

# 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20)

Data File Documentation

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# Executive Summary

The 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) is the second follow-up data collection of bachelor's degree recipients who completed their degree in the 2015–16 academic year. B&B:16/20 draws from the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) to create a nationally representative sample of bachelor's degree recipients. The data collected in B&B:16/20 are intended to provide researchers and policymakers with key information on student debt and repayment as well as postbaccalaureate enrollment and employment outcomes 4 years after completion of a bachelor's degree with a special focus on the experiences of elementary and secondary teachers. This data file documentation details the methods used to collect, process, and analyze these data, and it also provides users with guidance on how to analyze these nationally representative data.

## Sampling Design

The B&B:16 cohort was sampled from the NPSAS:16 sampling frame. NPSAS:16 was a nationally representative survey of students attending Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. NPSAS:16 sample members were enrolled in postsecondary education at all levels, excluding those currently enrolled in high school or exclusively enrolled in a high school equivalency program. Among the group of students eligible for NPSAS:16, students were also identified as potentially eligible for the B&B:16 cohort if their records indicated they had earned or were expected to earn a bachelor's degree in the 2015–16 academic year.

The first follow-up data collection, B&B:16/17, confirmed eligibility of the potential 2015–16 baccalaureate recipients identified in NPSAS:16. Students were eligible for the B&B:16 cohort if they completed all bachelor's degree requirements in the 2015–16 academic year and received a bachelor's degree no later than June 30, 2017.

In the second follow-up, B&B:16/20, sample members were contacted again during the 2020–21 academic year. The B&B:16/20 sample consisted of all 26,510 B&B:16/17 sample members. During B&B:16/20 data collection, approximately 260 individuals were identified as ineligible or deceased.

Therefore, the eligible sample for B&B:16/20 consisted of 26,250 individuals. The weighted response rate was 63 percent.

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

The B&B:16/20 survey focused on key outcomes over the 4 years following the sample members' bachelor's degree completion. The survey was designed to gather information about a range of topics including postbaccalaureate education, student loan debt and repayment, employment, teaching experiences (for current and former prekindergarten through 12th-grade teachers), and demographic characteristics such as current marital status and household financial status. Additionally, in response to the coronavirus pandemic, several items capturing respondent experiences due to related societal changes were added to the survey. A facsimile of the final survey instrument is included as an appendix to this report.

The B&B:16/20 survey was available by both web-based instrument and telephone interview. In addition to the full survey, two shortened versions were developed for nonresponse conversion: an abbreviated survey and a mini survey. The *abbreviated* survey (completed in an average of 14 minutes) consisted of a subset of items from the full survey, including information for up to three employers and one job title as well as education experiences, debt and repayment, and background information. The *mini* survey (completed in an average of 4 minutes) requested only high-level status indicators (e.g., enrolled in a degree or certificate program during the survey time frame) and select background information.

To assess respondent burden and instrument performance, survey items were evaluated based on how quickly they were completed, the number of B&B:16/20 respondents who did not respond to the item, and consistency between the distribution of responses for telephone respondents and web respondents. Coder forms—survey items in which respondents started typing a response and then selected an option from a predicted list—were evaluated based on the proportion of respondents who identified a response from the predicted list.

The B&B:16/20 data collection began in July 2020 and continued through March 2021. Overall, 20,640 B&B:16/20 sample members were located, and 17,160 sample members (76 percent of the B&B:16/20-eligible fielded sample) were deemed B&B:16/20 respondents. Sample members were considered a B&B:16/20 respondent if they completed either a full, abbreviated, or mini survey. Partial

survey completers were considered B&B:16/20 respondents if they completed the survey through the portion of the employment section where they reported all their employers.

Among B&B:16/20 respondents, 97 percent completed the survey on the Web (this includes smartphones and other mobile devices), and 3 percent completed it by telephone. The average completion time for the full survey was 32 minutes for web nonmobile respondents, 31 minutes for web mobile respondents, and 55 minutes for telephone respondents, with substantially shorter completion times for the abbreviated and mini surveys.

## Administrative Data Sources

Administrative records were also collected for B&B:16/20 to supplement the survey data. The Department of Education's Central Processing System for Federal Student Aid provided demographic and enrollment information for 3,900 sample members (15 percent) who applied for federal student aid in the 2018–19 academic year and 3,180 sample members (12 percent) who applied in the 2019–20 academic year. The National Student Loan Data System (NSLDS) provided historical information about disbursement of federal student loans and grants as well as debt and repayment outcomes for all sample members. This data match to NSLDS yielded student loan data for 19,290 sample members (75 percent), and Pell Grant data for 14,800 sample members (58 percent). The National Student Clearinghouse StudentTracker service provided information on institutions attended, enrollment dates, and degree completions. This match yielded information for 25,460 sample members (96 percent). Finally, the Veterans Benefits Administration data system provided information on 2,890 sample members' service status (11 percent).

## Data File Processing and Preparation

The B&B:16/20 restricted-use dataset includes derived variables, along with source data from the B&B:16/20 survey, the B&B:16/17 survey, the NPSAS:16 survey, and administrative data sources. The public can generate tables of estimates and simple regressions based upon restricted-use data using PowerStats, a web-based data analysis tool available on the DataLab website (<https://nces.ed.gov/datalab>).

To protect the confidentiality of study member information and to minimize disclosure risks, B&B:16/20 data were subject to data swapping, a perturbation procedure approved by the Institute of Education Sciences Disclosure Review

Board. All respondents were eligible for swapping. Perturbation was carried out using specific, targeted, but undisclosed, swap rates. This process preserved the central tendency estimates but may increase nonsampling error slightly. An extensive data quality check was carried out to assess and limit the impact of swapping. To construct the analysis dataset, data from the B&B:16/20 survey and administrative data sources were edited, recoded, upcoded, and combined to make analysis variables. The resulting variables were extensively reviewed for quality and accuracy. Details about variable construction and sources are available on the restricted-use files and in DataLab.

## **Weighting and Variance Estimation**

Because the B&B:16 cohort is a subset of the NPSAS:16 sample, statisticians derived the weights for analyzing the B&B:16/20 data from the NPSAS:16 student design weights and follow-up data collection design weights. These design weights were adjusted to account for subsampling and nonresponse and were also calibrated to weighted estimates obtained from NPSAS:16 and population estimates.

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

# Acknowledgments

The authors acknowledge and thank the respondents who participated in the second follow-up of the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20). This study would not have been possible without their invaluable contributions.

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# Chapter 1. Overview of B&B:16/20

This report describes the design, methods, and results of the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) conducted by the U.S. Department of Education’s National Center for Education Statistics (NCES). It is the second follow-up with a cohort of bachelor’s degree recipients originally identified during the 2015–16 National Postsecondary Student Aid Study (NPSAS:16). The following legislation authorizes the Baccalaureate and Beyond Longitudinal Study (B&B):

- the Higher Education Act of 1965, as amended by the Higher Education Opportunity Act of 2008, 20 U.S.C. § 1015(a) (2012) and
- the Education Sciences Reform Act of 2002, 20 U.S.C. §§ 9541 to 9548 (2012).

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 survey, explains 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 for study data. Finally, chapter 6 presents information on weighting, imputation, bias analysis, and variance estimation. 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:16/20 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 that address issues such as access, choice, enrollment, persistence, attainment, continuing education in graduate and/or professional schools, and the financial and other benefits of postsecondary education to both individuals and society. B&B is one of several studies sponsored by NCES to address these issues.

Each NPSAS traditionally serves as the base-year data collection for one of two longitudinal studies: the current study, B&B, or the Beginning Postsecondary Students Longitudinal Study. NPSAS:16 is the base-year data collection for a cohort of bachelor’s degree recipients with three follow-up collections—the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) in 2017, B&B:16/20 in 2020, and the 2016/26 Baccalaureate and Beyond Longitudinal Study (B&B:16/26), planned for 2026. 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. B&B:16/20 collects employment and education information from college graduates 4 years after they graduate, with a special emphasis on those in the teaching profession. Users should refer to the NPSAS:16 data file documentation for more information about the base-year data collection (<https://nces.ed.gov/pubs2018/2018482.pdf>) and the B&B:16/17 data file documentation for more information about the first follow-up study (<https://nces.ed.gov/pubs2020/2020441.pdf>). Table 1 shows the chronology of B&B. NCES currently lacks resources to undertake the 2026 follow-up collection but is seeking them.

**Table 1. Chronology of B&B: 1993–2022**

<b>B&amp;B cohort</b>	<b>Base-year study</b>	<b>First follow-up</b>	<b>Second follow-up</b>	<b>Third follow-up</b>
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 (possibly)

NOTE: NPSAS = National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

## 1.2 Overview of B&B:16/20 Study Design and Data Collection

Data collection efforts for B&B:16/20 consisted of a survey and administrative record matching. The respondent universe for the full-scale study included all individuals who completed requirements for a bachelor’s degree during the 2015–16 academic year and received their degree by June 30, 2017. Full-scale data from sample members were collected via an online eligibility screener with an address update, the main online survey, or through web-based computer-assisted telephone interviewing (CATI).

Additionally, the sample was matched with several administrative data sources including the Department of Education’s Central Processing System (CPS) for Federal Student Aid (FSA), which houses and processes data contained in the Free Application for Federal Student Aid (FAFSA) forms; the National Student Loan Data System (NSLDS), which contains federal loan and grant files; the National Student Clearinghouse (NSC), which provides enrollment and degree verification; and the Veterans Benefits Administration (VBA), which identifies veterans education benefit amounts. A full description of administrative records matching processes and outcomes is provided in Chapter 4.

Notably, the B&B:16/20 data collection began in July 2020, during the coronavirus pandemic. Although the study schedule was not delayed, items were added to the survey to collect information on respondent experiences during the pandemic and to clarify question concepts and response options affected by societal changes, particularly with respect to postbaccalaureate education enrollment and the repayment of student loans. For example, many institutions closed or moved to online instruction; new rules were released about how student aid could be used; and Congress enacted the Coronavirus Aid, Relief, and Economic Security (CARES) Act. The CARES Act suspended federal student loan payments, paused collections on defaulted loans, and waived interest on federal loans through January 2022. These developments and guidance from education experts were the basis for the coronavirus pandemic items in the B&B:16/20 survey (refer to appendix B for the survey instrument).

## 1.3 Schedule and Products

Table 2 shows the schedule for the major activities of the full-scale study.

**Table 2. Schedule of major activities for the B&B:16/20 full-scale study: 2019–22**

<b>B&amp;B:16/20 activity</b>	<b>Start date</b>	<b>End date</b>
Contact information updates	Nov. 22, 2019	Mar. 22, 2020
Self-administered web-based data collection	July 6, 2020	Mar. 19, 2021
Conduct telephone interviews	July 23, 2020	Mar. 19, 2021
Nonresponse conversion efforts	Jan. 25, 2021	Mar. 19, 2021
Process data, construct data files	July 7, 2020	Aug. 25, 2022
Prepare/update reports	July 7, 2020	Dec. 4, 2023

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

In addition to this data file documentation, two reports—*Baccalaureate and Beyond (B&B:16/20): A First Look at the 2020 Experiences of 2015–16 College Graduates During the COVID19 Pandemic* and *Baccalaureate and Beyond (B&B:16/20): A First Look at the 2020 Employment and Education Experiences of 2015–16 College Graduates*—will be available on the NCES website at <https://nces.ed.gov/surveys/b&b/>.

B&B microlevel data files, associated codebooks, and data file documentation are available to researchers who have 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 data analysis tools in the DataLab application, found at <https://nces.ed.gov/datalab>, to review and analyze the derived data file without a restricted-use license. Within DataLab, PowerStats can produce summary statistics and complex tables, as well as estimate regression models. It permits analysis without disclosing microlevel data to the user and suppresses or flags any estimates that fail to meet NCES reporting standards. DataLab also contains the Tables Library, which houses thousands of published analysis tables sortable by topic, publication, and source.

