross income, 2016 calendar year	24,242.89	24,079.26	163.63	0.68
B1INCSP	Spouse or domestic partner's gross income, 2016 calendar year	36,662.35	37,474.74	-812.39	-2.17
B1INFWKEN	Earnings from informal work, between BA completion and June 2017	1,806.55	1,917.14	-110.59	-5.77
B1MTGAMT	Monthly rent or mortgage payment amount, as of B&B:16/17 interview	639.49	638.97	0.52	0.08
B1NPCHNM	Number of times changed major for BA degree	0.40	0.40	0.00*	0.62
B1NUMCRD	Number of credit cards, as of B&B:16/17 interview	1.97	1.96	0.01	0.58
B1NUMEMP	Number of employers, within 12 months after BA completion	1.36	1.37	0.00	-0.24
B1NUMINST	Number of institutions attended before BA completion	1.76	1.75	0.01*	0.83

See notes at end of table.

Table K-2. Mean values of continuous variables before and after imputation: 2017—Continued

Variable	Variable label	Mean before imputation	Mean after imputation	Difference	Percent relative difference
B1NUMNCD	Number of nonchild dependents, 12 months after BA completion	0.02	0.02	0.00	-2.90
B1PAYCHG1ST	First job, within 12 months after BA completion: Number of pay changes	0.44	0.45	-0.01*	-1.61
B1PAYCHGRCNT	Most recent job, within 12 months after BA completion: Number of pay changes	0.42	0.44	-0.01*	-3.13
B1PMINRCNT	Most recent school, within 12 months after BA completion: Percent minority	47.86	48.31	-0.44	-0.92
B1PSE_BA	Months between initial enrollment in PSE and BA completion	76.21	75.98	0.23	0.31
B1SAL12RCNT	Most recent job, within 12 months after BA completion: Monthly salary in month 12	2,730.17	2,681.03	49.14*	1.83
B1STSAL1ST	First job, within 12 months after BA completion: Starting annualized pay	32,130.21	31,387.70	742.52*	2.37
B1STSALRCNT	Most recent job, within 12 months after BA completion: Starting annualized pay	32,886.52	32,024.90	861.62*	2.69
B1TJBNUM	Number of teaching jobs held, within 12 months after BA completion	0.08	0.08	0.00*	3.48
B1VYHRS	Number of hours volunteered, within the 12 months before B&B:16/17 interview	39.25	40.06	-0.82	-2.04

* $p < .05$

NOTE: Means were computed using the B&B:16/17 final analysis weight. 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. NPSAS = National Postsecondary Student Aid Study. GPA = Grade point average. PSE = postsecondary education.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate & Beyond Longitudinal Study (B&B:16/17).

Table K-3. Distributions of categorical variables before and after imputation: 2017

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1AFFCHLD	Result of financial cost of undergraduate and graduate education: Delayed having children, as of B&B:16/17 interview	0	No	78.24	77.80	0.44	0.57
		1	Yes	21.76	22.20	-0.44	-1.98
B1AFFEDJB	Result of financial cost of undergraduate and graduate education: Took job instead of enrolling in additional education, as of B&B:16/17 interview	0	No	71.34	71.31	0.03	0.04
		1	Yes	28.66	28.69	-0.03	-0.10
B1AFFHOME	Result of financial cost of undergraduate and graduate education: Delayed buying a home, as of B&B:16/17 interview	0	No	67.71	67.22	0.49	0.73
		1	Yes	32.29	32.78	-0.49	-1.49
B1AFFLESS	Result of financial cost of undergraduate and graduate education: Took job outside of field of study or a less desirable job, as of B&B:16/17 interview	0	No	56.57	56.30	0.27	0.47
		1	Yes	43.43	43.70	-0.27	-0.61
B1AFFMARR	Result of financial cost of undergraduate and graduate education: Delayed getting married, as of B&B:16/17 interview	0	No	79.15	78.57	0.58*	0.74
		1	Yes	20.85	21.43	-0.58*	-2.72
B1AFFWKMR	Result of financial cost of undergraduate and graduate education: Worked more than desired, as of B&B:16/17 interview	0	No	61.77	61.83	-0.06	-0.09
		1	Yes	38.23	38.17	0.06	0.15
B1ALONE	Household composition: Living alone, as of B&B:16/17 interview	0	No	83.41	83.81	-0.40	-0.48
		1	Yes	16.59	16.19	0.40	2.50

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1APPLY	Ever applied for a preK–12th grade teaching position, as of June 2017	0	Has not prepared or considered teaching	57.59	58.69	-1.10*	-1.87
		1	Has not taught, has not applied, and has not been offered position, but considered teaching	22.68	23.27	-0.59*	-2.54
		2	Has not taught, has applied, and has not been offered position	0.81	0.87	-0.06	-7.42
		3	Has not taught, has applied, and has been offered position	0.54	0.51	0.03	5.00
		4	Has taught at the preK–12th grade level	18.39	16.66	1.73*	10.38
B1ARTRCNT	Most recent teaching job, within 12 months after BA completion: Taught arts/music	0	No	94.26	94.93	-0.68	-0.71
		1	Yes	5.74	5.07	0.68	13.38
B1AWFAM	Respondent's immediate family aware of sexual orientation, as of B&B:16/17 interview	0	None	3.68	4.05	-0.37*	-9.08
		1	Some	3.38	3.39	-0.01	-0.23
		2	Most	92.93	92.56	0.38*	0.41
B1AWSOC	People respondent socializes with aware of sexual orientation, as of B&B:16/17 interview	0	None	1.48	1.86	-0.38*	-20.22
		1	Some	4.70	4.88	-0.19	-3.83
		2	Most	93.82	93.25	0.56*	0.60
B1AWWORK	People respondent works with aware of sexual orientation, as of B&B:16/17 interview	0	None	5.21	5.61	-0.40*	-7.14
		1	Some	6.70	6.63	0.07	1.03
		2	Most	88.09	87.75	0.33	0.38
B1BAL1ST	First job, within 12 months after BA completion: Satisfaction with work-life balance	1	Dissatisfied	14.63	14.85	-0.22	-1.46
		2	Neither dissatisfied nor satisfied	20.41	20.27	0.14	0.69
		3	Satisfied	64.96	64.88	0.08	0.12
B1BALRCNT	Most recent job, within 12 months after BA completion: Satisfaction with work-life balance	1	Dissatisfied	14.17	14.52	-0.34	-2.37
		2	Neither dissatisfied nor satisfied	20.15	20.04	0.12	0.58
		3	Satisfied	65.67	65.45	0.23	0.35

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1BEN1ST	First job, within 12 months after BA completion: Satisfaction with benefits	1	Dissatisfied	24.90	24.56	0.33	1.36
		2	Neither dissatisfied nor satisfied	35.15	34.48	0.67	1.96
		3	Satisfied	39.95	40.96	-1.01*	-2.46
B1BENANY	Ever had a job that offered benefits, within 12 months after BA completion	0	No	36.65	37.91	-1.26*	-3.32
		1	Yes	63.35	62.09	1.26*	2.03
B1BENANY1ST	First job, within 12 months after BA completion: Employer offered any benefits	0	No	50.01	50.76	-0.75*	-1.49
		1	Yes	49.99	49.24	0.75*	1.53
B1BENANYRCNT	Most recent job, within 12 months after BA completion: Employer offered any benefits	0	No	40.64	42.00	-1.37*	-3.25
		1	Yes	59.36	58.00	1.37*	2.36
B1BENBEN	Importance of job factors, as of B&B:16/17 interview: Employer-provided benefits	1	Not at all important	3.71	3.78	-0.07	-1.89
		2	Somewhat important	13.65	13.81	-0.16	-1.18
		3	Important	34.13	33.88	0.25	0.75
		4	Very important	48.51	48.53	-0.02	-0.04
B1BENCOM	Importance of job factors, as of B&B:16/17 interview: Commute	1	Not at all important	3.41	3.51	-0.10	-2.79
		2	Somewhat important	23.35	23.13	0.22	0.95
		3	Important	41.95	42.21	-0.26	-0.61
		4	Very important	31.29	31.15	0.14	0.44
B1BENFLEX	Importance of job factors, as of B&B:16/17 interview: Making decisions	1	Not at all important	3.28	3.40	-0.11	-3.30
		2	Somewhat important	25.74	25.28	0.46	1.80
		3	Important	44.46	44.61	-0.15	-0.33
		4	Very important	26.52	26.72	-0.20	-0.73
B1BENPRO	Importance of job factors, as of B&B:16/17 interview: Promotion opportunities	1	Not at all important	3.84	4.00	-0.16	-3.92
		2	Somewhat important	15.93	15.86	0.07	0.47
		3	Important	35.82	35.74	0.08	0.22
		4	Very important	44.41	44.40	0.01	0.01

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1BENRCNT	Most recent job, within 12 months after BA completion: Satisfaction with benefits	1	Dissatisfied	19.70	19.79	-0.09	-0.47
		2	Neither dissatisfied nor satisfied	31.21	31.58	-0.37	-1.18
		3	Satisfied	49.09	48.63	0.47	0.96
B1BENRELA	Importance of job factors, as of B&B:16/17 interview: Work related to field of study	1	Not at all important	5.18	5.32	-0.14	-2.65
		2	Somewhat important	18.60	18.26	0.34	1.86
		3	Important	32.33	32.56	-0.24	-0.73
		4	Very important	43.90	43.86	0.04	0.09
B1BENSAL	Importance of job factors, as of B&B:16/17 interview: Wages and bonuses	1	Not at all important	0.98	1.09	-0.12	-10.85
		2	Somewhat important	7.44	7.47	-0.02	-0.30
		3	Important	36.03	36.01	0.01	0.04
		4	Very important	55.55	55.43	0.13	0.23
B1CARIND	Ever had a job that was part of career, within 12 months after BA completion	0	No	32.02	31.11	0.91*	2.93
		1	Yes	67.98	68.89	-0.91*	-1.33
B1CARIND1ST	First job, within 12 months after BA completion: Part of a career	0	No	45.76	46.17	-0.41	-0.88
		1	Yes	54.24	53.83	0.41	0.76
B1CARINDRCNT	Most recent job, within 12 months after BA completion: Part of a career	0	No	38.29	39.09	-0.81*	-2.07
		1	Yes	61.71	60.91	0.81*	1.33
B1CERTART	Certified to teach arts/music, as of B&B:16/17 interview	0	No	93.73	93.92	-0.19	-0.21
		1	Yes	6.27	6.08	0.19	3.20
B1CERTENG	Certified to teach English/language arts, as of B&B:16/17 interview	0	No	92.32	92.80	-0.48	-0.52
		1	Yes	7.68	7.20	0.48	6.72
B1CERTESL	Certified to teach ESL, as of B&B:16/17 interview	0	No	96.85	96.82	0.03	0.03
		1	Yes	3.15	3.18	-0.03	-1.05

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1CERTFLG	Certified to teach foreign languages, as of B&B:16/17 interview	0	No	96.81	96.74	0.07	0.07
		1	Yes	3.19	3.26	-0.07	-2.13
B1CERTGENA	Certified to teach elementary education, as of B&B:16/17 interview	0	No	54.24	54.72	-0.48	-0.87
		1	Yes	45.76	45.28	0.48	1.05
B1CERTGENB	Certified to teach general education (middle or secondary grades), as of B&B:16/17 interview	0	No	85.07	86.15	-1.08	-1.26
		1	Yes	14.93	13.85	1.08	7.82
B1CERTHLTH	Certified to teach health/physical education, as of B&B:16/17 interview	0	No	94.96	95.20	-0.24	-0.25
		1	Yes	5.04	4.80	0.24	4.95
B1CERTMTH	Certified to teach math/computer science, as of B&B:16/17 interview	0	No	90.10	90.35	-0.26	-0.28
		1	Yes	9.90	9.65	0.26	2.65
B1CERTOTH	Certified to teach other unspecified subject, as of B&B:16/17 interview	0	No	95.94	96.37	-0.43	-0.45
		1	Yes	4.06	3.63	0.43	11.97
B1CERTPREK	Certified to teach early childhood education (preK), as of B&B:16/17 interview	0	No	78.63	78.53	0.10	0.13
		1	Yes	21.37	21.47	-0.10	-0.46
B1CERTSCI	Certified to teach natural sciences, as of B&B:16/17 interview	0	No	94.37	93.38	0.99	1.06
		1	Yes	5.63	6.62	-0.99	-14.98
B1CERTSOC	Certified to teach social sciences, as of B&B:16/17 interview	0	No	89.57	89.81	-0.24	-0.27
		1	Yes	10.43	10.19	0.24	2.36
B1CERTSPED	Certified to teach special education, as of B&B:16/17 interview	0	No	83.29	83.46	-0.16	-0.20
		1	Yes	16.71	16.54	0.16	0.99
B1CERTVOC	Certified to teach vocational/career/technical education, as of B&B:16/17 interview	0	No	98.92	99.04	-0.12	-0.12
		1	Yes	1.08	0.96	0.12	12.71