## Chapter 2. Sampling Design

The B&B:16 study collects data from and about individuals who completed requirements for a bachelor’s degree at a Title IV eligible postsecondary institution in the 50 states, the District of Columbia, or Puerto Rico between July 1, 2015, and June 30, 2016. This chapter describes the B&B:16 cohort’s universe and the sampling design implemented across NPSAS:16 and B&B:16/17 to evaluate eligibility for the B&B:16 cohort through B&B:16/20.

Identification of the B&B:16/20 sample required a multistage process that began with the NPSAS:16 sample of institutions, followed by selection of students within those institutions. Each follow-up data collection involved an additional stage of sampling, which used follow-up data to deem sample members ineligible and exclude them from the cohort. These sampling procedures and methods were developed and then refined in consultation with a Technical Review Panel (TRP) composed of nationally recognized experts in higher education, NCES staff, and representatives of other federal agencies.<sup>1</sup>

### 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 NPSAS:16 institution and student universes are defined below. For more detailed information regarding the NPSAS:16 sampling design, see chapter 2 of the NPSAS:16 data file documentation (Wine, Siegel, and Stollberg 2018).

#### 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 the following:

- offered an educational program designed for persons who had completed secondary education;

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<sup>1</sup> See appendix C for a list of TRP participants who contributed to recent B&B studies.

- offered at least one academic, occupational, or vocational program of study lasting at least 3 months or 300 clock hours;<sup>2</sup>
- offered courses that were open to more than the employees or members of the company or group (e.g., union) that administered the institution;
- 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.<sup>3</sup>

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 the 1999–2000 National Postsecondary Student Aid Study (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, although 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.

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

<sup>3</sup> A Title IV eligible institution is an institution that has a written agreement (program participation agreement) with the U.S. Secretary of Education that allows the institution to participate in any of the Title IV federal student financial assistance programs other than the State Student Incentive Grant and the National Early Intervention Scholarship and Partnership programs.

### 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<sup>4</sup> at eligible postsecondary institutions in the United States and 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 that 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;
- 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 the selection of institutions, with a sampling frame derived from various Integrated Postsecondary Education Data System (IPEDS) files.<sup>5</sup> NPSAS statisticians selected 2,000 institutions using a variation of probability proportional to size 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

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<sup>4</sup> 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 before the summer term.

<sup>5</sup> The IPEDS files used to construct the NPSAS:16 full-scale 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. Separate institution frames were created for the field test and the full-scale study, and some institutions included in the field-test sampling frame were not included in the full-scale sampling frame. The field-test institution frame was constructed from the same survey files for the previous academic year.

samples<sup>6</sup> 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 control and level of the institution.

**Table 3. Size of NPSAS:16 institution universe, institution sampling rate, and number of institutions sampled, by control and level of institution: 2015–16**

Control and level of institution <sup>1</sup>	Size of universe <sup>2</sup>	Institution sampling rate	Number of institutions sampled
<b>Total</b>	<b>6,920</b>	<b>28.9</b>	<b>2,000</b>
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

<sup>1</sup> Control and level of institution are based on data from the sampling frame, which was formed from the Integrated Postsecondary Education Data System (IPEDS) 2014–15 Institutional Characteristics Header file.

<sup>2</sup> 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,<sup>7</sup> as well as the unweighted and weighted participation rates, by control and level of institution. Almost all the 2,000 sampled institutions met the eligibility requirements. Of those 2,000 sampled institutions, 1,750 provided enrollment lists. Overall, the NPSAS:16 institution response rate was commensurate with that of previous rounds of NPSAS.

<sup>6</sup> Self-weighting samples have equal weights within sampling domains.

<sup>7</sup> Participating institutions are those institutions that provided enrollment lists for student sampling.



**Table 4. Number of NPSAS:16 sampled and eligible institutions and number and unweighted and weighted percentages of institutions providing enrollment lists, by control and level of institution: 2015–16**

Control and level of institution <sup>1</sup>	Sampled institutions	Eligible institutions	Institutions providing lists		
			Number	Unweighted percent	Weighted percent <sup>2</sup>
<b>Total</b>	<b>2,000</b>	<b>1,990</b>	<b>1,750</b>	<b>88.0</b>	<b>89.6</b>
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	‡	77.9
Public 2-year	380	380	330	88.0	88.5
Public 4-year, non-doctorate-granting, primarily subbaccalaureate	70	70	70	‡	95.3
Public 4-year, non-doctorate-granting, primarily baccalaureate	100	100	90	‡	89.7
Public 4-year, doctorate-granting	350	350	330	92.6	92.0
Private nonprofit less-than-2-year	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
Private for-profit 2-year	120	120	100	83.9	83.1
Private for-profit 4-year	280	280	240	85.5	92.2

‡ Reporting standards not met.

<sup>1</sup> Control and level of institution are based on data from the sampling frame, which was formed from the Integrated Postsecondary Education Data System 2014–15 Institutional Characteristics Header file.

<sup>2</sup> The weighted response rate was calculated using the NPSAS:16 institution base weight.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on the unrounded count of eligible institutions within the row under consideration. 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 at the sampled institutions between July 1, 2015 and

April 30, 2016. 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, master's, 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) code 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);<sup>8</sup>
- potential baccalaureate recipient indicator (for students who were expected to receive their bachelor's degree at the NPSAS institution by June 30, 2016);<sup>8</sup>
- 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 indicator (student owes fee that would prevent bachelor's degree award);
- race;
- ethnicity;
- sex;

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<sup>8</sup> Splitting baccalaureate receipt into two items is based on the NPSAS:16 field-test results. It simplified providing baccalaureate information for institutions that could not identify the potential baccalaureate recipients and helped with quality control checks against IPEDS counts for institutions that could not identify the potential baccalaureate recipients.

- first-time graduate student at the NPSAS institution indicator; and
- contact information (local and permanent street address and telephone 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)<sup>9</sup> 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,<sup>10</sup>
7. other undergraduate students;<sup>10</sup>
8. graduate students who are veterans;
9. first-time graduate students;
10. master's degree students in STEM<sup>9</sup> 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<sup>9</sup> 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.<sup>11</sup>

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

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<sup>9</sup> For more details on how STEM was defined, see Chen (2009).

<sup>10</sup> *Other undergraduate students* are defined as any undergraduate student not classified as a potential baccalaureate recipient.

<sup>11</sup> *Other graduate students* are those who are not enrolled in a degree program, such as students just taking graduate courses.

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 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 satisfied all NPSAS eligibility conditions had been received. For more detailed information regarding the institution and student sample designs, see chapter 2 of the NPSAS:16 data file documentation (Wine, Siegel, and Stollberg 2018).

### **2.2.3 NPSAS:16 Study Members**

The NPSAS:16 sampling procedures resulted in the selection of 122,030 students, of which 2,500 students were determined to be 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 least 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 control and level of institution.

**Table 5. Number of sampled and eligible NPSAS:16 students and number and unweighted and weighted percentages of NPSAS:16 study members, by control and level of institution: 2015–16**

Control and level of institution <sup>2</sup>	Sampled students	Eligible students <sup>3</sup>	NPSAS:16 study members <sup>1</sup>		
			Number	Unweighted percent	Weighted percent <sup>4</sup>
<b>Total</b>	<b>122,030</b>	<b>119,550</b>	<b>112,820</b>	<b>94.4</b>	<b>93.1</b>
Control of institution					
Public	58,370	56,850	52,720	92.7	92.4
Private nonprofit	25,510	25,170	24,310	96.6	95.4
Private for-profit	38,150	37,530	35,790	95.4	92.8
Level of institution					
Less-than-2-year	3,170	3,050	2,930	95.9	96.4
2-year	25,570	24,510	22,570	92.1	91.7
4-year, non-doctorate-granting	43,500	42,730	40,650	95.1	94.2
4-year, doctorate-granting	49,790	49,260	46,670	94.8	93.3
Control and level of institution					
Public less-than-2-year	400	370	360	97.0	97.5
Public 2-year	18,210	17,350	15,680	90.4	91.3
Public 4-year, non-doctorate-granting, primarily subbaccalaureate	5,850	5,610	5,160	92.1	91.8
Public 4-year, non-doctorate-granting, primarily baccalaureate	7,090	6,950	6,500	93.6	94.0
Public 4-year, doctorate-granting	26,830	26,570	25,010	94.2	93.2
Private nonprofit less-than-2-year	990	960	930	96.7	99.0
Private nonprofit 4-year, non-doctorate-granting	11,300	11,140	10,750	96.5	96.5
Private nonprofit 4-year, doctorate-granting	14,080	13,910	13,430	96.6	94.7
Private for-profit less-than-2-year	2,610	2,520	2,420	96.3	96.4
Private for-profit 2-year	6,540	6,360	6,110	96.0	96.7
Private for-profit 4-year	28,140	27,810	26,460	95.1	90.9

<sup>1</sup> A NPSAS:16 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.

<sup>2</sup> Control and level of institution are based on data from the sampling frame, which was formed from the Integrated Postsecondary Education Data System 2014–15 Institutional Characteristics Header file.

<sup>3</sup> Sample member eligibility was determined during the student survey or from student records in the absence of a student survey.

<sup>4</sup> The weighted response rate was calculated using the NPSAS:16 student base weight.

NOTE: Sample sizes rounded to the nearest 10. Percentages are based on the unrounded count of eligible students within the row under consideration. 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 Sampling Design

The third stage of sampling occurred for the selection of the B&B:16/17 sample. Identification of the cohort and the subsequent sampling are described 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 an expected 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 identified via these mechanisms. Table 6 shows the number and percentage distribution of the potential B&B:16 cohort, by eligibility source.

**Table 6. Number and percentage of the potential B&B:16 cohort sample members, by NPSAS:16 eligibility source: 2017**

Eligibility source	Number	Percent
<b>Total</b>	<b>33,700</b>	<b>100.0</b>
Expectation of bachelor's degree confirmed in survey	22,580	67.0
Listed as potential bachelor's degree recipient	11,120	33.0

NOTE: NPSAS:16 = 2015–16 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 used results from concordance analysis conducted with the B&B:16/17 field-test data to identify nonresponding sample members who were more likely to be eligible for the B&B study. The analysis included NPSAS:16 field-test student records provided by the sampled NPSAS institution, NSC data on degree completion, and NSLDS data on enrollment status and exit counseling. 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, 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, indicating a higher rate of ineligibility among the NPSAS:16 survey nonrespondents than among the NPSAS:16 survey respondents.

These results were the rationale for stratifying the potentially eligible baccalaureate recipients 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:16 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 non-study members (i.e., sample members lacking the information from the NPSAS:16 survey or administrative data to qualify them as NPSAS:16 study members). Stratum 1 was sampled with certainty, stratum 2 was subsampled at 50 percent, and stratum 3 was sampled with certainty.

**Stratum 1.** 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 95 percent of NPSAS:16 survey respondents were confirmed eligible for the B&B:16 cohort.

**Stratum 2.** NPSAS:16 student survey nonrespondents were further explicitly stratified for the B&B:16/17 sampling design by their “located in NPSAS” flag<sup>12</sup> (refer to section 3.2.3 for information about locating) and then implicitly stratified based on student records indicating degree completion, NSLDS data on enrollment status,<sup>13</sup> 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

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<sup>12</sup> Stratifying by the “located in NPSAS” flag allows for different data collection protocols that are dependent on whether a sample member has been located.

<sup>13</sup> Updated NSC data on degree completions were not available at the time of B&B:16/17 sampling.

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 by institution control associated with the B&B:16/17 sampling weight.

**Stratum 3.** NPSAS:16 non-study 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 sample members who were non-study 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 there was very little bias associated with this group as a whole; therefore, all NPSAS:16 non-study 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).<sup>14</sup>

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. Number and percentage of the B&B:16/17 sample, by NPSAS:16 study member and survey response status: 2017**

<b>NPSAS: 16 study member and survey response status</b>	<b>Number</b>	<b>Percent</b>
<b>Total</b>	<b>28,800</b>	<b>100.0</b>
NPSAS:16 non-study member <sup>1</sup>	1,350	4.7
NPSAS:16 study member	27,440	95.3
NPSAS:16 survey respondent	22,540	78.3
NPSAS:16 survey nonrespondent	4,910	17.0

<sup>1</sup> 2015–16 National Postsecondary Student Aid Study (NPSAS:16) non-study members were not fielded in B&B:16/17 and were categorized as B&B:16/17 nonrespondents.

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).

The questions associated with B&B:16/17 eligibility were asked again in either the B&B:16/17 survey or the eligibility screener because students may not have completed their baccalaureate requirements before completing the NPSAS:16 survey. NPSAS study members who were nonrespondents to the NPSAS:16 student survey (referred to as NPSAS:16 nonrespondents) and NPSAS:16

<sup>14</sup> By including non-study members in the sample, the weights or representation of these students can be redistributed to responding sample members.



non-study members began eligibility screening at the start of the data collection.<sup>15</sup> If they were deemed eligible with an affirmative answer 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-week) suspension of activities.<sup>16</sup> NPSAS:16 non-study members were excluded from student survey data collection irrespective of eligibility.<sup>17</sup> Ineligible NPSAS:16 non-study members were removed completely from the B&B:16 cohort.

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 reanalyzed. Specifically, B&B:16/17 staff were able to use 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, were used to confirm eligibility for students with a graduation date in the 2015–16 academic year. Finally, CPS data were 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 (1) they were still enrolled for a bachelor's degree at the NPSAS institution after June 30, 2016; (2) their latest enrollment status at the NPSAS institution was withdraw, deceased, or leave of absence; or (3) their bachelor's degree award 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 remained eligible.

The weighted response rate for the first follow-up (B&B:16/17) 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.<sup>18</sup>

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<sup>15</sup> For more information on the data collection schedule, see chapter 3.

<sup>16</sup> This break in activities enabled project staff to finalize eligibility status and prepare mailout materials before releasing these sample members into the main survey.

<sup>17</sup> Without data from NPSAS:16, crucial information is missing for these sample members to provide effective analytic utility.

<sup>18</sup> See section 6.1.1 in the *2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Data File Documentation* (Wine et al. 2019) for more information on the construction of the B&B:16/17 base weight.

**Table 8. Number of sampled and eligible B&B:16/17 sample members, number of respondents, and unweighted and weighted response rates, by institution control: 2017**

Institution control	Sampled students	Eligible students	Respondents		
			Number	Unweighted	Weighted <sup>1</sup>
<b>Total</b>	<b>28,800</b>	<b>26,540</b>	<b>19,490</b>	<b>73.4</b>	<b>70.5</b>
Public	11,960	10,890	7,760	71.3	70.2
Private nonprofit	8,490	7,900	5,920	74.9	71.9
Private for-profit	8,340	7,750	5,820	75.1	67.6

<sup>1</sup> The weighted response rate was calculated using the B&B:16/17 base weight.

NOTE: 2015–16 National Postsecondary Student Aid Study non-study 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).

## 2.4 Second Follow-up Sampling Design (B&B:16/20)

The fourth stage of sampling occurred for the selection of the B&B:16/20 sample. The B&B:16/20 sample consisted of all B&B:16/17 sample members (other than those determined to be ineligible or deceased during the B&B:16/17 data collection), totaling 26,510 individuals. During B&B:16/20 data collection, approximately 260 individuals were identified as ineligible or deceased. Therefore, the eligible sample for B&B:16/20 consists of 26,250 individuals. Of the eligible sample, 17,160 (65 percent) were considered B&B:16/20 respondents. Table 9 shows the sample size, the number of eligible sample members, and unweighted and weighted response rates, by institution control, for the second follow-up (B&B:16/20) using the B&B:16/20 base weight.<sup>19</sup>

**Table 9. Number of sampled and eligible B&B:16/20 sample members and unweighted and weighted response rates, by institution control: 2020**

Institution control	Sampled	Eligible	Response rate		
			Number	Unweighted	Weighted <sup>1</sup>
<b>Total</b>	<b>26,510</b>	<b>26,250</b>	<b>17,160</b>	<b>65.4</b>	<b>62.5</b>
Public	10,880	10,770	6,830	63.4	62.1
Private nonprofit	7,900	7,850	5,310	67.7	64.6
Private for-profit	7,740	7,630	5,010	65.8	55.9

<sup>1</sup> The weighted response rate was calculated using the B&B:16/20 base weight.

NOTE: 2015–16 National Postsecondary Student Aid Study non-study members were not fielded in B&B:16/20 and were categorized as B&B:16/20 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

<sup>19</sup> See section 6.1.1 for more information on the construction of the B&B:16/20 base weight.

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

The B&B:16/20 survey was designed to provide a complete update of enrollment and employment histories for respondents 4 years after their bachelor's degree completion date. To collect enrollment and employment histories between bachelor's degree completion and 4 years later, 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 4 years later. Start and end dates for employment and breaks in enrollment were collected to create a detailed snapshot of the first 4 years after respondents completed a bachelor's degree. The survey also collected information related to education debt and loan repayment and collected detailed information from teachers in the cohort. Additionally, in response to the COVID-19 pandemic, several items capturing respondent experiences due to related societal changes were added to the survey. This chapter provides an overview of the survey design process and systems, data collection and supporting systems, data collection outcomes, and survey evaluation.

## 3.1 Survey Design and Systems

The B&B:16/20 full-scale survey was designed to collect and update data elements such as postsecondary enrollment and employment information, as well as key demographic information for sample members. The survey was administered between July 2020 and March 2021 and included many items from prior B&B studies to allow for trend comparisons among cohorts. This section provides an overview of the B&B:16/20 full-scale survey design process and descriptions of data elements included in each key content area of the survey. An introduction to survey features and functionalities is also provided.

The B&B:16/20 full-scale survey was designed to collect data through 4 years after bachelor's degree completion for all respondents. Therefore, a reference time frame unique to each respondent was calculated in the survey based on when each

respondent completed their bachelor's degree and whether they responded to the B&B:16/17 full-scale survey. B&B:16/17 respondents, who provided information about the first year after degree completion in the B&B:16/17 full-scale survey, had a survey time frame that included years two through four after bachelor's degree completion, while B&B:16/17 nonrespondents' survey time frame was calculated from when they completed their bachelor's degree to 4 years after bachelor's degree completion.

The full-length B&B:16/20 full-scale survey was presented to sample members as a 35-minute survey. Later in the data collection period, an abbreviated survey, requiring about 15 minutes to complete, and a mini survey, requiring about 5 minutes, were offered to facilitate nonresponse conversion. The abbreviated and mini surveys each included a subset of B&B:16/20 survey questions. The abbreviated survey focused primarily on employment information and select background data elements, while the mini survey included high-level status indicators (e.g., enrolled in a degree or certificate program during the survey time frame) and select background information.

Data elements for the B&B:16/20 survey were designed to align with 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 in the survey. New data elements were identified and developed based on feedback from focus groups and usability testing and with content expert input. For a description of the development process and results of the pretesting methods, see appendix D.

Aspects of the B&B:16/20 full-scale survey were updated from the prior round to manage the burden on respondents being asked to provide 3 more years' worth of information. The B&B:16/17 survey used multiple nested looping sections in which a set of questions repeated multiple times to collect data on each degree at each institution, each job at each employer, etc. This B&B:16/17 design was intended to capture extensive month-level detail on enrollment, employment, and household expenses during the first year after graduation. To ensure continuity with data collected during the prior round without overburdening respondents, the B&B:16/20 survey was designed to capture complete enrollment and employment histories since either bachelor's degree completion or the last time we surveyed the respondent and a complete set of household items while reducing the level of detail collected on, for example, dates and job characteristics. Specifically, respondents were asked about just one job per employer at up to three employers; starting and ending enrollment and employment dates were collected, instead of

month-by-month, unless a break was indicated; starting and ending pay and hours worked for an employer were collected instead of all changes throughout a given employment span; and less relevant items for individuals a few more years into the workforce, such as whether a job was related to an undergraduate internship, co-op experience, or practicum, were dropped.

The survey consisted of six key content areas: eligibility, postbaccalaureate education and training, financial aid, postbaccalaureate employment, teaching, and background. For a complete list of data elements in each key area, see appendix E; for complete full-scale survey specifications, see appendix B. A brief overview of each area is provided below.

New data elements in the B&B:16/20 survey included information on breaks in education enrollment, private loan borrowing for abbreviated survey respondents, persistence in classroom teaching, and information on family structure as of age 16. Additionally, several items capturing how respondents' experiences were directly impacted by the COVID-19 pandemic were added to the survey.

**Eligibility** confirmed B&B:16 cohort eligibility for B&B:16/17 nonrespondents based on date of bachelor's degree completion and bachelor's degree-granting institution.

**Postbaccalaureate education and training** collected information on all institutions attended during the survey time frame, such as degree or certificate type, dates of enrollment and degree completion, breaks in enrollment, enrollment intensity, major or field of study and reasons for choice of major or field of study, online coursetaking (including whether courses were online due to the COVID-19 pandemic), and financial aid sources. Postbaccalaureate education questions also collected information on nondegree coursework enrollment, education aspirations, and type of graduate or professional exams taken.

**Financial aid** collected student loan types used for undergraduate and postbaccalaureate education, including federal student loans, private student loans, and other loans. Subsequent questions gathered federal and private student loan information, such as amount borrowed, repayment status, and monthly payment amount as well as whether the respondent received assistance from family or friends to pay back student loans.

**Postbaccalaureate employment** collected information on all work for pay during the survey time frame. This included paid internships, full-time and part-time employment, graduate assistantships, and self-employment. Those who had been employed at any time during the survey time frame were asked a series of

questions about each of their employers, including dates of employment, breaks in employment and whether those breaks were due to the COVID-19 pandemic, and starting and ending pay and hours worked. This section also asked respondents for additional details of up to three specific employers, including occupation, employer type, industry, employer-offered benefits, level of autonomy in the job and flexibility of the employer, whether a bachelor's degree was required for the given job, whether the job related to the respondent's bachelor's or postbaccalaureate major or field of study, whether a professional certification was required for the given job, whether the given job was considered part of a career path, reasons no longer at a job, and job satisfaction. Postbaccalaureate employment also collected information on job searches and activities while not working, salary and benefits negotiation, and whether a respondent received unemployment or disability compensation.

**Teaching** identified prekindergarten through 12th-grade (preK–12) teachers and asked about respondents' teaching experiences. Information on factors that influenced the choice to become a teacher, formal induction programs, preparedness for the respondent's first teaching job, and assistance received in the first teaching job was collected. Additionally, for those who had taught during the survey time frame, certification information and details about their most recent teaching position, including name of the school, number of months worked per year, grade(s) and subject(s) taught, school leadership information, and union participation, were collected. Former teachers were asked about their reasons for leaving teaching, and teachers who changed schools were asked about reasons for the move to a different school. This section also included questions about awareness of and participation in the Teacher Education Assistance for College and Higher Education (TEACH) Grant and loan forgiveness programs.