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1CLB	Involved in extracurricular club or group during undergraduate education	0	No	40.32	40.48	-0.16	-0.40
		1	Yes	57.03	57.01	0.01	0.02
		2	Not offered	2.65	2.50	0.15*	5.91
B1CLICENSE	Had professional certification or state or industry license, within 12 months after BA completion	0	No	82.40	82.91	-0.51	-0.62
		1	Yes	17.60	17.09	0.51	2.99
B1CONTEMP	Contributed to employer-based retirement account, within the 12 months before B&B:16/17 interview	0	No	15.65	15.44	0.21	1.33
		1	Yes	84.35	84.56	-0.21	-0.24
B1CONTNON	Contributed to non-employer-based retirement savings account, within the 12 months before B&B:16/17 interview	0	No	26.73	27.10	-0.37	-1.37
		1	Yes	73.27	72.90	0.37	0.51
B1COOP	Participated in a co-operative experience during undergraduate education	0	No	89.73	89.81	-0.08	-0.09
		1	Yes	10.27	10.19	0.08	0.82
B1CURBEN1ST	First job, within 12 months after BA completion: Reason for non-career job: To receive benefits	0	No	85.06	84.60	0.47	0.55
		1	Yes	14.94	15.40	-0.47	-3.03
B1CURBENRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To receive benefits	0	No	79.20	79.43	-0.23	-0.29
		1	Yes	20.80	20.57	0.23	1.10
B1CURCRT	Certified to teach, as of B&B:16/17 interview	0	No	95.18	95.14	0.05	0.05
		1	Yes	4.82	4.86	-0.05	-0.97
B1CUREDU1ST	First job, within 12 months after BA completion: Reason for non-career job: To earn money for education	0	No	65.28	64.63	0.65	1.01
		1	Yes	34.72	35.37	-0.65	-1.84

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1CUREDURCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To earn money for education	0	No	63.63	63.45	0.18	0.28
		1	Yes	36.37	36.55	-0.18	-0.49
B1CUREXP1ST	First job, within 12 months after BA completion: Reason for non-career job: To obtain job experience	0	No	57.97	58.27	-0.30	-0.51
		1	Yes	42.03	41.73	0.30	0.72
B1CUREXPRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To obtain job experience	0	No	54.68	55.16	-0.48	-0.87
		1	Yes	45.32	44.84	0.48	1.07
B1CUROTH1ST	First job, within 12 months after BA completion: Reason for non-career job: Other reason	0	No	87.58	87.47	0.11	0.12
		1	Yes	12.42	12.53	-0.11	-0.86
B1CUROTHRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: Other reason	0	No	87.14	87.10	0.03	0.04
		1	Yes	12.86	12.90	-0.03	-0.25
B1CURPAY1ST	First job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills	0	No	30.16	29.74	0.42	1.41
		1	Yes	69.84	70.26	-0.42	-0.60
B1CURPAYRCNT	Most recent job, within 12 months after BA completion: Reason for non-career job: To pay loans or bills	0	No	29.15	29.14	0.01	0.04
		1	Yes	70.85	70.86	-0.01	-0.01
B1DONATE	Donated to 2015–16 BA-granting institution, as of B&B:16/17 interview	0	No	92.54	92.44	0.10	0.11
		1	Yes	7.46	7.56	-0.10	-1.37
B1DPNTS	Household composition: Living with dependents, as of B&B:16/17 interview	0	No	88.63	88.91	-0.28	-0.31
		1	Yes	11.37	11.09	0.28	2.52

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1DUPCRRCNT	Most recent teaching job, within 12 months after BA completion: Took junior/senior courses in primary subject taught	0	No	20.56	18.80	1.76	9.38
		1	Yes	79.44	81.20	-1.76	-2.17
B1EDUIND1ST	First employer, within 12 months after BA completion: Employer education level	0	Employed, but not in education industry	85.18	84.63	0.54*	0.64
		1	Preschool or preK	0.96	1.01	-0.05	-4.83
		2	K–12 school	5.68	5.83	-0.15	-2.59
		3	College, university, trade school, other postsecondary institution	6.48	6.71	-0.23*	-3.49
		4	Education support services (nongovernment)	0.76	0.80	-0.04	-5.00
		5	Other	0.94	1.01	-0.07	-6.59
B1EDUINDRCNT	Most recent employer, within 12 months after BA completion: Level of education industry	0	Employed, but not in education industry	85.97	83.30	2.66*	3.20
		1	Preschool or preK	0.90	1.05	-0.16*	-14.87
		2	K–12 school	5.69	6.84	-1.15*	-16.79
		3	College, university, trade school, other postsecondary institution	5.83	6.91	-1.08*	-15.57
		4	Education support services (nongovernment)	0.70	0.75	-0.05	-6.16
		5	Other	0.91	1.15	-0.24*	-20.78
B1EERCNT	Most recent teaching job, within 12 months after BA completion: Taught elementary education	0	No	63.43	64.47	-1.04	-1.61
		1	Yes	36.57	35.53	1.04	2.93
B1ELNINAW	Teacher loan forgiveness programs influence and participation, as of B&B:16/17 interview	0	Not aware of programs	35.90	36.24	-0.34	-0.95
		1	Aware, did not influence becoming a teacher, and did not participate	39.17	39.90	-0.73	-1.83
		2	Aware, did not influence becoming a teacher, and did participate	17.53	16.97	0.56	3.30
		3	Aware, influenced becoming a teacher, and did not participate	3.95	3.91	0.04	1.00
		4	Aware, influenced becoming a teacher, and did participate	3.46	2.98	0.47	15.85

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1ELNPRT	Teacher loan forgiveness awareness, as of B&B:16/17 interview	0	No	55.80	56.08	-0.28	-0.50
		1	Yes	44.20	43.92	0.28	0.64
B1EMPDIS	Reason not working for pay, between BA completion and June 2017: Disabled	0	No	90.67	90.86	-0.18	-0.20
		1	Yes	9.33	9.14	0.18	2.02
B1EMPHM	Reason not working for pay, between BA completion and June 2017: Homemaker	0	No	74.95	75.87	-0.93	-1.22
		1	Yes	25.05	24.13	0.93	3.83
B1EMPSLF	Ever self-employed, within 12 months after BA completion	0	No	95.00	94.44	0.56*	0.60
		1	Yes	5.00	5.56	-0.56*	-10.14
B1EMPSLF1ST	First employer, within 12 months after BA completion: Self-employed	0	No	96.63	96.11	0.52*	0.54
		1	Yes	3.37	3.89	-0.52*	-13.30
B1EMPSLFRCNT	Most recent employer, within 12 months after BA completion: Self-employed	0	No	96.83	96.27	0.57*	0.59
		1	Yes	3.17	3.73	-0.57*	-15.16
B1EMPTMP	Reason not working for pay, between BA completion and June 2017: Laid off, on leave, or waiting to report to work	0	No	96.28	96.31	-0.03	-0.03
		1	Yes	3.72	3.69	0.03	0.86
B1EMPTRV	Reason not working for pay, between BA completion and June 2017: Traveling	0	No	78.89	79.85	-0.96	-1.21
		1	Yes	21.11	20.15	0.96	4.78
B1EMPTYP1ST	First employer, within 12 months after BA completion: Type of employer	1	The school where you were enrolled as a student	2.36	2.31	0.05	2.15
		2	A for-profit company	57.46	57.32	0.14	0.24
		3	A nonprofit company or organization	14.02	14.02	0.01	0.04
		4	A local, state, or federal government	14.24	14.07	0.17	1.20
		5	The military	1.50	1.46	0.03	2.36
		6	Other	6.85	6.94	-0.08	-1.18
		7	Self-employed	3.57	3.89	-0.31*	-8.05

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1EMPTYPRCNT	Most recent employer, within 12 months after BA completion: Type of employer	1	The school where you were enrolled as a student	2.67	2.68	-0.01	-0.37
		2	A for-profit company	55.25	55.51	-0.27	-0.48
		3	A nonprofit company or organization	14.85	14.75	0.09	0.64
		4	A local, state, or federal government	15.47	15.39	0.08	0.50
		5	The military	1.46	1.49	-0.02	-1.62
		6	Other	6.29	6.44	-0.15	-2.39
		7	Self-employed	4.02	3.73	0.28*	7.61
B1EMPVOL	Reason not working for pay, between BA completion and June 2017: Volunteering or unpaid internship	0	No	71.62	70.20	1.42	2.03
		1	Yes	28.38	29.80	-1.42	-4.78
B1ENGRCNT	Most recent teaching job, within 12 months after BA completion: Taught English/language arts	0	No	94.24	93.57	0.67	0.71
		1	Yes	5.76	6.43	-0.67	-10.41
B1ENR	Ever enrolled at BA-granting and another institution simultaneously	0	No	93.44	92.71	0.73*	0.79
		1	Yes	6.56	7.29	-0.73*	-10.03
B1EPREPALT	Prepared to teach through an alternative entry program, as of B&B:16/17 interview	0	No	98.88	98.85	0.03	0.03
		1	Yes	1.12	1.15	-0.03	-2.33
B1EPREPCOL	Prepared to teach at a college or university that provides certification, as of B&B:16/17 interview	0	No	91.72	91.91	-0.19	-0.20
		1	Yes	8.28	8.09	0.19	2.32
B1EPREPCOMP	Prepared to teach through a student teaching assignment, as of B&B:16/17 interview	0	No	94.75	94.79	-0.04	-0.04
		1	Yes	5.25	5.21	0.04	0.79
B1EPREPONL	Prepared to teach through an online-only certification program, as of B&B:16/17 interview	0	No	99.02	99.06	-0.04	-0.04
		1	Yes	0.98	0.94	0.04	4.26

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1EPRMSBRCNT	Most recent teaching job, within 12 months after BA completion: Primary subject taught	1	Elementary education	31.57	30.27	1.30	4.31
		2	Special education	6.82	6.74	0.08	1.23
		3	Arts or music	3.71	3.24	0.46	14.32
		4	English or language arts	3.69	4.41	-0.72	-16.32
		5	English as a second language	1.89	2.74	-0.85	-31.11
		6	Foreign languages	2.41	2.47	-0.06	-2.37
		7	Health or physical education	0.54	1.02	-0.48	-47.22
		8	Mathematics or computer science	10.34	9.88	0.46	4.66
		9	Natural sciences	5.50	5.57	-0.07	-1.29
		10	Social sciences	5.35	5.93	-0.57	-9.66
		11	Vocational, career, or technical education	0.83	0.83	-0.01	-0.77
		12	Secondary education	3.32	3.37	-0.04	-1.33
		13	Other subject area	3.10	3.24	-0.14	-4.32
		14	Early childhood education (preK)	15.14	14.49	0.65	4.47
		15	Equal split among 2 or more subjects	5.79	5.80	-0.01	-0.18
B1ERNHIDG	Highest degree enrollment, within 12 months after BA completion: Completed program	0	No	88.51	88.08	0.43	0.49
		1	Yes	11.49	11.92	-0.43	-3.62
B1ESLRCNT	Most recent teaching job, within 12 months after BA completion: Taught ESL	0	No	96.35	95.80	0.55	0.57
		1	Yes	3.65	4.20	-0.55	-12.99
B1ESTTCLG	Length of student teaching	1	4 weeks or less	5.19	4.92	0.27	5.59
		2	5-7 weeks	4.37	3.96	0.41	10.44
		3	8-11 weeks	17.24	17.06	0.18	1.04
		4	12 weeks or more	73.20	74.07	-0.87	-1.17
B1ETEACHGT	TEACH grant awareness, as of B&B:16/17 interview	0	No	87.67	87.89	-0.22	-0.25
		1	Yes	12.33	12.11	0.22	1.82
B1EVRTCH	Ever taught at preK through 12th grade level, as of B&B:16/17 interview	0	No	81.64	83.34	-1.70*	-2.04
		1	Yes	18.36	16.66	1.70*	10.21

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1EVRVT	Ever voted in any election, as of B&B:16/17 interview	0	No	15.04	14.88	0.16	1.09
		1	Yes	84.96	85.12	-0.16	-0.19
B1EXPAP	Ever on academic probation during undergraduate education	0	No	92.03	91.87	0.17	0.18
		1	Yes	7.97	8.13	-0.17	-2.08
B1EXPEVR	Highest level of education expected ever, as of B&B:16/17 interview	4	Bachelor's degree	29.75	30.21	-0.47	-1.55
		5	Graduate level courses	2.15	2.05	0.10	5.10
		6	Post-baccalaureate certificate	1.32	1.32	0.00	0.29
		7	Master's degree	43.88	44.36	-0.47	-1.07
		8	Post-master's certificate	1.54	1.45	0.10	6.63
		9	Doctoral degree: Research/scholarship	13.11	12.59	0.52*	4.17
		10	Doctoral degree: Professional	8.24	8.02	0.21	2.67
B1EXPGH	Graduated from BA-granting institution with academic honors	0	No	61.83	63.30	-1.47*	-2.32
		1	Yes	38.17	36.70	1.47*	4.01
B1FACS	Main factor in post-bachelor's field of study choice between BA completion and June 2017	1	Required for career path	35.63	35.99	-0.36	-1.00
		2	Aptitude in the field	18.01	18.73	-0.71	-3.82
		3	Earnings potential	15.79	15.43	0.36	2.31
		4	Ability to contribute to society	23.40	23.73	-0.32	-1.36
		5	Ability to balance work and family	7.16	6.12	1.04	17.04
B1FDAWRK1ST	First employer, within 12 months after BA completion: Found job through: Already working for employer	0	No	81.92	82.43	-0.52*	-0.63
		1	Yes	18.08	17.57	0.52*	2.94
B1FDAWRKRCNT	Most recent employer, within 12 months after BA completion: Found job through: Already working for employer	0	No	85.89	85.82	0.06	0.07
		1	Yes	14.11	14.18	-0.06	-0.45
B1FDCOL1ST	First employer, within 12 months after BA completion: Found job through: Colleague or mentor	0	No	92.57	92.56	0.01	0.01
		1	Yes	7.43	7.44	-0.01	-0.10

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1FDCOLRCNT	Most recent employer, within 12 months after BA completion: Found job through: Colleague or mentor	0	No	91.80	91.83	-0.02	-0.03
		1	Yes	8.20	8.17	0.02	0.29
B1FDDI1ST	First employer, within 12 months after BA completion: Found job through: Direct inquiry	0	No	89.14	89.12	0.01	0.02
		1	Yes	10.86	10.88	-0.01	-0.13
B1FDDIRCNT	Most recent employer, within 12 months after BA completion: Found job through: Direct inquiry	0	No	89.76	89.52	0.24	0.26
		1	Yes	10.24	10.48	-0.24	-2.25
B1FDFAC1ST	First employer, within 12 months after BA completion: Found job through: Faculty member or alumni	0	No	92.06	91.71	0.35	0.38
		1	Yes	7.94	8.29	-0.35	-4.23
B1FDFACRCNT	Most recent employer, within 12 months after BA completion: Found job through: Faculty member or alumni	0	No	91.62	91.36	0.26	0.29
		1	Yes	8.38	8.64	-0.26	-3.05
B1FDFAM1ST	First employer, within 12 months after BA completion: Found job through: Friends or family	0	No	71.33	71.55	-0.22	-0.31
		1	Yes	28.67	28.45	0.22	0.79
B1FDFAMRCNT	Most recent employer, within 12 months after BA completion: Found job through: Friends or family	0	No	72.45	72.26	0.19	0.26
		1	Yes	27.55	27.74	-0.19	-0.68
B1FDHHR1ST	First employer, within 12 months after BA completion: Found job through: Headhunter or recruiter	0	No	93.97	93.79	0.18	0.19
		1	Yes	6.03	6.21	-0.18	-2.88
B1FDHHRRCNT	Most recent employer, within 12 months after BA completion: Found job through: Headhunter or recruiter	0	No	92.93	92.97	-0.04	-0.05
		1	Yes	7.07	7.03	0.04	0.60

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1FDINT1ST	First employer, within 12 months after BA completion: Found job through: Internship	0	No	91.47	91.91	-0.43*	-0.47
		1	Yes	8.53	8.09	0.43*	5.34
B1FDINTRCNT	Most recent employer, within 12 months after BA completion: Found job through: Internship	0	No	92.42	92.80	-0.38*	-0.41
		1	Yes	7.58	7.20	0.38*	5.31
B1FDONL1ST	First employer, within 12 months after BA completion: Found job through: Online job posting	0	No	70.75	69.67	1.08*	1.56
		1	Yes	29.25	30.33	-1.08*	-3.58
B1FDONLRCNT	Most recent employer, within 12 months after BA completion: Found job through: Online job posting	0	No	65.89	65.55	0.34	0.52
		1	Yes	34.11	34.45	-0.34	-0.98
B1FDOTH1ST	First employer, within 12 months after BA completion: Found job through: Other	0	No	93.18	93.38	-0.20	-0.22
		1	Yes	6.82	6.62	0.20	3.09
B1FDOTHRCNT	Most recent employer, within 12 months after BA completion: Found job through: Other	0	No	93.16	93.26	-0.10	-0.11
		1	Yes	6.84	6.74	0.10	1.53
B1FIN2000	Respondent's confidence in ability to come up with $2,000 within the next month, as of B&B:16/17 interview	1	Certainly could come up with $2,000	50.25	50.17	0.07	0.15
		2	Probably could come up with $2,000	26.13	26.44	-0.31	-1.16
		3	Probably could not come up with $2,000	13.46	13.37	0.10	0.72
		4	Certainly could not come up with $2,000	10.16	10.02	0.14	1.35
B1FLRCNT	Most recent teaching job, within 12 months after BA completion: Taught foreign languages	0	No	96.82	97.01	-0.19	-0.20
		1	Yes	3.18	2.99	0.19	6.42

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1GENDER	Gender, as of B&B:16/17 interview	1	Male	41.23	42.16	-0.93*	-2.20
		2	Female	57.59	56.59	1.00*	1.76
		3	Transgender: Male-to-female	0.04	0.03	0.00	2.49
		4	Transgender: Female-to-male	0.02	0.02	0.00	29.80
		5	Genderqueer or gender nonconforming	0.38	0.37	0.01	1.75
		6	A different gender identity	0.07	0.07	0.00	-4.03
		7	Questioning or unsure	0.20	0.22	-0.03	-11.30
		8	More than one gender	0.48	0.54	-0.06	-10.43
B1GMAT	Took GMAT, as of June 2017	0	No	98.23	98.33	-0.09	-0.10
		1	Yes	1.77	1.67	0.09	5.64
B1GRDEXM	Took a graduate or professional entrance exam, as of June 2017	0	No	79.99	80.36	-0.37	-0.46
		1	Yes	20.01	19.64	0.37	1.88
B1GRE	Took GRE, as of June 2017	0	No	88.21	88.29	-0.08	-0.09
		1	Yes	11.79	11.71	0.08	0.69
B1GREEK	Involved in Greek life during undergraduate education	0	No	73.10	73.03	0.07	0.09
		1	Yes	14.33	14.40	-0.08	-0.52
		2	Not offered	12.57	12.57	0.01	0.06
B1HAVEDEPM00	Have any dependents, month of BA completion	0	No dependents	87.45	86.50	0.94*	1.09
		1	Dependent child(ren)	11.08	11.97	-0.88*	-7.39
		2	Other dependent(s)	0.69	0.70	0.00	-0.40
		3	Both dependent child(ren) and other dependent(s)	0.78	0.84	-0.05	-6.55
B1HAVEDEPM01	Have any dependents, 1 month after BA completion	0	No dependents	87.18	86.24	0.94*	1.09
		1	Dependent child(ren)	11.24	12.14	-0.89*	-7.36
		2	Other dependent(s)	0.78	0.78	0.01	0.93
		3	Both dependent child(ren) and other dependent(s)	0.79	0.84	-0.05	-6.50

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1HAVEDEPM02	Have any dependents, 2 months after BA completion	0	No dependents	86.99	86.05	0.94*	1.09
		1	Dependent child(ren)	11.37	12.26	-0.88*	-7.21
		2	Other dependent(s)	0.85	0.85	0.00	-0.51
		3	Both dependent child(ren) and other dependent(s)	0.79	0.84	-0.05	-6.46
B1HAVEDEPM03	Have any dependents, 3 months after BA completion	0	No dependents	86.85	85.91	0.95*	1.10
		1	Dependent child(ren)	11.46	12.35	-0.90*	-7.25
		2	Other dependent(s)	0.90	0.89	0.00	0.46
		3	Both dependent child(ren) and other dependent(s)	0.79	0.85	-0.05	-6.36
B1HAVEDEPM04	Have any dependents, 4 months after BA completion	0	No dependents	86.68	85.72	0.96*	1.12
		1	Dependent child(ren)	11.60	12.52	-0.92*	-7.33
		2	Other dependent(s)	0.92	0.89	0.03	3.35
		3	Both dependent child(ren) and other dependent(s)	0.81	0.88	-0.07	-8.13
B1HAVEDEPM05	Have any dependents, 5 months after BA completion	0	No dependents	86.50	85.51	0.99*	1.16
		1	Dependent child(ren)	11.73	12.67	-0.94*	-7.43
		2	Other dependent(s)	0.96	0.94	0.02	1.96
		3	Both dependent child(ren) and other dependent(s)	0.81	0.88	-0.07	-7.95
B1HAVEDEPM06	Have any dependents, 6 months after BA completion	0	No dependents	86.29	85.30	0.98*	1.15
		1	Dependent child(ren)	11.87	12.80	-0.93*	-7.26
		2	Other dependent(s)	1.00	0.98	0.02	2.40
		3	Both dependent child(ren) and other dependent(s)	0.84	0.91	-0.08	-8.39
B1HAVEDEPM07	Have any dependents, 7 months after BA completion	0	No dependents	86.21	85.24	0.98*	1.15
		1	Dependent child(ren)	11.93	12.86	-0.93*	-7.23
		2	Other dependent(s)	1.01	0.99	0.03	2.66
		3	Both dependent child(ren) and other dependent(s)	0.84	0.92	-0.08	-8.18

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1HAVEDEPM08	Have any dependents, 8 months after BA completion	0	No dependents	86.15	85.18	0.96*	1.13
		1	Dependent child(ren)	11.98	12.90	-0.92*	-7.11
		2	Other dependent(s)	1.03	1.00	0.03	2.95
		3	Both dependent child(ren) and other dependent(s)	0.84	0.92	-0.07	-8.14
B1HAVEDEPM09	Have any dependents, 9 months after BA completion	0	No dependents	85.98	85.02	0.96*	1.13
		1	Dependent child(ren)	12.13	13.05	-0.92*	-7.07
		2	Other dependent(s)	1.04	1.01	0.03	3.28
		3	Both dependent child(ren) and other dependent(s)	0.85	0.92	-0.07	-8.12
B1HAVEDEPM10	Have any dependents, 10 months after BA completion	0	No dependents	85.91	84.94	0.97*	1.14
		1	Dependent child(ren)	12.19	13.12	-0.93*	-7.10
		2	Other dependent(s)	1.05	1.02	0.04	3.50
		3	Both dependent child(ren) and other dependent(s)	0.85	0.92	-0.07	-8.06
B1HAVEDEPM11	Have any dependents, 11 months after BA completion	0	No dependents	85.75	84.79	0.96*	1.13
		1	Dependent child(ren)	12.30	13.20	-0.90*	-6.82
		2	Other dependent(s)	1.07	1.04	0.03	3.25
		3	Both dependent child(ren) and other dependent(s)	0.88	0.97	-0.09	-9.29
B1HAVEDEPM12	Have any dependents, 12 months after BA completion	0	No dependents	85.69	84.72	0.97*	1.14
		1	Dependent child(ren)	12.28	13.19	-0.92*	-6.96
		2	Other dependent(s)	1.13	1.09	0.04	3.76
		3	Both dependent child(ren) and other dependent(s)	0.91	1.00	-0.09	-8.92