**Background** collected demographic characteristics, such as DOB, citizenship, native language, other known languages, sex, gender identity, sexual orientation, military status, and disability status. Additional data elements included the number of dependents; when respondents became financially responsible for each dependent; monthly expenses including those for child care, rent or mortgage payments, vehicle payments, and credit cards; annual income for calendar year 2019; and retirement account contributions. For respondents with a spouse or partner, information on the spouse's or partner's employment status, 2019 annual income, level of education, enrollment during the 2018–19 academic year, financial aid amount borrowed and owed, and monthly student loan payment amount were collected. Additionally, volunteer and voting activity, financial stress, financial literacy, the effects of the cost of education, and personal and professional effects of the COVID-19 pandemic were collected.

### **3.1.1 Survey Mode of Administration**

The B&B:16/20 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 full-scale survey, in the first follow-up B&B:16/17 full-scale survey, or in earlier sections of the B&B:16/20 survey. The survey instrument consisted of several forms, which are survey screens that typically contain 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 nonmobile and mobile respondents with the assistance normally provided by a trained telephone interviewer, including

- 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.

The instrument also included coder forms, which are custom forms in the survey linked to an underlying database of standardized responses to the question on the form. For more information on instrument coders included in the B&B:16/20 survey, see sections 3.1.2 and 3.5.1. Help text is provided at the form level and is written specifically for the question(s) on-screen. Section 3.5.2 provides an analysis of help-text usage in the survey. To reduce nonresponse on critical items (e.g., annual income, etc.), conversion text appeared when a respondent did not provide a response. The conversion text communicates the importance of the data element and encourages the respondent to reconsider providing a response. For additional information on conversion text, see section 3.5.3.

### **3.1.2 Survey Response Coding Systems**

The B&B:16/20 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: postbaccalaureate institutions attended during the survey time frame, major or field of study of postbaccalaureate

education, ZIP Code of employers, occupations, preK–12 schools where 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 drop-down menu.

See section 5.2 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 coders:

- The ***Postsecondary institution coder*** was linked to the complete set of institutions contained in the 2017 IPEDS, developed by NCES (<https://nces.ed.gov/ipeds>). 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 2020 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 telephone interviewers. Entered text strings were saved for any ZIP Codes not in the database.
- The ***Occupation coder*** linked respondents' occupation titles to version 24.0 of the Occupational Information Network (O\*NET) database (<https://onetonline.org>), which uses the 2018 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 the inclusion of preK



teachers in the B&B:16/20 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 deduplicated<sup>20</sup> 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 (ISO) 3166 Country Codes System ([https://www.iso.org/iso/home/standards/country\\_codes.htm](https://www.iso.org/iso/home/standards/country_codes.htm)). Entered text strings were saved for any countries not listed in the database.

### 3.1.3 Survey Design Systems and Data Collection Systems

The design of B&B:16/20 required the collection and management of personally identifiable information (PII) when tracing sample members and collecting data. These data were also managed during data processing and data product preparation activities. This section describes the study management systems used to securely collect, transmit, and process B&B:16/20 data.

On a nightly basis, B&B:16/20 staff downloaded student survey data from the NCES hosted database to RTI's Enhanced Security Network (ESN) via a secure web service, a process that meets the requirements for a Federal Information Processing Standards moderate system.<sup>21</sup> Once data were in the ESN, staff cleaned and performed quality analysis. The websites used for the B&B:16/20 data collection resided on NCES Secure Sockets Layer-certified (SSL) servers with a secure data connection. SSL protocols are used to encrypt data transmitted over the Internet, and all parts of the websites that collect student data are

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<sup>20</sup> The process of deduplicating 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, etc.) did not match, the program in question was researched to determine the correct data points. Incorrect or outdated 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.

<sup>21</sup> Federal Information Processing Standards (FIPS) are standards and guidelines for federal computer systems that are developed by the National Institute of Standards and Technology in accordance with the Federal Information Security Management Act and approved by the Secretary of Commerce. For more information about FIPS, see <https://csrc.nist.gov/publications/fips>.

password protected. The forms that gather data on these websites require session cookies to run in accordance with the U.S. Department of Education's privacy policy for the use of cookies.

Many RTI systems were used in B&B:16/20 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 an integrated management system (IMS), a survey development system, a control system, a CATI case management system (CMS), intensive tracing operations, and a quality evaluation system (QUEST).

**IMS.** The IMS is a project management tool designed to give B&B staff ready access to a repository of reports and other project information and deliverables. The IMS provides a web-based utility with which to track major components of the study, including receipt control, survey management and implementation, and case management. The IMS combines management reports, research materials, and archives and makes them accessible via a website protected by log-in/password security and SSL encryption. The IMS website, accessible to NCES and B&B:16/20 staff, serves as a repository for up-to-date information about study operations. The website houses the document archive, the directory of the data library, and daily reports generated from the receipt control and case management modules of the IMS. No PII is accessible from the IMS.

**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 by RTI to design and deploy multimode (web, CATI, field) survey instruments. All specifications of the survey instrument (e.g., question wording, response options, routing logic, validations) are implemented using the Hatteras system. Hatteras has been enhanced over the years to take advantage of mobile-first technology and the latest .NET and Model-View-Controller framework.

**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 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 interviewers. 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 CMS is an application used to reach the desired sample member via telephone so that an interview can be conducted or the interviewer can prompt the sample member to take the survey. The scripts within the system guide the interviewer to locate the correct sample member or collect new contact information so that the sample member can be reached. Within the CATI-CMS, interviewers could e-mail log-in 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 CMS. After every contact (or attempted contact) with a sample member, the status of the instrument is automatically updated in the CMS. Each sample member's data are stored in a "case," and the CMS maintains a history of the case. This history includes call counts, time stamps, event codes (i.e., what happened on a particular dial), and status codes that 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 telephone interviewers in CATI, and use various search methods to try to track down the case. The tracing supervisors managed the tracers' caseloads and reviewed cases as needed.

**QUEST.** RTI's monitoring interface, QUEST, was used to evaluate 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:16/20, 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
- access by project staff to interview recordings.

## 3.2 Survey Data Collection

The B&B:16/20 data collection infrastructure provided a study website and help desk for information and to provide support to sample members. Sample members could complete the survey independently on the Web or over the telephone with help from trained interviewers. Interviewers completed extensive training on interviewing processes and protocols, and staff were also trained on locating, tracing, and contacting procedures to ensure both efficiency and consistency in these areas.

### 3.2.1 Study Website and Help Desk

Communications with sample members included a link to the B&B:16/20 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, 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 before 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. Figure 1 shows a screenshot of the B&B:16/20 study website home page.

**Figure 1. Home page for B&B:16/20 study website: 2020**

Welcome to the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20)

Please enter your Study ID and password:

Study ID Password

Login [Show me what I typed.](#)

Need your Study ID number or password?

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

B&B:16/20 telephone interviewers 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 control system application, which was accessible via the CATI-CMS.

If technical difficulties prevented sample members from completing the web survey, interviewers were available to help sample members 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 link on the website allowed sample members to indicate they needed log-in information. After sample members entered a few pieces of identifying information, their study ID and password were automatically sent to them via e-mail.

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

The B&B:16/20 interview data collection team consisted of four roles: telephone interviewer, quality expert (QE), quality control supervisor (QCS), and intensive tracing staff, all of which are further described below. All data collection staff, regardless of role, completed a comprehensive training program before beginning work on the study (see appendix F for training agendas). Additionally, all data

collection staff completed a general training program on topics such as proper interviewing techniques, confidentiality procedures, and sample member rights.

In total, 35 telephone interviewers, QCSs, and QEs were trained over two training sessions between July and December of 2020. Additionally, nine tracers were trained for the project. Due to the COVID-19 pandemic, training sessions were modified to accommodate a virtual setting using Zoom videoconferencing software rather than in-person trainings conducted for previous B&B surveys. Electronic versions of training materials were provided for virtual trainings, with hard-copy training manuals available upon request.

The July training session was conducted over 2 nights and allocated equal time to direct instruction and hands-on practice. The December training session consisted of experienced NPSAS:20 staff and was held on one night, which was used to emphasize the differences between the two studies.

**Telephone interviewers.** Telephone interviewers acted as the primary point of contact for sample members, conducting telephone interviews and employing strategies to avert or convert refusals. Telephone interviewers also served as help desk agents to respond to sample member concerns, e-mail log-in instructions when needed, and address incentive receipt inquiries and issues. Telephone interviewers familiarized themselves with the survey instrument and received training specific to each interview question. They developed proficiency with the survey through mock interviews, hands-on practice with case management systems, and instruction on conversational interviewing techniques. Training materials included a telephone interviewer manual and associated materials addressing survey administration and conversational interviewing. Project staff certified telephone interviewers after they conducted a mock interview and provided appropriate and accurate responses to B&B:16/20 frequently asked questions. Biweekly Quality Circle (QC) meetings of QEs and telephone interviewers were held to review proper administration of the survey and to discuss topics related to the study or general interview protocol. Project staff asked trainees for feedback in identifying training needs or topics for future QC meetings.

**QEs.** QEs supervised telephone interviewers, performed general day-to-day monitoring responsibilities, and provided constructive feedback and coaching to interviewers after monitoring live or recorded interviews.

**QCSs.** QCSs supervised all staff, coordinating the monitoring of telephone interviewer performance and production, providing guidance to interviewers, and

troubleshooting problems as they arose. The QCSs also attended telephone interviewer trainings so they would be familiar with the interview and all aspects of its administration, allowing them to better identify any areas that needed improvement.

**Intensive tracing staff.** Intensive tracing staff completed a 16-hour program on general tracing procedures with an additional 2 hours of project-specific training, including the tracing techniques most appropriate for locating B&B:16/20 sample members.

### 3.2.3 Locating, Tracing, and Contacting Sample Members

To achieve a high rate of response, data collection staff implemented several procedures to identify sample members' updated contact information (i.e., tracing) and to confirm the contact information was accurate (i.e., locating). Before data collection, an e-mail and postcard were sent to sample members requesting that they provide up-to-date contact information. Batch tracing services were also used to update contact information. If cases did not have accurate telephone information, after telephone batch tracing was conducted, then intensive tracing was conducted.

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

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

**Batch tracing.** Also before data collection, known contact information for sample members was matched to the U.S. Postal Service (USPS) National Change of Address (NCOA) database, LexisNexis's Single Best Address search, and the

NSLDS. The NCOA database contains change-of-address records submitted to USPS over the last 4 years, and Single Best Address can search multiple data sources using progressive search logic to match to the most current address available. Matched records were compared with last-known addresses, and any new or updated addresses for sample members were loaded into the CATI-CMS.

To update telephone numbers, all cases were matched to PhoneAppend. When known telephone numbers were not helpful in locating sample members, their names, street addresses, and ZIP Codes were submitted to LexisNexis's Single Best Phone and/or Premium Phone telephone number lookup services.

**CATI locating.** If a sample member logged in to the survey via the Web, they were considered located. For cases not completed via the Web, telephone interviewers attempted to conduct an interview over the telephone. They called the number with the best likelihood of reaching the sample member, as determined by the CATI-CMS. If the interviewer could not reach the sample member at that number, the interviewer attempted to gather locating information from the contact who answered the call. If this approach was unsuccessful, the interviewer used other telephone numbers available for the sample member. Only when all telephone numbers proved inaccurate for the sample member was production tracing initiated.

**Production tracing.** If all telephone locating methods were exhausted and no other telephone number was available, further telephone tracing was initiated. As a first step before intensive tracing, survey staff sent cases through LexisNexis Single Best Phone and Premium Phone searches. If neither of these searches returned new telephone information, these cases were initiated to intensive tracing.

As part of intensive tracing, tracers used an approach that included public domain and proprietary databases to identify updated contact information. Tracers identified sample members in consumer databases (e.g., LexisNexis, Experian, and Accurint) using SSNs. If this search found an updated telephone number, tracers sent the case back to the CMS for interviewer follow-up. If the search resulted only in a new address, tracers used directory assistance searches to locate a telephone number. This approach minimized the effort required to locate cases through intensive tracing and the time that cases were unavailable to telephone interviewers.