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1HIDEG	Highest degree enrollment, within 12 months after BA completion: Degree type	1	Undergraduate certificate or diploma	3.85	4.85	-1.01*	-20.71
		2	Associate's degree	4.22	7.28	-3.07*	-42.10
		3	Bachelor's degree	13.64	13.16	0.49	3.70
		4	Post-baccalaureate certificate	3.64	3.49	0.14	4.15
		5	Master's degree	55.16	53.02	2.14*	4.05
		6	Post-master's certificate	0.36	0.31	0.05*	16.57
		7	Doctoral degree - professional practice	9.45	8.88	0.58*	6.50
		8	Doctoral degree - research/scholarship	4.50	4.25	0.25*	5.89
		9	Doctoral degree - other	5.17	4.76	0.42*	8.73
B1HIDGASST	Highest degree enrollment, within 12 months after BA completion: Financial aid type: Had assistantships or fellowships	0	No	83.42	85.91	-2.49*	-2.90
		1	Yes	16.58	14.09	2.49*	17.66
B1HIDGEMPAID	Highest degree enrollment, within 12 months after BA completion: financial aid type: Used employer tuition assistance	0	No	93.79	93.64	0.15	0.16
		1	Yes	6.21	6.36	-0.15	-2.35
B1HIDGGIFT	Highest degree enrollment, within 12 months after BA completion: Used personal loan or gift	0	No	88.73	90.33	-1.60*	-1.77
		1	Yes	11.27	9.67	1.60*	16.53
B1HIDGGRANT	Highest degree enrollment, within 12 months after BA completion: Used grants or scholarships	0	No	67.39	68.07	-0.68	-1.00
		1	Yes	32.61	31.93	0.68	2.14
B1HIDGONLIN	Highest degree enrollment, within 12 months after BA completion: Took online courses	0	No	58.99	59.77	-0.78	-1.30
		1	Yes	41.01	40.23	0.78	1.94
B1HIDGOTHAID	Highest degree enrollment, within 12 months after BA completion: Use other financial aid type	0	No	91.95	92.00	-0.06	-0.06
		1	Yes	8.05	8.00	0.06	0.72
B1HIDGPOCKET	Highest degree enrollment, within 12 months after BA completion: Used own money	0	No	49.18	50.29	-1.10	-2.19
		1	Yes	50.82	49.71	1.10	2.22

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1HIDGPRIV	Highest degree enrollment, within 12 months after BA completion: Used private loans	0	No	90.95	89.17	1.78*	1.99
		1	Yes	9.05	10.83	-1.78*	-16.42
B1HIDGWRKSDY	Highest degree enrollment, within 12 months after BA completion: Had federal work-study	0	No	97.18	97.20	-0.02	-0.02
		1	Yes	2.82	2.80	0.02	0.71
B1HOTH	Household composition: Living with other types of individuals, as of B&B:16/17 interview	0	No	76.11	75.54	0.57*	0.76
		1	Yes	23.89	24.46	-0.57*	-2.34
B1HOUSE	Housing status, as of B&B:16/17 interview	1	Pay mortgage	12.66	12.91	-0.25	-1.92
		2	Pay rent	57.19	56.78	0.41	0.72
		3	Own home outright	2.37	2.46	-0.09	-3.83
		4	None of the above	27.09	27.17	-0.07	-0.26
		5	More than one housing status	0.69	0.68	0.00	0.46
B1HPERCNT	Most recent teaching job, within 12 months after BA completion: Taught health/physical education	0	No	97.99	97.78	0.21	0.21
		1	Yes	2.01	2.22	-0.21	-9.42
B1INCHO	Satisfaction with quality of undergraduate education, as of B&B:16/17 interview	1	Very satisfied	45.84	46.26	-0.42	-0.90
		2	Satisfied	43.50	43.44	0.06	0.15
		3	Neither satisfied nor dissatisfied	7.35	7.10	0.24	3.43
		4	Dissatisfied	2.59	2.54	0.05	2.01
		5	Very dissatisfied	0.71	0.65	0.06	9.02
B1IND01	Participated in formal teacher induction program in first teaching job since 2015–16 BA	0	No	43.77	45.63	-1.86	-4.09
		1	Yes	56.23	54.37	1.86	3.43

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1INDU1ST	First employer, within 12 months after BA completion: Industry	1	Education	15.47	15.37	0.10	0.65
		2	Healthcare	17.80	17.48	0.33*	1.87
		3	Retail sales	15.08	15.14	-0.07	-0.44
		4	Government	6.21	6.04	0.17*	2.89
		5	Professional, scientific, and technical services	10.83	10.76	0.07	0.68
		6	Food service and accommodations	6.86	7.14	-0.28*	-3.92
		7	Financial and insurance	5.96	5.88	0.09	1.45
		8	Something else	21.79	22.20	-0.41*	-1.86
B1INDURCNT	Most recent employer, within 12 months after BA completion: Industry	1	Education	16.78	16.70	0.09	0.53
		2	Healthcare	19.11	18.71	0.40*	2.15
		3	Retail sales	12.84	12.94	-0.11	-0.81
		4	Government	6.72	6.63	0.09	1.32
		5	Professional, scientific, and technical services	11.72	11.61	0.11	0.91
		6	Food service and accommodations	5.07	5.47	-0.41*	-7.42
		7	Financial and insurance	6.72	6.62	0.10	1.53
		8	Other	21.04	21.31	-0.27	-1.28
B1INFLACCT	Teaching influences, as of B&B:16/17 interview: Teacher accountability	1	Negative influence	15.87	16.89	-1.02	-6.04
		2	No influence	31.80	32.99	-1.18	-3.59
		3	Positive influence	52.33	50.12	2.20	4.40
B1INFLADV	Teaching influences, as of B&B:16/17 interview: Possibilities for career advancement	1	Negative influence	5.17	5.12	0.05	0.99
		2	No influence	51.43	52.68	-1.25	-2.37
		3	Positive influence	43.40	42.21	1.20	2.84
B1INFLCONT	Teaching influences, as of B&B:16/17 interview: Opportunity to contribute to society	2	No influence	5.97	5.67	0.30	5.26
		3	Positive influence	94.03	94.33	-0.30	-0.32
B1INFLFIN	Teaching influences, as of B&B:16/17 interview: Financial compensation	1	Negative influence	34.82	35.00	-0.17	-0.49
		2	No influence	48.62	48.32	0.30	0.62
		3	Positive influence	16.56	16.68	-0.13	-0.76

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1INFLKIDS	Teaching influences, as of B&B:16/17 interview: Working with kids	1	Negative influence	1.92	1.85	0.06	3.43
		2	No influence	7.80	8.21	-0.40	-4.93
		3	Positive influence	90.28	89.94	0.34	0.38
B1INFLPRES	Teaching influences, as of B&B:16/17 interview: Prestige of occupation	1	Negative influence	9.80	9.36	0.44	4.72
		2	No influence	52.53	53.71	-1.18	-2.19
		3	Positive influence	37.67	36.94	0.74	1.99
B1INFWK	Had informal work between BA completion and June 2017	0	No	85.67	85.67	0.00	0.00
		1	Yes	14.33	14.33	0.00	0.03
B1INTERN	Had a paid internship, within 12 months after BA completion	0	No	91.75	92.22	-0.47*	-0.51
		1	Yes	8.25	7.78	0.47*	6.01
B1INTERN1ST	First job, within 12 months after BA completion: Internship	0	No	93.30	93.75	-0.45*	-0.48
		1	Yes	6.70	6.25	0.45*	7.18
B1INTERNRCNT	Most recent job, within 12 months after BA completion: Internship	0	No	95.27	95.58	-0.31*	-0.32
		1	Yes	4.73	4.42	0.31*	7.00
B1JOBPRIOR1ST	First job, within 12 months after BA completion: Held job prior to BA completion	0	No	65.67	65.74	-0.06	-0.10
		1	Yes	34.33	34.26	0.06	0.19
B1JOBPRIORRCNT	Most recent job, within 12 months after BA completion: Held job prior to BA completion	0	No	75.85	75.88	-0.03	-0.03
		1	Yes	24.15	24.12	0.03	0.11

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1LANGS	Second language, as of B&B:16/17 interview	0	Do not know second language	63.82	64.04	-0.23	-0.36
		1	American Sign Language or other sign language	0.70	0.81	-0.11	-14.05
		2	Arabic	0.35	0.36	0.00	-1.39
		3	Bengali	0.04	0.03	0.01	30.17
		4	Chinese	1.40	1.38	0.02	1.43
		5	French or Canadian French	2.43	2.48	-0.05	-2.07
		6	German	1.27	1.21	0.05	4.34
		7	Greek (ancient)	0.01	0.01	0.00	-18.22
		8	Greek (modern)	0.08	0.06	0.01	23.16
		9	Hebrew (Biblical)	0.03	0.04	-0.01	-23.37
		10	Hebrew (modern)	0.29	0.25	0.03	12.29
		11	Hindi	0.23	0.21	0.02	9.46
		12	Italian	0.68	0.64	0.04	6.23
		13	Japanese	0.65	0.62	0.03	4.29
		14	Javanese	0.01	0.02	-0.01	-30.79
		15	Korean	0.34	0.33	0.01	2.05
		16	Latin	0.15	0.14	0.00	2.33
		17	Malay	0.03	0.03	0.00	10.93
		18	Marathi	0.01	0.01	0.00	30.17
		19	Portuguese	0.28	0.28	0.01	2.35
		20	Punjabi	0.11	0.09	0.02	20.35
		21	Russian	0.21	0.20	0.01	4.40
		22	Spanish	13.15	13.20	-0.05	-0.39
		23	Swahili	0.06	0.07	-0.01	-11.89
		24	Tamil	0.04	0.06	-0.02	-28.69
		25	Telugu	0.01	0.01	0.00	30.17
		26	Turkish	0.04	0.04	0.00	11.39
		27	Urdu	0.23	0.20	0.03	16.73
		28	Vietnamese	0.44	0.45	-0.01	-2.90
		29	English	11.08	10.83	0.25	2.29
		99	Other	1.85	1.89	-0.05	-2.40
B1LEVRCNT	Most recent school, within 12 months after BA completion: Level	1	Elementary	67.45	68.59	-1.14	-1.67
		2	Secondary	21.26	20.45	0.81	3.95
		3	Combined	11.29	10.96	0.34	3.06

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1LGBTQ	Sexual orientation, as of B&B:16/17 interview	1	Lesbian or gay, that is homosexual	3.14	3.07	0.07	2.26
		2	Straight, that is heterosexual	90.71	90.70	0.00	0.00
		3	Bisexual	4.00	4.03	-0.03	-0.71
		4	Another sexual orientation	1.22	1.28	-0.06	-4.75
		5	Questioning or unsure	0.94	0.93	0.02	1.76
B1LICREQ1ST	First job, within 12 months after BA completion: License required for work	0	No	85.95	86.35	-0.39	-0.46
		1	Yes	14.05	13.65	0.39	2.89
B1LICREQRCNT	Most recent job, within 12 months after BA completion: License required for work	0	No	83.88	84.24	-0.36	-0.42
		1	Yes	16.12	15.76	0.36	2.26
B1LKCOL	Job search activities, between BA completion and June 2017: Talked to coworkers or mentors	0	No	57.29	57.36	-0.07	-0.13
		1	Yes	42.71	42.64	0.07	0.17
B1LKEMA	Job search activities, between BA completion and June 2017: Used an employment agency	0	No	78.28	78.21	0.06	0.08
		1	Yes	21.72	21.79	-0.06	-0.29
B1LKFAC	Job search activities, between BA completion and June 2017: Talked to faculty members or alumni	0	No	72.29	71.72	0.57	0.79
		1	Yes	27.71	28.28	-0.57	-2.01
B1LKFAM	Job search activities, between BA completion and June 2017: Talked to friends or family members	0	No	36.27	37.00	-0.73	-1.98
		1	Yes	63.73	63.00	0.73	1.16
B1LKINT	Job search activities, between BA completion and June 2017: Completed an internship	0	No	89.60	89.26	0.34	0.38
		1	Yes	10.40	10.74	-0.34	-3.16
B1LKONL	Job search activities, between BA completion and June 2017: Searched online job postings	0	No	6.72	7.00	-0.28	-3.99
		1	Yes	93.28	93.00	0.28	0.30
B1LKOTH	Job search activities, between BA completion and June 2017: Other	0	No	91.20	90.96	0.25	0.27
		1	Yes	8.80	9.04	-0.25	-2.76
B1LKWKM00	Looked for work, month of BA completion	0	No	70.50	70.67	-0.17	-0.24
		1	Yes	29.50	29.33	0.17	0.58

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1LKWKM01	Looked for work 1 month after BA completion	0	No	68.41	68.62	-0.21	-0.30
		1	Yes	31.59	31.38	0.21	0.66
B1LKWKM02	Looked for work 2 months after BA completion	0	No	69.15	69.26	-0.11	-0.16
		1	Yes	30.85	30.74	0.11	0.36
B1LKWKM03	Looked for work 3 months after BA completion	0	No	70.22	70.50	-0.28	-0.40
		1	Yes	29.78	29.50	0.28	0.96
B1LKWKM04	Looked for work 4 months after BA completion	0	No	72.06	72.31	-0.25	-0.34
		1	Yes	27.94	27.69	0.25	0.89
B1LKWKM05	Looked for work 5 months after BA completion	0	No	73.56	73.80	-0.24	-0.33
		1	Yes	26.44	26.20	0.24	0.92
B1LKWKM06	Looked for work 6 months after BA completion	0	No	74.70	74.93	-0.23	-0.31
		1	Yes	25.30	25.07	0.23	0.94
B1LKWKM07	Looked for work 7 months after BA completion	0	No	75.15	75.51	-0.37	-0.49
		1	Yes	24.85	24.49	0.37	1.50
B1LKWKM08	Looked for work 8 months after BA completion	0	No	74.71	74.83	-0.12	-0.16
		1	Yes	25.29	25.17	0.12	0.49
B1LKWKM09	Looked for work 9 months after BA completion	0	No	74.83	74.94	-0.10	-0.14
		1	Yes	25.17	25.06	0.10	0.41
B1LKWKM10	Looked for work 10 months after BA completion	0	No	74.62	74.90	-0.27	-0.37
		1	Yes	25.38	25.10	0.27	1.09
B1LKWKM11	Looked for work 11 months after BA completion	0	No	74.94	75.10	-0.16	-0.21
		1	Yes	25.06	24.90	0.16	0.64
B1LKWKM12	Looked for work 12 months after BA completion	0	No	74.71	74.74	-0.04	-0.05
		1	Yes	25.29	25.26	0.04	0.15
B1LNGCAR	Used non-English language in a job since BA completion, as of B&B:16/17 interview	0	Did not use other (non-English) language in job(s) since completing bachelor's	57.32	57.56	-0.24	-0.42
		1	Used other (non-English) language in job(s) since completing bachelor's	42.68	42.44	0.24	0.57

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1LOCRCNT	Most recent school, within 12 months after BA completion: Locale	1	City, large	23.09	22.23	0.86	3.89
		2	City, mid-size	4.64	4.52	0.12	2.70
		3	City, small	5.83	6.23	-0.39	-6.34
		4	Suburb, large	27.47	27.33	0.14	0.50
		5	Suburb, mid-size	3.26	3.18	0.08	2.41
		6	Suburb, small	1.11	0.99	0.11	11.58
		7	Town, fringe	1.98	3.29	-1.31	-39.75
		8	Town, distant	5.84	5.69	0.15	2.60
		9	Town, remote	5.45	4.68	0.77	16.51
		10	Rural, fringe	12.77	13.74	-0.97	-7.09
		11	Rural, distant	5.85	5.92	-0.07	-1.21
		12	Rural, remote	2.72	2.20	0.52	23.40
B1LSAT	Took LSAT, as of June 2017	0	No	97.93	97.86	0.07	0.07
		1	Yes	2.07	2.14	-0.07	-3.14
B1LVCAR	Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with teaching as a career or wanted to pursue another career	0	No	82.47	82.40	0.07	0.08
		1	Yes	17.53	17.60	-0.07	-0.38
B1LVCOND	Reasons left teaching, as of B&B:16/17 interview: Dissatisfied with workplace conditions	0	No	88.57	89.92	-1.35*	-1.50
		1	Yes	11.43	10.08	1.35*	13.37
B1LVLAID	Reasons left teaching, as of B&B:16/17 interview: Laid off	0	No	96.73	97.21	-0.48	-0.49
		1	Yes	3.27	2.79	0.48	17.13
B1LVOTH	Reasons left teaching, as of B&B:16/17 interview: Other	0	No	59.83	61.12	-1.29	-2.11
		1	Yes	40.17	38.88	1.29	3.32
B1LVPERS	Reasons left teaching, as of B&B:16/17 interview: Personal life reasons	0	No	79.66	79.31	0.35	0.44
		1	Yes	20.34	20.69	-0.35	-1.70
B1LVSAL	Reasons left teaching, as of B&B:16/17 interview: Inadequate salary and/or benefits	0	No	83.19	82.46	0.73	0.89
		1	Yes	16.81	17.54	-0.73	-4.17

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1LVSCHL	Reasons left teaching, as of B&B:16/17 interview: Returned to school	0	No	69.39	69.71	-0.32	-0.46
		1	Yes	30.61	30.29	0.32	1.07
B1LVTRSF	Reasons left teaching, as of B&B:16/17 interview: Involuntarily transferred	0	No	98.88	99.02	-0.14	-0.14
		1	Yes	1.12	0.98	0.14	14.06
B1MAJCHO	Satisfaction with choice of undergraduate major, as of B&B:16/17 interview	1	Very satisfied	45.89	46.23	-0.33	-0.72
		2	Satisfied	37.84	38.09	-0.25	-0.66
		3	Neither satisfied nor dissatisfied	10.59	10.21	0.38*	3.69
		4	Dissatisfied	4.64	4.48	0.16	3.61
		5	Very dissatisfied	1.04	0.99	0.05	4.69
B1MARR	Marital status, as of B&B:16/17 interview	1	Single, never married	71.07	71.57	-0.50*	-0.70
		2	Married	19.47	18.86	0.61*	3.24
		3	Separated	0.59	0.63	-0.04	-6.71
		4	Divorced	2.91	2.95	-0.04	-1.50
		5	Widowed	0.16	0.15	0.01*	6.72
		6	Living with partner in a marriage-like relationship	5.81	5.85	-0.03	-0.60
B1MARRM00	Marital status, month of BA completion	1	Single, never married	83.53	83.21	0.32	0.38
		2	Married	13.75	14.09	-0.34	-2.42
		3	Separated	0.27	0.30	-0.03	-8.98
		4	Divorced	2.30	2.25	0.06	2.57
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM01	Marital status, 1 month after BA completion	1	Single, never married	82.97	82.64	0.33	0.40
		2	Married	14.27	14.63	-0.36	-2.44
		3	Separated	0.29	0.31	-0.03	-8.71
		4	Divorced	2.32	2.26	0.06	2.50
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM02	Marital status, 2 months after BA completion	1	Single, never married	82.64	82.34	0.29	0.35
		2	Married	14.54	14.86	-0.32	-2.15
		3	Separated	0.30	0.32	-0.03	-7.92
		4	Divorced	2.38	2.32	0.06	2.51
		5	Widowed	0.15	0.16	-0.01	-3.23

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1MARRM03	Marital status, 3 months after BA completion	1	Single, never married	82.27	81.93	0.34	0.41
		2	Married	14.88	15.25	-0.37	-2.40
		3	Separated	0.30	0.32	-0.03	-7.89
		4	Divorced	2.41	2.35	0.06	2.51
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM04	Marital status, 4 months after BA completion	1	Single, never married	81.86	81.51	0.36	0.44
		2	Married	15.26	15.65	-0.39	-2.49
		3	Separated	0.31	0.33	-0.02	-6.71
		4	Divorced	2.41	2.35	0.06	2.52
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM05	Marital status, 5 months after BA completion	1	Single, never married	81.44	81.06	0.37	0.46
		2	Married	15.67	16.08	-0.41	-2.55
		3	Separated	0.32	0.34	-0.02	-6.46
		4	Divorced	2.42	2.36	0.06	2.63
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM06	Marital status, 6 months after BA completion	1	Single, never married	81.17	80.79	0.38	0.47
		2	Married	15.90	16.30	-0.39	-2.42
		3	Separated	0.32	0.34	-0.02	-6.46
		4	Divorced	2.46	2.42	0.04	1.69
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM07	Marital status, 7 months after BA completion	1	Single, never married	80.86	80.45	0.41	0.51
		2	Married	16.19	16.61	-0.42*	-2.54
		3	Separated	0.32	0.34	-0.02	-6.46
		4	Divorced	2.48	2.44	0.04	1.71
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM08	Marital status, 8 months after BA completion	1	Single, never married	80.56	80.15	0.41	0.51
		2	Married	16.45	16.86	-0.41	-2.43
		3	Separated	0.33	0.37	-0.03	-9.34
		4	Divorced	2.51	2.46	0.04	1.74
		5	Widowed	0.15	0.16	-0.01	-3.23

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1MARRM09	Marital status, 9 months after BA completion	1	Single, never married	80.25	79.87	0.38	0.48
		2	Married	16.72	17.12	-0.40	-2.31
		3	Separated	0.34	0.37	-0.03	-9.04
		4	Divorced	2.54	2.49	0.05	2.01
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM10	Marital status, 10 months after BA completion	1	Single, never married	79.87	79.49	0.38	0.48
		2	Married	17.08	17.46	-0.38	-2.19
		3	Separated	0.35	0.40	-0.04	-11.19
		4	Divorced	2.55	2.50	0.05	2.10
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM11	Marital status, 11 months after BA completion	1	Single, never married	79.63	79.29	0.34	0.43
		2	Married	17.22	17.58	-0.36	-2.03
		3	Separated	0.37	0.41	-0.04	-9.97
		4	Divorced	2.63	2.57	0.06	2.46
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MARRM12	Marital status, 12 months after BA completion	1	Single, never married	79.26	78.97	0.29	0.37
		2	Married	17.58	17.89	-0.31	-1.73
		3	Separated	0.37	0.42	-0.04	-10.14
		4	Divorced	2.63	2.57	0.06	2.49
		5	Widowed	0.15	0.16	-0.01	-3.23
B1MATRCNT	Most recent teaching job, within 12 months after BA completion: Taught math/computer science	0	No	84.57	85.06	-0.49	-0.58
		1	Yes	15.43	14.94	0.49	3.31
B1MCAT	Took MCAT, as of June 2017	0	No	97.40	97.42	-0.02	-0.02
		1	Yes	2.60	2.58	0.02	0.81
B1MEMPM00	Employed, month of BA completion	0	No	50.97	50.81	0.15	0.30
		1	Yes	49.03	49.19	-0.15	-0.31
B1MEMPM01	Employed 1 month after BA completion	0	No	38.65	38.26	0.39*	1.03
		1	Yes	61.35	61.74	-0.39*	-0.64
B1MEMPM02	Employed 2 months after BA completion	0	No	32.05	31.69	0.36*	1.12
		1	Yes	67.95	68.31	-0.36*	-0.52