**Data collection mailings, e-mails, and text messages.** 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, a study brochure, and a prepaid \$2 incentive in the form of a \$2 bill or an index card notifying the sample member that we had sent them a \$2 PayPal payment. 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 log-in 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, security concerns, and contact information. B&B:16/20 staff periodically sent sample members additional mailings, including postcards and letters, as reminders to complete the survey.

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

### **3.2.4 Survey Data Collection Phases and Contacting Methods**

Data collection for B&B:16/20 consisted of four phases: the early completion phase, production phase I, production phase II, and the nonresponse conversion 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 interviewer.

Data collection began on July 6, 2020, when letters and e-mails were sent inviting B&B:16/20 sample members to take the survey. The three data collection groups were defined as follows:

- Group 1: NPSAS:16 non-study members who had unconfirmed eligibility as well as NPSAS:16 and B&B:16/17 double nonrespondents<sup>22</sup> who had unconfirmed eligibility received only the eligibility screener and were not asked to participate in the study further;

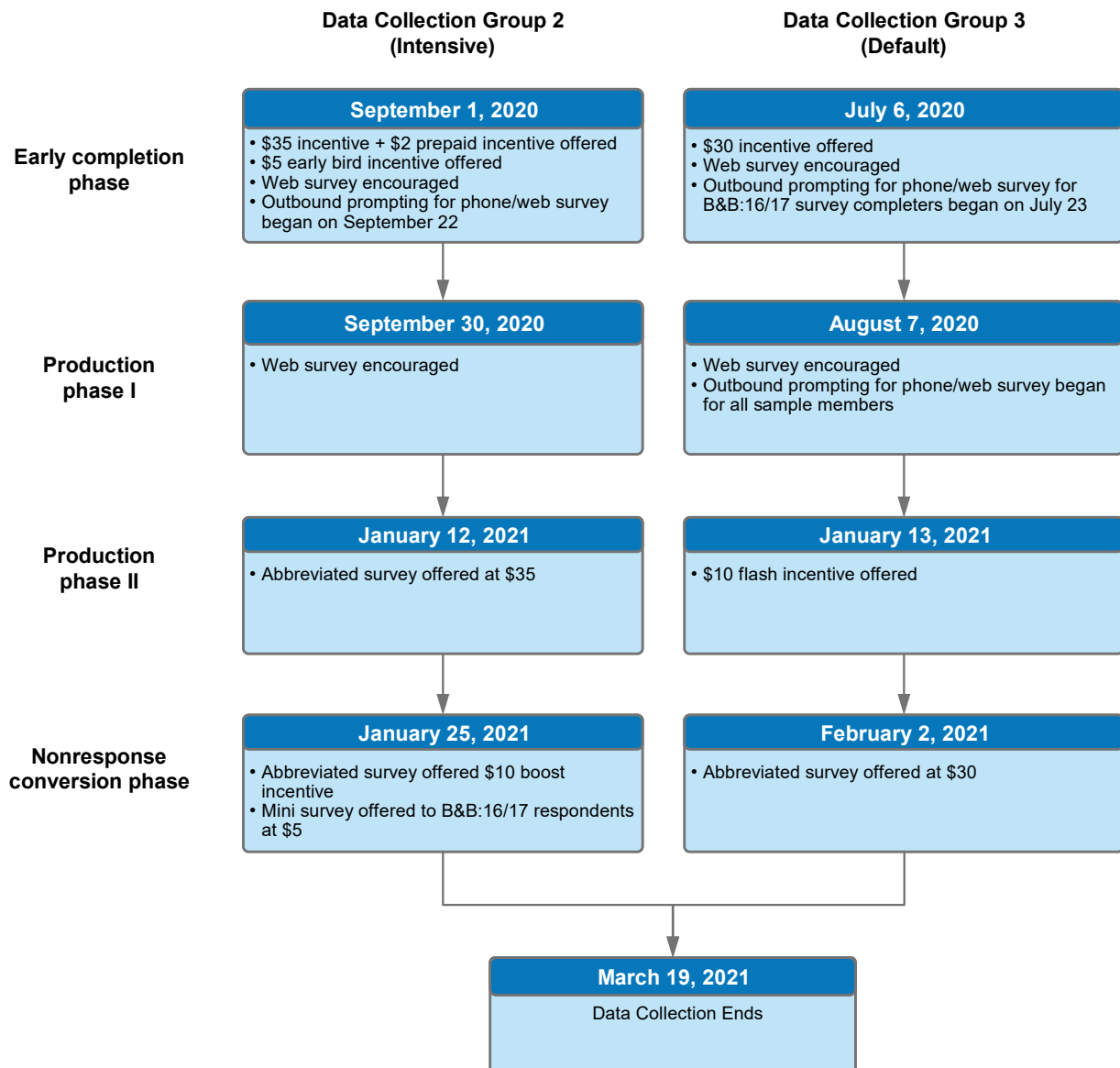
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<sup>22</sup> Double nonrespondents are sample members who did not participate in the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey.

- Group 2: NPSAS:16 nonrespondents, B&B:16/17 nonrespondents, and B&B:16/17 abbreviated survey respondents received the intensive protocol; and
- Group 3: NPSAS:16 full survey respondents and B&B:16/17 full survey respondents received the default protocol.

Figure 2 displays the activities conducted in each phase for Groups 2 and 3.

**Figure 2. Timeline of data collection activities for data collection Groups 2 and 3: 2020–2021**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Early completion phase.** Groups 1, 2, and 3 were included in the early completion phase, with differences in the level of participation requested and the incentives offered. Starting at the early completion phase and continuing through to the end of production phase I, Group 1 received invitations to complete the eligibility screener and was offered an incentive of \$5. For both Groups 2 and 3, the early completion phase included mailings, e-mails, and text messages encouraging sample members to complete the web survey, as well as the beginning of outbound calling efforts for all of Group 2 and for B&B:16/17 survey completers in Group 3. Group 2 was offered a \$2 prepaid incentive in addition to a base incentive of \$35. (See appendix H for a discussion of the calibration experiment conducted to determine the mode of delivery for the \$2 prepaid incentive.) Based on experimental results, sample members who were age 30 or above in Group 2 received a prepaid cash incentive by mail, while younger respondents received the same prepaid incentive via PayPal. Group 2 also received an “early bird” incentive of an additional \$5 if they completed the survey during the early completion phase. Group 3 was offered a \$30 base incentive.

**Production phase I.** During this phase, Groups 2 and 3 were encouraged to complete the full web survey either online or by telephone, and help desk staff were available to answer any questions. Outbound calling began for all sample members in Group 3.

**Production phase II.** This phase began in January 2021, and a 15-minute abbreviated survey was offered to Group 2 for a \$35 incentive. Group 3 was offered a “flash” incentive boost of \$10, which raised their total incentive offer to \$40 for a 2-week period.

**Nonresponse conversion phase.** This phase began in late January 2021 for Group 2 and early February for Group 3. Group 2 was offered a permanent incentive boost of \$10, for a total of \$45, to complete the abbreviated survey. Near the end of the data collection period, a 5-minute mini survey was offered to B&B:16/17 respondents in Group 2 for a \$5 incentive. For Group 3, the 15-minute abbreviated survey was offered for a \$30 incentive.

**Contacting methods.** 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, allowing them to begin the survey immediately without requiring them to enter their credentials. The web survey was available 24 hours a day, 7 days a week throughout the entire data collection. Although outbound telephone interviewing continued throughout the entire data

collection, the e-mail, letters, and text messages, which also continued throughout the entire data collection, encouraged sample members to complete the web survey, particularly during the early completion phase.

Once outbound calling began, interviewers attempted to locate sample members, answered questions about the study, gained sample members' cooperation, and conducted 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 survey log-in credentials to 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. Scheduled appointments were dates and times, or a window of time, suggested by sample members when previously contacted. 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 those most likely to reach the sample member. New numbers were added continuously based on telephone contacts and tracing efforts, as well as updates received through mailings, e-mails, or telephone calls to the help desk. The call scheduler reprioritized telephone numbers based on new information as it came in.

### 3.3 Survey Interviewing Quality Control

This section summarizes the survey interviewing quality control procedures employed throughout the course of data collection.

#### 3.3.1 Interview Monitoring

Project staff regularly monitored telephone interviews individually and in group meetings during B&B:16/20 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 such as active listening and probing; and
- assess the quality of the data collected.

As QEs monitored interviewer interactions with sample members, they recorded feedback on standardized forms that covered such topics as interviewer professionalism, question administration, conversational interviewing, and familiarity with the survey instrument. Interviewers received feedback from monitoring sessions, and QC meetings often incorporated issues identified during monitoring to improve the overall quality of telephone interviews.

### **3.3.2 Quality Circle Meetings**

QC meetings served as a tool for communication among project staff, call center staff, and telephone interviewers. Supervisors reinforced concepts from interview training sessions in biweekly QC meetings, reminding interviewers of proper administration of the survey and other topics as needed. Supervisors encouraged trainees to ask questions, which helped identify training topics for subsequent meetings. During B&B:16/20, some of the topics covered during QC meetings included

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

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

### 3.3.3 Debriefings

At the end of data collection, a debriefing was conducted with interviewing staff regarding their experiences during the study. Feedback was collected from interviewers and supervisory staff through an anonymous online survey and in-person meetings. Topics of the debriefing discussions included interviewer training, interviewer support and monitoring, systems for locating and contacting sample members, gaining sample member cooperation, and B&B:16/20 survey design and administration. Feedback from interviewers and supervisory staff will be used to inform the planning and implementation of future B&B studies.

With regard to training, interviewers appreciated “hands-on” training, which included practicing interviews. In response to feedback from prior studies, interviewers had more time to practice using the case management and contacting systems and the survey instrument during training. Based on their interactions with sample members, interviewers also emphasized the utility of reviewing refusal aversion strategies and the answers to frequently asked questions as strategies to gain cooperation from reluctant sample members. In particular, interviewers found that mentioning an incentive increase (when applicable) was often an effective conversion tool.

In addition, interviewers reported that the resources provided in the survey, such as help text and conversion text, were helpful in successfully administering the survey by telephone. They also reported that reviewing the timing of interventions during QC meetings and in QC notes was helpful to them so they could effectively tailor their introductions to sample members. Finally, interviewers provided feedback on how the flow of the abbreviated survey may be improved for future studies.

## 3.4 Survey Data Collection Outcomes

This section summarizes the results of the B&B:16/20 data collection in terms of the success rates and administrative burden of reaching and surveying sample members. All the analyses in this section are for fielded sample members only, which total 22,650. Sample members who were NPSAS:16 non-study members (i.e., sample members without enough information from the NPSAS survey and administrative collections to qualify them as NPSAS study members [ $n = 1,350$ ]) only received the eligibility screener and were not fielded. Sample members who failed to respond to both NPSAS:16 and B&B:16/17 ( $n = 2,610$ ), referred to as double nonrespondents, also received only the eligibility screener and were not fielded. The goal of this treatment was to identify ineligible sample members in

order to remove them from the nonrespondent category and move them to the ineligible category.

### 3.4.1 Locating Results

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

**Contact update results.** A total of 1,670 B&B:16/20 sample members (8 percent) responded to a request for updated contact information before the start of data collection. A total of 22,150 sample members were sent a request to update their contact information, as there were e-mails available for these sample members. Of those who provided updated contact information, 98 percent responded to the B&B:16/20 survey. Of those who did not provide updated contact information, 91 percent were successfully located through other efforts, and 69 percent responded to the B&B:16/20 survey.

**Batch tracing results.** Before data collection, known contact information was sent to several batch tracing sources (NCOA, PhoneAppend, Premium Phone, Single Best Phone, Single Best Address, and NSLDS) to obtain any updated mailing addresses or telephone numbers. Match rates varied by batch tracing source and are presented in table 10.

**Table 10. Number of cases sent and number and percentage matched to each batch tracing source: 2020**

Batch tracing source	Number of cases sent	Number of cases matched	Percent matched
National Change of Address	22,590	8,840	39.1
PhoneAppend	22,590	11,330	50.2
Premium Phone	1,140	350	30.9 <sup>1</sup>
Single Best Phone Search	1,160	940	80.8
Single Best Address Search	22,210	22,060	99.3
National Student Loan Data System	22,650	18,740	82.7

<sup>1</sup> For Premium Phone, match rate includes only instances when new information was provided.

NOTE: Table excludes 3,960 non-study members from the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) and double nonrespondents who were considered part of the eligible B&B:16/20 sample but were not fielded. Number of cases sent to each source varies based on the timing of the matching procedure, available information for matching, and the need for new contact information. Percent matched includes instances when a sample member’s contact information was confirmed or when new information was provided. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Intensive tracing results.** After exhausting all known telephone information and batch tracing services, 1.4 percent of cases required intensive tracing efforts once

CATI efforts began. The cases requiring intensive tracing by prior response status and data collection protocol group are shown in table 11.

**Table 11. Number and percentage of sample members who required intensive tracing, by data collection protocol group and prior response status: 2020**

Data collection protocol group <sup>2</sup> and prior response status	Total sample <sup>3</sup>	Required intensive tracing <sup>1</sup>	
		Number	Percent
<b>Total</b>	<b>22,650</b>	<b>330</b>	<b>1.4</b>
Intensive contacting group			
NPSAS:16 respondent only	3,160	180	5.6
B&B:16/17 full survey respondent only	730	10	‡
B&B:16/17 abbreviated or partial survey respondent	3,800	50	1.4
Default contacting group			
NPSAS:16 and B&B:16/17 full survey respondent	14,970	80	0.6

‡ Reporting standards not met.

<sup>1</sup> Cases requiring intensive tracing include 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.

<sup>2</sup> Data collection activities were determined by the sample member's assigned data collection protocol group. The intensive contacting group consisted of those who responded to either the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or who completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement. A sample member is considered a survey respondent if they completed the full, abbreviated, or mini B&B:16/20 survey. Partial survey completers were considered respondents if they completed the survey through the portion of the employment section where they reported all their employers.

<sup>3</sup> Includes fielded cases only.

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

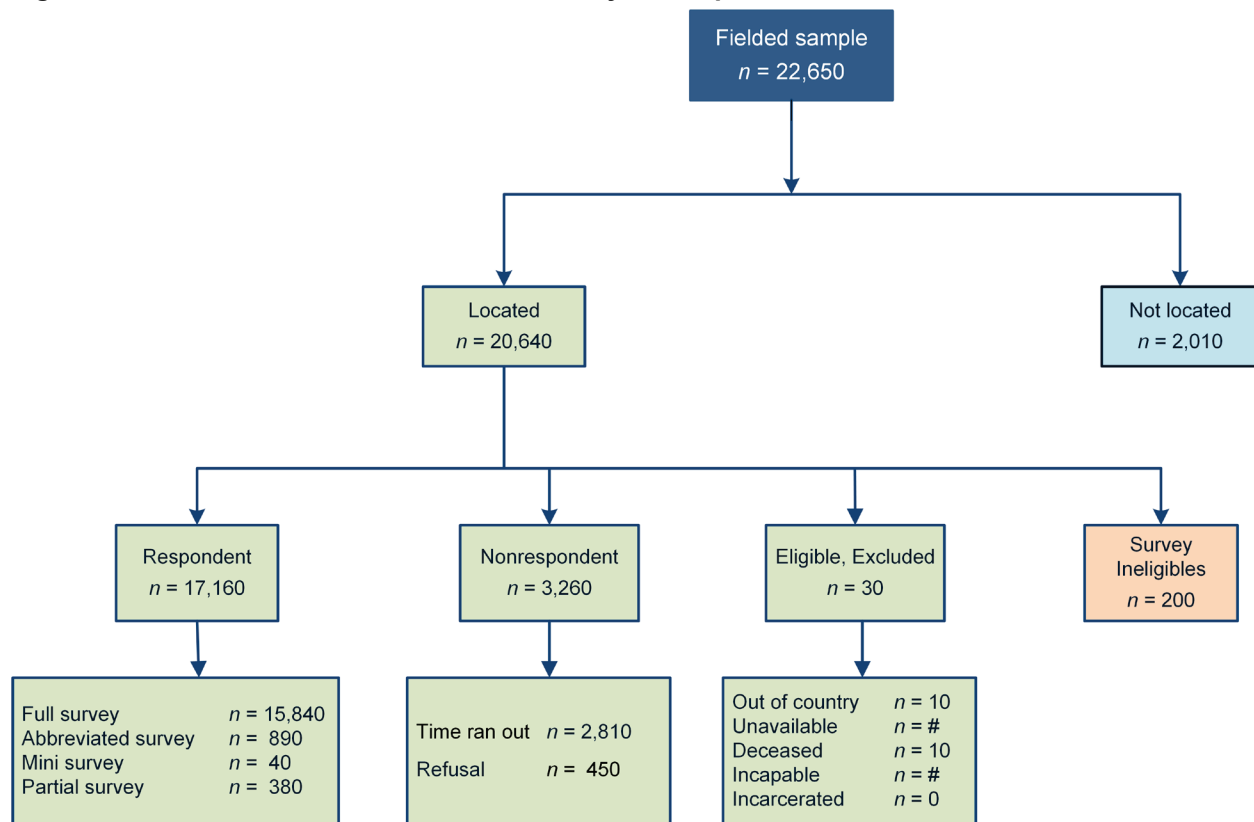
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### Number of sample members located, eligible, and survey respondents.

Overall, 91 percent of sample members were located at some point during B&B:16/20. The locate rate for sample members who only completed the NPSAS:16 survey was 73 percent, compared to 96 percent for sample members who completed the survey for both NPSAS:16 and B&B:16/17. Of the 20,640 sample members who were located, 17,160 completed the B&B:16/20 survey, 3,260 were nonrespondents, 200 were not eligible to complete the survey, and 30 were excluded for other reasons. Figure 3 displays the number of located, eligible, and surveyed sample members.



**Figure 3. Overall number of located and surveyed sample members: 2020**



# Rounds to zero.

NOTE: Figure excludes 3,960 non-study members from the 2015–16 National Postsecondary Student Aid Study and double nonrespondents who were considered part of the eligible B&B:16/20 sample but were not fielded. Because the figure only includes the fielded sample, and not those who received only the eligibility screener, the counts in the figure do not match the counts in section 2.4. “Unavailable” means the sample member was unavailable for the duration of the study. 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Of the 20,640 sample members who were located, 20,440 of them were eligible for B&B:16/20. The number and percentage of sample members who were located, were eligible, and were survey respondents, by data collection protocol group and prior response status are presented in table 12.

**Table 12. Number and percentages of sample members who were located, were eligible, and were survey respondents, by data collection protocol group and prior response status: 2020**

Data collection protocol group <sup>2</sup> and prior response status	Total sample <sup>3</sup>	Eligible sample	Located <sup>1</sup>		Located eligible		Survey respondent			
			Number	Percent of total	Number	Percent of eligible	Number	Percent of eligible	Percent of located	Percent of located eligible
<b>Total</b>	<b>22,650</b>	<b>22,450</b>	<b>20,640</b>	<b>91.1</b>	<b>20,440</b>	<b>91.0</b>	<b>17,160</b>	<b>76.4</b>	<b>83.1</b>	<b>83.9</b>
Intensive contacting group										
NPSAS:16 respondent only	3,160	2,960	2,320	73.4	2,120	71.6	840	28.4	36.2	39.7
B&B:16/17 full survey respondent only	730	730	640	87.7	640	87.7	490	68.1	77.7	77.7
B&B:16/17 abbreviated or partial survey respondent	3,800	3,800	3,360	88.4	3,360	88.4	2,600	68.4	77.4	77.4
Default contacting group										
NPSAS:16 and B&B:16/17 full survey respondent	14,970	14,970	14,330	95.7	14,330	95.7	13,220	88.3	92.3	92.3

<sup>1</sup> Sample members were considered located if they were ever located at some point during data collection.

<sup>2</sup> Data collection activities were determined by the sample member's assigned data collection protocol group. The intensive contacting group consisted of those who responded to either the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or who completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement. A sample member is considered a survey respondent if they completed the full, abbreviated, or mini survey. Partial survey completers were considered respondents if they completed the survey through the portion of the employment section where they reported all their employers.

<sup>3</sup> Includes fielded cases only.

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

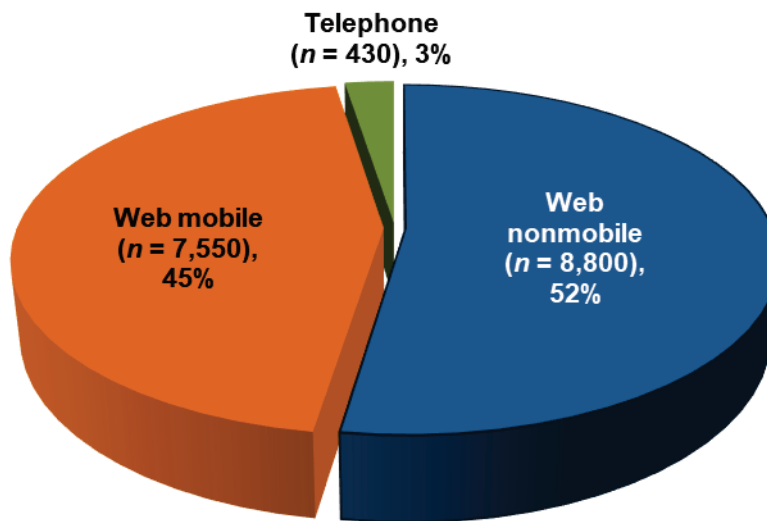
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 3.4.2 Survey Response Rates

**Completion by mode of administration.** Respondents completed the B&B:16/20 survey by web or by telephone. The majority of surveys (52 percent) were completed by web on a nonmobile device such as a desktop computer. Web completion on a mobile device<sup>23</sup> such as a tablet or smartphone accounted for 45 percent of completed surveys, while telephone interviews accounted for 3 percent of all completed surveys. Figure 4 displays survey completions by mode of administration.

<sup>23</sup> Two elements of instrument paradata distinguished web mobile mode: the rendering of the instrument (i.e., how the instrument displayed on a browser for a respondent) and parsing the browser agent string to obtain information about device type, browser, and touchscreen capability.

**Figure 4. Number and percentage of survey completions, by mode of administration: 2020**



NOTE: A B&B:16/20 respondent's mode of completion (web or telephone) is the mode associated with their final session. Web survey completers were analyzed separately by device type: nonmobile (e.g., desktop or laptop) or mobile (e.g., smartphone or tablet). A sample member is considered a B&B:16/20 respondent if they completed the full, abbreviated, or mini survey. Partial survey completers are considered respondents if they completed the survey through the portion of the employment section where they reported all their employers. This figure excludes the 380 partial survey 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Completion by prior response status and survey type.** Survey completion rates differed by prior response status. Seventy-four percent of NPSAS:16-only survey respondents completed a full survey, compared to 95 percent of NPSAS:16 and B&B:16/17 full survey respondents. Of B&B:16/17 abbreviated or partial survey respondents, 84 percent completed a full survey. These results are displayed in table 13.