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1MEMPM03	Employed 3 months after BA completion	0	No	26.60	26.29	0.32*	1.20
		1	Yes	73.40	73.71	-0.32*	-0.43
B1MEMPM04	Employed 4 months after BA completion	0	No	24.65	24.26	0.39*	1.61
		1	Yes	75.35	75.74	-0.39*	-0.52
B1MEMPM05	Employed 5 months after BA completion	0	No	22.70	22.43	0.27*	1.20
		1	Yes	77.30	77.57	-0.27*	-0.35
B1MEMPM06	Employed 6 months after BA completion	0	No	21.53	21.18	0.35*	1.65
		1	Yes	78.47	78.82	-0.35*	-0.44
B1MEMPM07	Employed 7 months after BA completion	0	No	21.61	21.25	0.36*	1.67
		1	Yes	78.39	78.75	-0.36*	-0.45
B1MEMPM08	Employed 8 months after BA completion	0	No	20.88	20.61	0.27*	1.33
		1	Yes	79.12	79.39	-0.27*	-0.34
B1MEMPM09	Employed 9 months after BA completion	0	No	20.77	20.52	0.25*	1.21
		1	Yes	79.23	79.48	-0.25*	-0.31
B1MEMPM10	Employed 10 months after BA completion	0	No	20.40	20.11	0.29*	1.45
		1	Yes	79.60	79.89	-0.29*	-0.37
B1MEMPM11	Employed 11 months after BA completion	0	No	20.43	20.17	0.26*	1.29
		1	Yes	79.57	79.83	-0.26*	-0.33
B1MEMPM12	Employed 12 months after BA completion	0	No	20.36	20.20	0.16	0.80
		1	Yes	79.64	79.80	-0.16	-0.20
B1NDCWK	Enrolled in nondegree coursework between BA completion and June 2017	0	No	94.40	94.34	0.06	0.07
		1	Yes	5.60	5.66	-0.06	-1.08
B1NEMPBW	Spent time taking a break from work during non-working and non-enrollment spans, between BA completion and June 2017	0	No	77.36	77.93	-0.57	-0.73
		1	Yes	22.64	22.07	0.57	2.59
B1NEMPCC	Spent time caring for children during non-working and non-enrollment spans, between BA completion and June 2017	0	No	88.46	88.96	-0.50	-0.56
		1	Yes	11.54	11.04	0.50	4.53

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1NEMPCF	Spent time caring for family during non-working and non-enrollment spans, between BA completion and June 2017	0	No	90.74	91.05	-0.32	-0.35
		1	Yes	9.26	8.95	0.32	3.53
B1NEMPHI	Spent time with personal health issues during non-working and non-enrollment spans, between BA completion and June 2017	0	No	92.82	92.90	-0.08	-0.09
		1	Yes	7.18	7.10	0.08	1.17
B1NEMPLW	Spent time looking for work during non-working and non-enrollment spans, between BA completion and June 2017	0	No	36.12	35.41	0.71	2.00
		1	Yes	63.88	64.59	-0.71	-1.10
B1NEMPSE	Spent time doing something else during non-working and non-enrollment spans, between BA completion and June 2017	0	No	73.27	73.10	0.17	0.23
		1	Yes	26.73	26.90	-0.17	-0.63
B1NEMPUI	Spent time in an unpaid internship during non-working and non-enrollment spans, between BA completion and June 2017	0	No	91.02	91.10	-0.07	-0.08
		1	Yes	8.98	8.90	0.07	0.83
B1NPCONT	Breaks in attendance from BA-granting institution	0	No	89.64	89.50	0.14	0.15
		1	Yes	10.36	10.50	-0.14	-1.30
B1NSF19B	Ever had a job that was closely related to major or field of study, within 12 months after BA completion	0	No	21.60	20.56	1.04*	5.05
		1	Yes	78.40	79.44	-1.04*	-1.31
B1NSF19B1ST	First job, within 12 months after BA completion: Related to bachelor's degree program	0	Not related	32.19	31.57	0.62	1.97
		1	Somewhat related	33.76	34.50	-0.74*	-2.14
		2	Closely related	34.05	33.93	0.12	0.34
B1NSF19BRCNT	Most recent job, within 12 months after BA completion: Related to BA program	0	Not related	26.16	26.89	-0.73*	-2.71
		1	Closely related	39.84	39.26	0.58	1.48
		2	Somewhat related	34.00	33.85	0.15	0.44

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1NSFA1ST	First job, within 12 months after BA completion: Requires a BA	0	No	64.45	62.74	1.71*	2.73
		1	Yes	35.55	37.26	-1.71*	-4.60
B1NSFARCNT	Most recent job, within 12 months after BA completion: Requires a BA	0	No	52.82	53.07	-0.24	-0.46
		1	Yes	47.18	46.93	0.24	0.52
B1NUMP1ST	First employer, within 12 months after BA completion: Number of employees	1	1-5 employees	7.60	7.90	-0.31*	-3.89
		2	6-25 employees	11.65	11.51	0.13	1.17
		3	26-50 employees	7.65	7.72	-0.07	-0.89
		4	51-100 employees	8.63	8.89	-0.26	-2.91
		5	101-1,000 employees	20.35	20.10	0.26	1.27
		6	More than 1,000 employees	44.12	43.88	0.24	0.56
B1NUMPRCNT	Most recent employer, within 12 months after BA completion: Number of employees	1	1-5 employees	6.94	7.15	-0.21	-2.99
		2	6-25 employees	10.70	10.68	0.02	0.22
		3	26-50 employees	7.17	7.37	-0.20	-2.71
		4	51-100 employees	8.34	8.79	-0.45*	-5.14
		5	101-1,000 employees	21.32	21.05	0.26	1.25
		6	More than 1,000 employees	45.54	44.96	0.58	1.29
B1NUTRNACC	Successfully transferred credits to BA-granting institution	1	All	47.27	47.57	-0.30	-0.62
		2	Some	51.86	51.55	0.31	0.60
		3	None	0.86	0.88	-0.01	-1.46
B1NUTRNCRD	Ever attempted to transfer credits to BA-granting institution	0	No	5.06	4.94	0.12	2.52
		1	Yes	94.94	95.06	-0.12	-0.13
B1OTHRCNT	Most recent teaching job, within 12 months after BA completion: Taught other unspecified subject	0	No	93.84	94.01	-0.17	-0.18
		1	Yes	6.16	5.99	0.17	2.86
B1OTREL	Household composition: Living with other relatives, as of B&B:16/17 interview	0	No	93.31	93.26	0.05	0.05
		1	Yes	6.69	6.74	-0.05	-0.69

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1PARIL	Household composition: Living with parents or in-laws, as of B&B:16/17 interview	0	No	72.76	72.20	0.56*	0.77
		1	Yes	27.24	27.80	-0.56*	-2.01
B1PAY1ST	First job, within 12 months after BA completion: Satisfaction with compensation	1	Dissatisfied	28.30	27.80	0.50	1.80
		2	Neither dissatisfied nor satisfied	29.70	29.55	0.15	0.50
		3	Satisfied	42.00	42.64	-0.65	-1.52
B1PAYRCNT	Most recent job, within 12 months after BA completion: Satisfaction with compensation	1	Dissatisfied	24.47	24.77	-0.30	-1.21
		2	Neither dissatisfied nor satisfied	28.84	29.13	-0.30	-1.02
		3	Satisfied	46.69	46.10	0.60	1.29
B1PIPLN	Teacher pipeline status, as of B&B:16/17 interview	0	Has not taught, has not prepared, and has not considered teaching	57.58	58.69	-1.11*	-1.89
		1	Has not taught, has not prepared, and has considered teaching	20.04	20.72	-0.68*	-3.29
		2	Has not taught, has prepared, and is not certified	3.75	3.73	0.01	0.38
		3	Has not taught, has prepared, and is certified	0.25	0.20	0.05*	23.55
		4	Has taught at the preK–12th grade level	18.39	16.66	1.73*	10.37
B1POSRCNT	Most recent teaching job, within 12 months after BA completion: Teaching position type	1	Regular classroom teacher	46.43	44.70	1.74	3.88
		2	Itinerant teacher	1.08	0.90	0.18	20.18
		3	Support teacher	7.25	7.19	0.06	0.88
		4	Teacher's aide	14.23	15.21	-0.98	-6.45
		5	Short-term substitute	6.34	6.20	0.13	2.14
		6	Long-term substitute	5.03	4.08	0.95*	23.25
		7	Student teacher	6.04	6.44	-0.41	-6.33
		8	Other teaching position	13.61	15.28	-1.67	-10.94
B1PRACT	Participated in a practicum during undergraduate education	0	No	85.08	84.83	0.25	0.29
		1	Yes	14.92	15.17	-0.25	-1.65

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1PREFT1ST	First job, within 12 months after BA completion: Prefer to work more hours	0	No	53.96	54.76	-0.80	-1.47
		1	Yes	46.04	45.24	0.80	1.77
B1PREFTRCNT	Most recent job, within 12 months after BA completion: Prefer to work more hours	0	No	56.02	55.66	0.36	0.65
		1	Yes	43.98	44.34	-0.36	-0.81
B1PREKRCNT	Most recent teaching job, within 12 months after BA completion: Taught early childhood education (preK)	0	Did not teach early childhood education	81.10	81.63	-0.53	-0.65
		1	Yes, taught early childhood education	18.90	18.37	0.53	2.91
B1PRSBRCNT	Most recent teaching job, within 12 months after BA completion: Felt prepared to teach all subjects taught	0	No	14.84	16.42	-1.58	-9.63
		1	Yes	85.16	83.58	1.58	1.89
B1PUPRRCNT	Most recent school, within 12 months after BA completion: Control (public/private)	1	Public school	87.36	86.65	0.71	0.82
		2	Private Catholic school	2.34	2.96	-0.62	-21.04
		3	Private school - other religious	4.68	4.57	0.11	2.50
		4	Private school - no religious	5.62	5.83	-0.20	-3.50
B1REC	Involved in intramural or recreational sports during undergraduate education	0	No	67.20	67.33	-0.13	-0.19
		1	Yes	27.36	27.34	0.02	0.08
		2	Not offered	5.44	5.33	0.11	1.97
B1REGION	Region of residence, as of B&B:16/17 interview	1	Northeast	5.79	5.86	-0.07	-1.15
		2	Mideast	18.04	18.22	-0.18	-0.99
		3	Great Lakes	14.85	14.86	-0.01	-0.07
		4	Plains	7.15	7.21	-0.06	-0.86
		5	Southeast	22.79	22.53	0.26	1.17
		6	Southwest	10.16	10.17	-0.01	-0.11
		7	Rocky Mountains	4.04	3.97	0.07	1.78
		8	Far West	16.69	16.70	-0.01	-0.07
		9	Outlying areas	0.49	0.48	0.01	1.93
B1RETEMP	Had an employer-based retirement account, as of B&B:16/17 interview	0	No	49.99	49.82	0.17	0.33
		1	Yes	50.01	50.18	-0.17	-0.33

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1RETNON	Had a non-employer-based retirement account, as of B&B:16/17 interview	0	No	81.45	81.43	0.02	0.03
		1	Yes	18.55	18.57	-0.02	-0.12
B1RLTINT1ST	First job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op	0	No	28.53	32.51	-3.98*	-12.24
		1	Yes	25.83	28.27	-2.45*	-8.65
		2	Did not have undergraduate internship, co-op, or practicum	45.65	39.22	6.43*	16.38
B1RLTINTRCNT	Most recent job, within 12 months after BA completion: Related to undergraduate internship, practicum or co-op	0	No	27.65	31.78	-4.12*	-12.98
		1	Yes	26.77	29.00	-2.23*	-7.68
		2	Did not have undergraduate internship, co-op, or practicum	45.57	39.22	6.35*	16.19
B1RSEMP	Reason for non-degree coursework between BA completion and June 2017: Needed for employment	0	No	81.25	80.48	0.78	0.96
		1	Yes	18.75	19.52	-0.78	-3.97
B1RSGOAL	Reason for non-degree coursework between BA completion and June 2017: Career goals	0	No	53.80	54.59	-0.79	-1.44
		1	Yes	46.20	45.41	0.79	1.73
B1RSLTED	Reason for non-degree coursework between BA completion and June 2017: Education goals	0	No	61.85	62.99	-1.14	-1.81
		1	Yes	38.15	37.01	1.14	3.08
B1RSOTH	Reason for non-degree coursework between BA completion and June 2017: Other	0	No	88.96	89.53	-0.57	-0.63
		1	Yes	11.04	10.47	0.57	5.42
B1RSPERS	Reason for non-degree coursework between BA completion and June 2017: Personal enrichment	0	No	59.36	57.74	1.61	2.80
		1	Yes	40.64	42.26	-1.61	-3.82
B1SALEMP	Ever was a salaried employee, within 12 months after BA completion	0	No	58.38	59.17	-0.79*	-1.33
		1	Yes	41.62	40.83	0.79*	1.93

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1SALEMP1ST	First job, within 12 months after BA completion: Salaried employee	0	No	68.88	69.66	-0.78*	-1.11
		1	Yes	31.12	30.34	0.78*	2.56
B1SALEMPRCNT	Most recent job, within 12 months after BA completion: Salaried employee	0	No	62.09	63.06	-0.96*	-1.53
		1	Yes	37.91	36.94	0.96*	2.61
B1SAMESTATE	Ever employed in same state as bachelor's degree-granting institution, within 12 months after BA completion	0	No	28.95	23.44	5.51*	23.52
		1	Yes	71.05	76.56	-5.51*	-7.20
B1SAMESTATE1ST	First employer, within 12 months after BA completion: Located in the same state as bachelor's degree-granting institution	0	No	26.55	24.96	1.59*	6.36
		1	Yes	73.45	75.04	-1.59*	-2.12
B1SAMESTATERCNT	Most recent employer, within 12 months after BA completion: Located in the same state as BA-granting institution	0	No	28.24	28.58	-0.34	-1.18
		1	Yes	71.76	71.42	0.34	0.47
B1SCIRCNT	Most recent teaching job, within 12 months after BA completion: Taught natural sciences	0	No	89.76	89.56	0.20	0.22
		1	Yes	10.24	10.44	-0.20	-1.90
B1SEC1ST	First job, within 12 months after BA completion: Satisfaction with job security	1	Dissatisfied	14.91	14.32	0.59*	4.13
		2	Neither dissatisfied nor satisfied	25.25	24.36	0.89*	3.66
		3	Satisfied	59.84	61.32	-1.48*	-2.42
B1SECERCNT	Most recent teaching job, within 12 months after BA completion: Taught general education (middle/secondary grades)	0	No	91.08	91.13	-0.05	-0.06
		1	Yes	8.92	8.87	0.05	0.58
B1SECRCNT	Most recent job, within 12 months after BA completion: Satisfaction with job security	1	Dissatisfied	11.35	11.49	-0.14	-1.23
		2	Neither dissatisfied nor satisfied	22.39	22.53	-0.14	-0.64
		3	Satisfied	66.26	65.97	0.28	0.43

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1SECT	First postsecondary institution control and level	1	Public 4-year	45.02	45.05	-0.03	-0.07
		2	Public 2-year	26.82	26.52	0.30	1.11
		3	Public less-than-2-year	0.27	0.25	0.02	8.59
		4	Private nonprofit 4-year	23.44	23.85	-0.41	-1.70
		5	Private nonprofit 2-year	0.11	0.08	0.02*	25.11
		6	Private nonprofit less-than-2-year	0.11	0.14	-0.03	-20.17
		7	For-profit 4-year	3.55	3.47	0.08	2.22
		8	For-profit 2-year	0.35	0.33	0.02	6.73
		9	For-profit less-than-2-year	0.34	0.31	0.03	9.21
B1SEDRCNT	Most recent teaching job, within 12 months after BA completion: Taught special education					-0.07	
		0	No	88.45	88.52		-0.08
		1	Yes	11.55	11.48	0.07	0.58
B1SELLPO	Financial result if respondent were to sell all major possessions, turn all investments and other assets into cash, and pay off all debts, as of B&B:16/17 interview					-0.53	
		1	Have something left over	44.84	45.37		-1.17
		2	Break even	14.31	14.28	0.02	0.17
		3	Be in debt	40.85	40.35	0.50	1.25
B1SFRBFGF	Sharing financial responsibilities with boyfriend or girlfriend, as of B&B:16/17 interview					1.61*	
		0	No	90.34	88.73		1.81
		1	Yes	9.66	11.27	-1.61*	-14.27
B1SFRFRRM	Sharing financial responsibilities with friends or roommates, as of B&B:16/17 interview					0.56*	
		0	No	89.54	88.98		0.63
		1	Yes	10.46	11.02	-0.56*	-5.07
B1SFROTHERS	Sharing financial responsibilities with other types of individuals, as of B&B:16/17 interview					0.04	
		0	No	98.96	98.92		0.04
		1	Yes	1.04	1.08	-0.04	-3.93
B1SFRPARENTS	Sharing financial responsibilities with parents, as of B&B:16/17 interview					0.78*	
		0	No	81.84	81.06		0.96
		1	Yes	18.16	18.94	-0.78*	-4.11

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1SFRRELATIVES	Sharing financial responsibilities with a sibling, as of B&B:16/17 interview	0	No	96.42	96.25	0.17	0.18
		1	Yes	3.58	3.75	-0.17	-4.61
B1SFRSPOUSE	Sharing financial responsibilities with spouse or domestic partner, as of B&B:16/17 interview	0	No	74.89	77.97	-3.08*	-3.95
		1	Yes	25.11	22.03	3.08*	13.97
B1SOCRCNT	Most recent teaching job, within 12 months after BA completion: Taught social sciences	0	No	91.02	90.08	0.94	1.04
		1	Yes	8.98	9.92	-0.94	-9.43
B1SPAMT	Spouse or domestic partner's student loans: Amount borrowed, as of B&B:16/17 interview	0	{Zero}	50.14	48.55	1.59*	3.28
		1	$1 - $9,999	8.76	9.07	-0.31	-3.44
		2	$10,000 - $19,999	10.34	10.37	-0.04	-0.35
		3	$20,000 - $29,999	9.70	9.89	-0.19	-1.90
		4	$30,000 - $39,999	6.84	6.97	-0.12	-1.75
		5	$40,000 - $49,999	3.76	3.82	-0.05	-1.36
		6	$50,000 - $59,999	3.34	3.31	0.03	0.99
		7	$60,000 - $69,999	2.32	2.48	-0.16	-6.40
		8	$70,000 - $79,999	1.01	0.99	0.01	1.15
		9	$80,000 - $89,999	1.24	1.74	-0.50*	-28.90
		10	$90,000 - $99,999	0.53	0.61	-0.07	-12.27
		11	$100,000 or more	2.01	2.20	-0.19	-8.68
B1SPCOL	Spouse or domestic partner attended college or graduate school, 2016–17 school year	0	No	74.75	74.79	-0.05	-0.06
		1	Yes	25.25	25.21	0.05	0.19
B1SPEMP	Spouse or domestic partner ever employed, 2016 calendar year	0	No	14.05	13.50	0.55	4.08
		1	Yes	85.95	86.50	-0.55	-0.64

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1SPLNPY	Spouse or domestic partner's student loans: Monthly payment, as of B&B:16/17 interview	0	0	37.85	36.05	1.80	4.98
		1	$0.01 - $49.99	3.24	2.82	0.42	14.90
		2	$50.00 - $99.99	8.53	8.05	0.48	5.95
		3	$100.00 - $149.99	9.82	9.96	-0.14	-1.37
		4	$150.00 - $199.99	8.01	9.11	-1.10	-12.12
		5	$200.00 - $249.99	9.36	10.14	-0.77	-7.62
		6	$250.00 - $499.99	15.58	16.47	-0.89	-5.39
		7	$500.00 - $749.99	4.39	4.30	0.09	2.11
		8	$750.00 - $999.99	1.63	1.63	0.00	-0.14
		9	$1,000 or more	1.58	1.46	0.12	8.13
B1SPLV	Spouse or domestic partner's education level, as of B&B:16/17 interview	1	Did not complete high school	2.34	2.28	0.06	2.74
		2	High school diploma or equivalent	15.22	14.90	0.32	2.14
		3	Vocational or technical training	5.89	5.85	0.04	0.74
		4	Less than 2 years of college	7.95	7.52	0.43	5.67
		5	Associate's degree	9.45	9.08	0.37	4.08
		6	2 or more years of college but no degree	6.60	7.19	-0.60	-8.28
		7	Bachelor's degree	41.71	42.57	-0.86	-2.01
		8	Graduate degree	10.83	10.60	0.23	2.17
B1SPODP	Household composition: Living with spouse or domestic partner, as of B&B:16/17 interview	0	No	71.88	72.35	-0.48	-0.66
		1	Yes	28.12	27.65	0.48	1.73
B1SPOWE	Spouse or domestic partner's student loans: Amount owed, as of B&B:16/17 interview	1	All	32.47	32.20	0.27	0.84
		2	Some	51.46	50.89	0.58	1.13
		3	None	16.06	16.91	-0.85	-5.02
B1STEMOC	Ever employed in a STEM occupation, within 12 months after BA completion	0	No	70.71	71.49	-0.79*	-1.10
		1	Yes	29.29	28.51	0.79*	2.76
B1STRESS	Had financial difficulty, within the 12 months before B&B:16/17 interview	0	No	79.63	79.71	-0.08	-0.10
		1	Yes	20.37	20.29	0.08	0.39

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1SUBGRE	Took GRE Subject Test, as of June 2017	0	No	99.00	99.00	0.01	0.01
		1	Yes	1.00	1.00	-0.01	-0.50
B1TCHM00	Worked as a teacher, month of BA completion	0	No	98.19	98.13	0.06*	0.06
		1	Yes	1.81	1.87	-0.06*	-3.19
B1TCHM01	Worked as a teacher, 1 month after BA completion	0	No	97.55	97.41	0.13*	0.14
		1	Yes	2.45	2.59	-0.13*	-5.17
B1TCHM02	Worked as a teacher, 2 months after BA completion	0	No	97.05	96.87	0.18*	0.18
		1	Yes	2.95	3.13	-0.18*	-5.64
B1TCHM03	Worked as a teacher, 3 months after BA completion	0	No	95.79	95.52	0.27*	0.28
		1	Yes	4.21	4.48	-0.27*	-6.06
B1TCHM04	Worked as a teacher, 4 months after BA completion	0	No	95.39	95.10	0.29*	0.30
		1	Yes	4.61	4.90	-0.29*	-5.82
B1TCHM05	Worked as a teacher 5, months after BA completion	0	No	95.22	94.92	0.30*	0.31
		1	Yes	4.78	5.08	-0.30*	-5.85
B1TCHM06	Worked as a teacher, 6 months after BA completion	0	No	95.30	95.00	0.30*	0.32
		1	Yes	4.70	5.00	-0.30*	-6.00
B1TCHM07	Worked as a teacher, 7 months after BA completion	0	No	95.35	95.10	0.25*	0.26
		1	Yes	4.65	4.90	-0.25*	-5.11
B1TCHM08	Worked as a teacher, 8 months after BA completion	0	No	94.85	94.54	0.30*	0.32
		1	Yes	5.15	5.46	-0.30*	-5.53
B1TCHM09	Worked as a teacher, 9 months after BA completion	0	No	94.79	94.49	0.30*	0.32
		1	Yes	5.21	5.51	-0.30*	-5.41