**Table 13. Survey completion status of B&B:16/20 survey respondents, by prior response status and survey type: 2020**

Survey type of B&B:16/20 respondents	Total respondents	Prior response status							
		NPSAS:16 respondent only		B&B:16/17 full survey respondent only		B&B:16/17 abbreviated or partial survey respondent <sup>1</sup>		NPSAS:16 respondent and B&B:16/17 full survey respondent	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
<b>Total</b>	<b>17,160</b>	<b>840</b>	<b>100.0</b>	<b>490</b>	<b>100.0</b>	<b>2,690</b>	<b>100.0</b>	<b>13,130</b>	<b>100.0</b>
Full survey	15,840	630	74.3	420	85.4	2,240	83.3	12,550	95.6
Abbreviated survey	890	180	20.8	50	9.5	320	11.8	350	2.7
Mini survey	40	†	†	#	0.6	40	1.4	†	†
Partial survey <sup>1</sup>	380	40	4.9	20	4.5	90	3.5	230	1.7

† Not applicable.

# Rounds to zero.

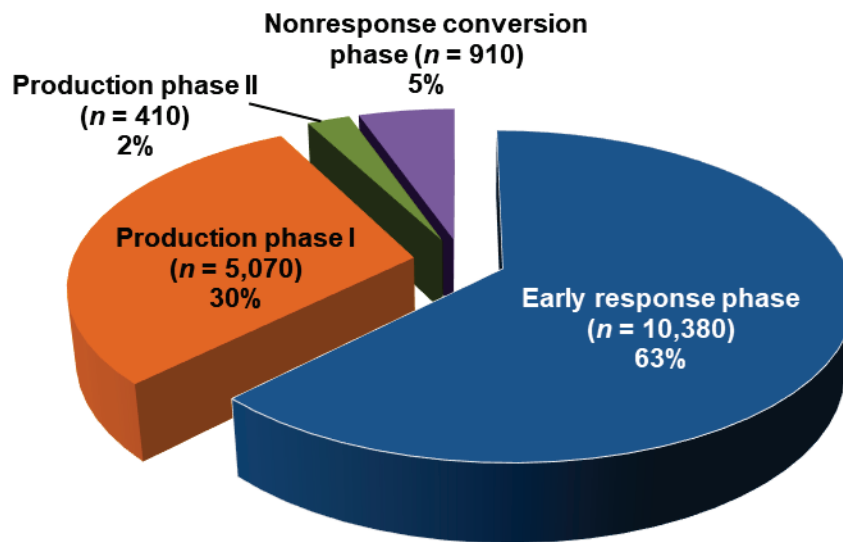
<sup>1</sup> The prior response category "B&B:16/17 abbreviated or partial survey respondent" includes both sample members who were NPSAS:16 respondents and nonrespondents. Partial survey completers are considered respondents if they completed the survey through the portion of the employment section where they reported all their employers.

NOTE: B&B:16/17 = 2016/17 Baccalaureate and Beyond Longitudinal Study; NPSAS:16 = 2015–16 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Completion by data collection phase.** The data collection design consisted of four operational phases: the early completion phase, production phase I, production phase II, and a nonresponse conversion phase. Of all completed surveys, 63 percent were completed during the early completion phase. Thirty percent were completed during production phase I, and 2 percent were completed during production phase II. Five percent were completed during the nonresponse conversion phase. The breakout of survey completions by data collection phase is presented in figure 5.

**Figure 5. Number and percentage of survey completions, by data collection phase: 2020**



NOTE: Survey completions include any B&B:16/20 sample member who completed the full, abbreviated, or mini survey. This figure excludes the 380 partial survey respondents because partially completed surveys could be resumed by sample members through the end of data collection. Partial survey completers are considered respondents if they completed the survey through the portion of the employment section where they reported all their employers. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 3.4.3 Survey Timing Burden

To assess the burden associated with completing the B&B:16/20 survey, project staff collected and analyzed the time required for each respondent to complete the full survey. Analyses include the average timing burden for respondents to complete the survey based on mode of completion, survey type, number of employers reported, and teacher type (e.g., compared to the first follow-up survey, whether they are new teachers, teachers who left the teaching field, or teachers who were still teaching). Findings were considered significant at the  $< .05$  level, though most findings were significant at the  $< .001$  level. Thus, all results reported in this section are significant at the  $p < .001$  level unless otherwise indicated.

To calculate the time required to complete the survey, the survey instrument tracked the elapsed time respondents took to complete each form, or web screen. The summed form-level timing values resulted in section times and total survey times. Respondents were able to complete the survey in multiple sessions. When beginning a new session to continue the survey, respondents began on the form they last saw in their prior session. Therefore, among cases that completed in multiple sessions, the timing for the last form the respondent saw before the break-off was not able to be measured. When this occurred, the break-off form

timing was imputed to the median time that other respondents spent on the same form.

Of the 17,160 full, abbreviated, and mini surveys that were completed, approximately 16,490 (96 percent) are included in the timing report (table 14). About 670 respondent surveys (4 percent) were excluded from the analyses; these cases include partial surveys not classified as final partial<sup>24</sup> surveys, respondents who completed in multiple sessions (i.e., surveys with more than two forms requiring mean time imputation),<sup>25</sup> and total time outliers.<sup>26</sup> Table 14 shows the number of cases included and excluded in the timing analyses.

**Table 14. Number and percentage of B&B:16/20 respondents, by inclusion in timing analysis and survey type: 2020**

Inclusion in timing analysis and survey type	Number of cases	Percent
<b>Total surveys (including partials)</b>	<b>17,160</b>	<b>100.0</b>
Completed surveys included in timing report	16,490	95.8
Full	15,560	90.7
Abbreviated	890	5.2
Mini	40	0.2
Surveys excluded from timing report	670	3.9
Partial surveys	380	2.2
Total time outliers <sup>1</sup>	280	1.6
Completed in multiple sessions <sup>2</sup>	#	#

# Rounds to zero.

<sup>1</sup> To detect outliers, the distribution of total survey times was first normalized using a Box-Cox power transformation (Box and Cox 1964). Then, respondents with transformed survey times that were greater than the 75th percentile value of the distribution plus 1.5 times the interquartile range or less than the 25th percentile value times 1.5 the interquartile range were omitted (Tukey 1977).

<sup>2</sup> Interviews completed in more than one session were included in the timing analysis when possible. Form timing is missing when the respondent is disconnected from a survey session, although some logouts do not result in disconnection from the database. Generally, if a respondent completed in more than two sessions, more than two forms would be missing timing information and thus excluded from analysis. 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

<sup>24</sup> A survey is considered a final partial survey if a sample member answered at least the portion of the employment section that collected all of their employers. Partial survey completers that do not meet this threshold are excluded from timing analyses.

<sup>25</sup> To avoid introducing excessive imputation and uncertainty into the timing analyses, cases that required more than two form imputations (i.e., more than two sessions) were excluded.

<sup>26</sup> To detect total time outliers, the distribution of all survey times (high right-skewed) was first normalized using a Box-Cox power transformation (Box and Cox 1964). This statistical method adjusts the values to make the distribution more similar to a normal distribution. Next, respondents with transformed survey times that were greater than the 75th percentile of the distribution plus 1.5 times the interquartile range or less than the 25th percentile times 1.5 times the interquartile range were omitted from all timing analyses (Tukey 1977). (The interquartile range equals the 75th percentile value of the distribution minus the 25th percentile value.).

### 3.4.3.1 Section and survey type timing

The B&B:16/20 full survey contained seven sections: (1) cohort eligibility, (2) postbaccalaureate education/training, (3) financial aid, (4) postbaccalaureate employment, (5) teaching, (6) background, and (7) locating and incentive information. Overall, the full survey took 31.8 minutes on average to complete. Table 15 shows survey completion times by mode of completion, survey type, and section.

Web nonmobile surveys took an average of 31.7 minutes to complete, which was similar in timing, though statistically significantly more time than web mobile surveys, which took 31.1 minutes to complete ( $p < .01$ ). Telephone interviews, which took an average of 55.1 minutes to complete, took significantly more time than web nonmobile surveys and web mobile surveys.<sup>27</sup> Telephone interviewers read survey questions aloud to respondents, therefore, surveys administered by telephone often yield longer completion times.

As a nonresponse conversion technique, sample members were invited to complete shortened versions of the survey: the abbreviated and mini surveys. The abbreviated survey, which included a subset of questions from each section of the full survey, took an average of 14.1 minutes to complete. Web nonmobile abbreviated surveys took an average of 12.5 minutes to complete, significantly less time to complete than abbreviated telephone interviews. Web mobile abbreviated surveys took an average of 12.9 minutes to complete, also significantly less average time than the 21.2 minutes it took to complete the abbreviated telephone interviews. There was no significant difference between web mobile and web nonmobile abbreviated survey completion times.

Additionally, near the end of data collection, sample members could complete a highly abbreviated “mini survey” comprising a small subset of survey items that collected high-level status information. The mini survey took an average of 4.2 minutes to complete. Telephone mini surveys took an average of 6.2 minutes to complete, which was significantly longer than the web nonmobile mini surveys and web mobile mini surveys, with average completion times of 3.4 minutes and 3.9 minutes, respectively. There was no significant difference between web mobile and web nonmobile mini survey completion times.

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<sup>27</sup> Results use Satterthwaite (1946) approximation in difference-of-means tests with unequal variances.

**Table 15. Number of B&B:16/20 respondents and mean time to complete in minutes, by mode of completion and survey type and section: 2020**

Survey type and section	Overall		Mode of completion					
			Web nonmobile		Web mobile		Telephone	
	Number of cases	Mean time	Number of cases	Mean time	Number of cases	Mean time	Number of cases	Mean time
Total full survey	15,560	31.8	8,340	31.7	6,960	31.1	260	55.1
Eligibility	15,560	0.3	8,340	0.3	6,960	0.3	260	0.6
Postbaccalaureate education	15,560	2.6	8,340	2.7	6,960	2.4	260	4.0
Financial aid	15,560	1.3	8,340	1.3	6,960	1.3	260	2.2
Postbaccalaureate employment	15,560	12.8	8,340	11.0	6,960	10.9	260	19.2
Teaching	15,560	1.3	8,340	1.3	6,960	1.3	260	2.4
Background	15,560	9.2	8,340	9.1	6,960	9.0	260	16.7
Locating and incentive information	15,560	3.7	8,340	3.6	6,960	3.7	260	6.8
Total abbreviated survey	890	14.1	330	12.5	410	12.9	150	21.2
Total mini survey	40	4.2	10	3.4	20	3.9	10	6.2

NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Respondents who completed the survey in multiple sessions, total time outliers, and respondents who did not complete the entire survey (partial surveys) 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### *Postbaccalaureate employment section*

The B&B:16/20 full survey was designed to collect employment data within a specific survey time frame (i.e., up to 4 years of employment history). B&B:16/20 respondents who also responded to the B&B:16/17 survey were asked to provide employment information for all employers since B&B:16/17, so between 1 and 4 years after bachelor's degree completion (i.e., 3 years of employment). B&B:16/17 nonrespondents were asked to provide information about all employers between bachelor's degree completion and 4 years after bachelor's degree completion (i.e., 4 years of employment). B&B:16/20 survey respondents who reported employer information were then asked to provide detailed job information for up to three employers and information about any periods of 4 or more months when they were not working between periods of employment. Each set of questions (i.e., employment information, job details, and periods when not working) were administered in a looping format where the same data elements were collected multiple times, once for each employer, job (up to three), and periods of not working. Thus, each additional employer, job, and period of not working increased the overall number of questions a respondent was asked.

Overall, the postbaccalaureate employment section was the longest of all sections to complete (as presented in table 15), taking 12.8 minutes on average. The section took an average of 19.2 minutes over the telephone, which was significantly more time than web nonmobile surveys, with an average of



11 minutes to complete the section. Telephone interviews were also significantly longer than web mobile surveys, which took an average of 10.9 minutes. There was no significant difference between web nonmobile and web mobile mode section completion times.