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1TCHM10	Worked as a teacher, 10 months after BA completion	0	No	94.77	94.49	0.28*	0.30
		1	Yes	5.23	5.51	-0.28*	-5.14
B1TCHM11	Worked as a teacher, 11 months after BA completion	0	No	94.76	94.45	0.31*	0.33
		1	Yes	5.24	5.55	-0.31*	-5.56
B1TCHM12	Worked as a teacher, 12 months after BA completion	0	No	94.84	94.54	0.30*	0.31
		1	Yes	5.16	5.46	-0.30*	-5.45
B1TCHOCC	Ever employed in teaching occupation, within 12 months after BA completion	0	No	91.77	92.37	-0.60*	-0.65
		1	Yes	8.23	7.63	0.60*	7.83
B1TEACHR	Regular, long-term substitute, or support teacher, within 12 months after BA completion	0	No	96.87	96.03	0.84*	0.88
		1	Yes	3.13	3.97	-0.84*	-21.18
B1TTLIRCNT	Most recent school, within 12 months after BA completion: Title I eligible	0	Not Title I eligible	25.44	26.29	-0.86	-3.26
		1	Yes, Title I eligible	74.56	73.71	0.86	1.16
B1UGCARPREP	Studies at BA-granting institution prepared respondent for future career, as of NPSAS:16 interview	1	Completely disagree	2.32	2.38	-0.06	-2.47
		2	Disagree	4.29	4.20	0.09	2.21
		3	Neither agree nor disagree	11.08	11.11	-0.03	-0.29
		4	Agree	40.65	40.57	0.07	0.18
		5	Completely agree	41.66	41.74	-0.08	-0.18
B1UGCARSRVS1	Utilized searchable job database from career planning services at BA-granting institution, as of NPSAS:16 interview	0	No	74.29	74.45	-0.16	-0.22
		1	Yes	25.71	25.55	0.16	0.63
B1UGCARSRVS2	Utilized career counseling from career planning services at BA-granting institution, as of NPSAS:16 interview	0	No	77.97	78.20	-0.23	-0.30
		1	Yes	22.03	21.80	0.23	1.07

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1UGCARSRVS3	Utilized online career or personality assessments from career planning services at BA-granting institution, as of NPSAS:16 interview	0	No	88.03	88.08	-0.05	-0.06
		1	Yes	11.97	11.92	0.05	0.41
B1UGCARSRVS4	Participated in career/job fairs at BA-granting institution, as of NPSAS:16 interview	0	No	72.62	72.48	0.14	0.20
		1	Yes	27.38	27.52	-0.14	-0.52
B1UGCARSRVS5	Participated in career planning services' mock interviews at BA-granting institution, as of NPSAS:16 interview	0	No	88.41	88.49	-0.08	-0.09
		1	Yes	11.59	11.51	0.08	0.66
B1UGCARSRVS6	Utilized resume or cover letter assistance from career planning services at BA-granting institution, as of NPSAS:16 interview	0	No	68.28	68.77	-0.49	-0.71
		1	Yes	31.72	31.23	0.49	1.56
B1UGCARSRVS7	Utilized alumni network from career planning services at BA-granting institution, as of NPSAS:16 interview	0	No	90.89	91.07	-0.18	-0.20
		1	Yes	9.11	8.93	0.18	2.02
B1UGCARSRVS8	Utilized another type of career planning service at BA-granting institution, as of NPSAS:16 interview	0	No	98.37	98.42	-0.06	-0.06
		1	Yes	1.63	1.58	0.06	3.66
B1UGCARSRVS9	Did not use career planning services at BA-granting institution, as of NPSAS:16 interview	0	No	40.91	40.49	0.42	1.04
		1	Yes	59.09	59.51	-0.42	-0.71

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1UGEXOCC33	Occupation code for expected occupation, as of NPSAS:16 interview (33 categories)	1	Agriculture occupations	0.39	0.36	0.03	9.53
		2	Air transportation professionals	0.14	0.12	0.02	15.27
		3	Artists and designers	5.13	4.84	0.29	5.91
		4	Business managers	8.14	8.01	0.13	1.59
		5	Business occupations (nonmanagement)	12.27	11.90	0.37	3.10
		6	Business and legal support (nonsecretarial)	5.62	5.73	-0.11	-1.91
		7	Communication professionals	3.62	3.57	0.06	1.59
		8	Computer and information systems occupations	5.99	5.96	0.04	0.59
		9	Construction and mining occupations	0.44	0.53	-0.09	-17.24
		10	Engineering technicians	0.85	0.79	0.06	7.03
		11	Engineers	4.94	4.99	-0.05	-0.91
		12	Fitters, tradesmen, and mechanics	1.07	1.05	0.01	1.38
		13	Food service occupations	1.09	1.06	0.03	2.79
		14	Healthcare professionals (nonnurses)	2.66	2.75	-0.08	-3.00
		15	Information professionals	0.63	0.61	0.02	3.13
		16	Legal professionals	0.38	0.39	-0.01	-2.36
		17	Life scientists	3.12	3.19	-0.07	-2.20
		18	Math-related occupations	0.65	0.67	-0.02	-2.63
		19	Military occupations	0.25	0.27	-0.02	-7.72
		20	Nurses	7.02	6.87	0.15	2.18
		21	Other educators	2.15	2.29	-0.15	-6.37
		22	Other healthcare occupations	4.81	4.81	-0.01	-0.13
		23	Personal care occupations	1.65	1.75	-0.10	-5.76
		24	Physical scientists	1.27	1.28	-0.01	-0.89
		25	PreK–12 educators	6.77	6.92	-0.14	-2.09
		26	Postsecondary educators	2.76	2.83	-0.06	-2.23
		27	Protective service occupations	1.89	1.86	0.04	1.89
		28	Sales occupations	3.31	3.49	-0.18	-5.04
		29	Secretaries and administrative assistants	1.30	1.36	-0.06	-4.48
		30	Social scientists	1.36	1.43	-0.07	-4.56
		31	Social service professionals	7.55	7.61	-0.06	-0.79
		32	Sports occupations	0.61	0.57	0.04	7.40
		33	Transport support occupations	0.16	0.15	0.01	4.59

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1UGGRADAPP	Applied to graduate school before BA completion	0	Did not apply to graduate school	76.04	75.69	0.35	0.47
		1	Applied to graduate school	23.96	24.31	-0.35	-1.46
B1UGGRDATND	Likelihood will attend graduate school within the next 12 months, as of NPSAS:16 interview	1	Very unlikely	8.26	8.23	0.04	0.44
		2	Somewhat unlikely	6.34	6.29	0.04	0.71
		3	Neither unlikely or likely	8.53	7.91	0.61*	7.77
		4	Somewhat likely	31.06	31.14	-0.09	-0.27
		5	Very likely	45.81	46.42	-0.61	-1.31
B1UGGRDPLN	Likelihood will apply to graduate school within the next 12 months, as of NPSAS:16 interview	1	Very unlikely	35.45	35.64	-0.19	-0.55
		2	Somewhat unlikely	20.25	20.23	0.02	0.09
		3	Neither unlikely or likely	13.52	13.21	0.31	2.31
		4	Somewhat likely	18.25	18.18	0.07	0.41
		5	Very likely	12.53	12.73	-0.20	-1.59
B1UGLEADER	Held a formal leadership role during undergraduate education	0	No, did not hold a formal leadership role	61.33	61.62	-0.28	-0.46
		1	Yes, held a formal leadership role	38.67	38.38	0.28	0.74
B1UGLEARNCOMM	Participated in a learning community during undergraduate education	0	No, did not participate in a learning community	80.56	80.67	-0.11	-0.14
		1	Yes, participated in a learning community	19.44	19.33	0.11	0.59
B1UGOCCCOM	Likelihood of entering expected occupation, as of NPSAS:16 interview	1	Very unlikely	4.14	4.15	-0.01	-0.25
		2	Somewhat unlikely	5.34	5.45	-0.10	-1.89
		3	Neither unlikely or likely	10.41	10.07	0.34	3.35
		4	Somewhat likely	24.76	24.93	-0.17	-0.68
		5	Very likely	55.35	55.40	-0.05	-0.10
B1UGPINTERN	Participated in a paid internship during undergraduate education	0	No	71.05	71.28	-0.23	-0.33
		1	Yes	28.95	28.72	0.23	0.81
B1UGRESEARCH	Participated in a research project with a faculty member during undergraduate education	0	No, did not participate in undergraduate research	73.42	73.39	0.03	0.05
		1	Yes, participated in undergraduate research	26.58	26.61	-0.03	-0.13

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1UGSREXP	Participated in a culminating senior experience during undergraduate education	0	No, did not participate in a culminating senior experience	39.28	39.21	0.07	0.17
		1	Yes, participated in a culminating senior experience	60.72	60.79	-0.07	-0.11
B1UGUINTERN	Participated in an unpaid internship during undergraduate education	0	No	69.27	69.21	0.06	0.09
		1	Yes	30.73	30.79	-0.06	-0.20
B1UGWKPLN	Plans for work after graduation, as of NPSAS:16 interview	1	Not work	6.28	6.33	-0.06	-0.89
		2	Work full time	78.28	78.03	0.25	0.31
		3	Work part time	14.51	14.67	-0.16	-1.12
		4	Join the military	0.94	0.96	-0.02	-2.57
B1VAR	Involved in intercollegiate sports during undergraduate education	0	No	85.06	85.04	0.02	0.03
		1	Yes	7.93	8.03	-0.10	-1.25
		2	Not offered	7.01	6.93	0.08	1.10
B1VOCRCNT	Most recent teaching job, within 12 months after BA completion: Taught vocational/career/technical education	0	No	97.90	98.05	-0.15	-0.15
		1	Yes	2.10	1.95	0.15	7.61
B1VTNEL	Voted in 2016 presidential election	0	No	26.57	26.56	0.02	0.06
		1	Yes	73.43	73.44	-0.02	-0.02
B1WORTH	Undergraduate education worth the financial cost, as of B&B:16/17 interview	0	Undergraduate education not worth financial cost	35.02	34.70	0.32	0.91
		1	Undergraduate education worth financial cost	64.98	65.30	-0.32	-0.48
B1WRKS	Primarily student or employee while concurrently employed and enrolled, between BA completion and June 2017	1	A student working to meet expenses	78.23	78.64	-0.41	-0.52
		2	An employee who decided to enroll in school	21.77	21.36	0.41	1.93
B1WYFR1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities	0	No	91.47	90.66	0.81	0.90
		1	Yes	8.53	9.34	-0.81	-8.70

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1WYFRRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Family responsibilities	0	No	90.67	90.69	-0.02	-0.03
		1	Yes	9.33	9.31	0.02	0.25
B1WYMLJ1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job	0	No	82.20	82.25	-0.05	-0.06
		1	Yes	17.80	17.75	0.05	0.29
B1WYMLJRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Held more than one job	0	No	82.27	81.20	1.07	1.32
		1	Yes	17.73	18.80	-1.07	-5.69
B1WYNJA1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available	0	No	65.00	65.88	-0.89	-1.35
		1	Yes	35.00	34.12	0.89	2.60
B1WYNJARCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Full-time job not available	0	No	66.90	66.39	0.51	0.77
		1	Yes	33.10	33.61	-0.51	-1.52
B1WYNOH1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours	0	No	79.67	79.01	0.65	0.83
		1	Yes	20.33	20.99	-0.65	-3.12
B1WYNOHRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Did not need or want to work more hours	0	No	77.84	78.37	-0.53	-0.68
		1	Yes	22.16	21.63	0.53	2.45
B1WYOTH1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason	0	No	85.18	86.20	-1.02	-1.18
		1	Yes	14.82	13.80	1.02	7.38
B1WYOTHRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Other reason	0	No	85.01	85.89	-0.89	-1.03
		1	Yes	14.99	14.11	0.89	6.29

See notes at end of table.

Table K-3. Distributions of categorical variables before and after imputation: 2017—Continued

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B1WYSCH1ST	First job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school	0	No	54.34	51.72	2.62*	5.06
		1	Yes	45.66	48.28	-2.62*	-5.42
B1WYSCHRCNT	Most recent job, within 12 months after BA completion: Reason worked less than 30 hours: Working while attending school	0	No	50.36	49.17	1.19	2.42
		1	Yes	49.64	50.83	-1.19	-2.34
DEGPRBA	Prior degree: Bachelor's	0	No	94.11	94.05	0.07	0.07
		1	Yes	5.89	5.95	-0.07	-1.10

* $p < .05$

NOTE: Distributions were computed using the B&B:16/17 final analysis weight. 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. PreK = prekindergarten. ESL = English as a Second Language. TEACH = Teacher Education Assistance for College and Higher Education. GMAT = Graduate Management Admission Test. GRE = Graduate Record Examination. LSAT = Law School Admission Test. MCAT = Medical College Admission Test. STEM = Science, Technology, Engineering and Mathematics. NPSAS = National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/17 Baccalaureate & Beyond Longitudinal Study (B&B:16/17).