Table 16 describes the average completion time of the postbaccalaureate employment section by mode of completion and number of employers. A respondent’s employment history during the survey time frame impacted the burden associated with completing the section. Respondents reported an average of two employers during the survey time frame. Each employer—thus an additional employer loop in the survey—resulted in a significant increase in the overall survey completion time for respondents. To illustrate, reporting two employers (14.5 minutes) took significantly longer than reporting one employer (9.2 minutes). Reporting three employers (19 minutes) took significantly longer than reporting two employers, and reporting four or more employers (23.7 minutes) took significantly longer than reporting three employers.

**Table 16. Number of B&B:16/20 respondents and mean time to complete the postbaccalaureate employment section in minutes, by mode of completion and number of employers: 2020**

Number of employers <sup>1</sup>	Overall		Mode of completion					
			Web nonmobile		Web mobile		Telephone	
	Number of cases	Mean time	Number of cases	Mean time	Number of cases	Mean time	Number of cases	Mean time
<b>Total</b>	<b>15,560</b>	<b>12.8</b>	<b>8,340</b>	<b>12.7</b>	<b>6,960</b>	<b>12.5</b>	<b>260</b>	<b>22.3</b>
None	620	1.9	330	1.9	280	1.8	10	4.4
One	7,010	9.2	3,590	9.1	3,300	9.1	120	14.6
Two	4,930	14.5	2,640	14.1	2,210	14.7	80	26.0
Three	1,990	19.0	1,140	18.4	820	19.3	30	34.8
Four or more	1,010	23.7	640	22.7	350	24.4	20	42.2

<sup>1</sup> Number of employers includes only those during the B&B:16/20 survey time frame.

NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Respondents who completed the survey in multiple sessions, total time outliers, and respondents who did not complete the entire survey (partial surveys) 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Teaching section**

B&B:16/20 respondents were classified into four teacher status groups based on information they provided in prior rounds and their responses to earlier questions in the B&B:16/20 survey to classify whether the respondent ever taught as a preK–12 regular classroom teacher, and their trajectory into teaching. The four preK–12 teacher status groups follow:

- *New teachers* did not report preK–12 classroom teaching in the B&B:16/17 survey but did report working as a preK–12 regular classroom teacher during the B&B:16/20 survey time frame.
- *Stayers* reported working as a regular classroom teacher at the preK–12 level in the B&B:16/17 survey and indicated they were still teaching at the preK–12 level during the B&B:16/20 survey time frame.
- *Leavers* reported regular classroom teaching at the preK–12 level in the B&B:16/17 survey but did not report working as a preK–12 regular classroom teacher during the B&B:16/20 survey time frame.
- *Nonteachers* did not report working as a preK–12 regular classroom teacher in either the B&B:16/17 survey or the B&B:16/20 survey.

A respondent's preK–12 teaching status determined the routing through the teaching section of the survey, and all preK–12 teachers received survey questions that collected information according to their preK–12 teaching status (e.g., stayers received questions about reasons they remained in the teaching profession, while leavers were asked about reasons for leaving teaching). Nonteachers received only a small selection of questions about any preparation for or consideration of the teaching field. Table 17 shows the average time to complete the teaching section by mode of completion and preK–12 teacher status.

Overall, including teachers and nonteachers, the teaching section took 1.3 minutes, on average, to complete. For both web nonmobile and web mobile survey respondents, it took an average of 1.3 minutes to complete the teaching section. Telephone interviews, which took an average of 2.4 minutes to complete the section, were significantly longer than web nonmobile surveys and web mobile surveys. There was no significant difference between web nonmobile and web mobile mode section completion times.

Teachers took an average of 5.2 minutes to complete the teaching section of the full survey, significantly longer than nonteachers, who took less than 1 minute to answer the teaching gate questions. New preK–12 teachers, who took 5.9 minutes to complete the teaching section, took significantly longer than both stayers, who took 4.5 minutes to complete the section, and leavers, who took 1.5 minutes to complete the section. Stayers also took significantly longer than leavers to complete the section.

**Table 17. Number of B&B:16/20 respondents to the full survey and mean time to complete the teaching section in minutes, by mode of completion and preK–12 teacher status: 2020**

PreK–12 teacher status <sup>1</sup>	Overall		Mode of completion					
			Web nonmobile		Web mobile		Telephone	
	Number of cases	Mean time	Number of cases	Mean time	Number of cases	Mean time	Number of cases	Mean time
<b>Total full completed interviews</b>	<b>15,560</b>	<b>1.3</b>	<b>8,340</b>	<b>1.3</b>	<b>6,960</b>	<b>1.3</b>	<b>260</b>	<b>2.4</b>
All teachers	1,790	5.2	880	5.3	880	5.0	20	8.8
New	1,060	5.9	510	6.1	530	5.7	20	8.8
Stayers	630	4.5	320	4.5	300	4.4	10	9.4
Leavers	100	1.5	50	1.7	50	1.2	#	3.4
Nonteachers	13,770	0.8	7,460	0.8	6,080	0.7	240	1.0

# Rounds to zero.

<sup>1</sup> “New” teachers reported prekindergarten through 12th grade (preK–12) teaching for the first time in the B&B:16/20 survey and had not reported preK–12 teaching in a prior-round survey. “Stayers” indicated they were still employed as preK–12 teachers at the time of the B&B:16/20 survey and had reported preK–12 teaching in a prior-round survey. “Leavers” had reported preK–12 teaching in a prior-round survey but reported they were not employed as preK–12 teachers at the time of the B&B:16/20 survey. “Nonteachers” never reported preK–12 teaching in prior-round surveys and did not indicate preK–12 teaching in the B&B:16/20 survey.

NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Respondents who completed the survey in multiple sessions, total time outliers, and respondents who did not complete the entire survey (partial surveys) 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### ***Form timing***

Project staff also analyzed the average time to administer each individual form within the survey—excluding the front end, locating, and incentives forms. The forms with the longest administration times, by form type, are listed in descending average time in table 18, along with the mean and median timing for each form. All coder forms in the survey are listed first, followed by the 10 noncoder forms with the highest average times.

As described below, coder forms, which provide standardized response options based on open-ended responses, represent some of the longest form times, overall, in the survey. This is expected given the more involved predictive text search functionality of coder forms. For this reason, coders are analyzed separately from noncoder forms in the form-level timing analysis.

The *Occupation* coder (BB20DOCCEX01) had the longest average form time at 90.4 seconds. This form asked B&B:16/20 respondents to provide and code occupations for up to three employers using the Occupational Information Network (O\*NET)-SOC, version 24.0. The second longest coder in the survey was *Postbaccalaureate degree 1: primary major or field of study* (BB20CPTMAJ01) with an average administration time of 48.5 seconds. This form asked respondents to provide and code their major or field of study for up to four postbaccalaureate degree or certificate programs using an underlying

database of the 2020 CIP codes. The shortest coder in the survey was *Country of origin* (BB20FORIGIN) with an average administration time of 9.7 seconds. This form asked respondents who were not born in the United States to provide and code the country in which they were born using the ISO 3166 country codes system.

The noncoder forms that took the longest time to answer represent some of the most cognitively burdensome questions in the survey. These forms relied on respondents' recall of detailed information that may have taken place months or years before completing the survey. In addition to high cognitive burden, 9 of the 10 longest noncoder forms displayed multiple items on the same form, thus increasing the usability complexity. *Level of job satisfaction* (BB20DJSAT01), the noncoder form with the highest timing burden, took respondents an average of 63.5 seconds to answer the full set of job satisfaction items in a grid with scaled response options for each item. *Reasons no longer employed by [employer]* (BB20DCHNG01), also a form with several items in a grid with yes/no response options for each item, was also among the 10 longest noncoder forms, taking 44.5 seconds on average.

It took an average of 57.7 seconds to report *Starting hours and salary* (BB20DEMPLOYA01) and 41.1 seconds, on average, to report *Most recent/ending hours and salary* (BB20DEMPLOYC01), using a combination of text boxes and radio buttons on both. *Months employed* (BB20DWKMON01) and *Months enrolled* (BB20CENMON01) took an average of 49 seconds and 45.1 seconds, respectively, for respondents to select all the months in which they were employed at an employer or enrolled for a degree or certificate on a custom calendar form. *Total borrowed in student loans during survey time frame* (BB20CLOANAMT) displayed a text box and a checkbox and took 42.4 seconds, on average, to answer. Finally, *Start date* (BB20DSTART01) and *End date* (BB20DEND01) at an employer took an average of 36 seconds and 35.7 seconds, respectively, to select a month and year from separate drop-down lists. *Job duties* (BB20DJBDUTY01), the only form among the 10 longest noncoder forms with only one item displayed, asked respondents to provide a free response in a larger text box, which took 39.2 seconds on average.

**Table 18. Mean and median completion times in seconds for forms with the highest average completion time, by form type and form: 2020**

Form type and form	Form description	Type	Number of cases	Mean time (seconds)	Median time (seconds)
<b>Coder</b>					
BB20DOCCEX01	Job 1: occupation <sup>1</sup>	Coder	15,510	90.4	55.7
BB20CPTMAJ01	Postbaccalaureate degree 1: primary major or field of study <sup>1</sup>	Coder	5,330	48.5	28.4
BB20DEMPZIP01	Employer 1: ZIP Code for primary work location <sup>1</sup>	Coder	15,760	45.1	29.1
BB20EJBSL	Teaching job: school name	Coder	1,690	38.4	20.3
BB20ESCHNAM01	Teacher mobility loop: school name <sup>1</sup>	Coder	460	37.7	18.2
BB20CSCHPT01	Postbaccalaureate degree 1: institution name <sup>1</sup>	Coder	4,750	32.6	18.3
BB20FORIGIN	Country of origin	Coder	400	9.7	8.1
<b>Noncoder</b>					
BB20DJSAT01	Job 1: level of satisfaction <sup>1</sup>	Grid	14,690	63.5	50.1
BB20DEMPLOYA01	Employer 1: starting hours and salary <sup>1</sup>	Text box/Radio button	15,640	57.7	38.6
BB20DWKMON01	Employer 1: months employed <sup>1</sup>	Calendar form	3,070	49.0	33.4
BB20CENMON01	Postbaccalaureate degree 1: months enrolled <sup>1</sup>	Calendar form	640	45.1	28.6
BB20DCHNG01	Job 1: reason no longer employed by [employer] <sup>1</sup>	Grid	7,210	44.5	34.9
BB20CLOANAMT	Total borrowed in student loans during survey time frame	Text box/Checkbox	3,020	42.4	24.2
BB20DEMPLOYC01	Employer 1: most recent/ending hours and salary <sup>1</sup>	Text box/Radio button	15,660	41.1	258.3
BB20DJB-duty01	Job 1: job duties <sup>1</sup>	Text box	2,890	39.2	26.1
BB20DSTART01	Employer 1: start date <sup>1</sup>	Drop-down	15,760	36.0	22.3
BB20DEND01	Employer 1: end date <sup>1</sup>	Drop-down/Checkbox	15,730	35.7	23.4

<sup>1</sup> This form may be administered multiple times to each respondent, so each respondent's time value is the average of all administrations. That is the number of seconds to complete all iterations of the form divided by the number of iterations.  
 NOTE: Analysis includes only completed cases that have two or fewer forms of imputed timing data. Respondents who completed the survey in multiple sessions, total time outliers, and respondents who did not complete the entire survey (partial surveys) were excluded. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 3.4.4 Telephone Interviewer Hours

Throughout B&B:16/20 data collection, interviewers logged roughly 4,930 hours. In addition to administering the interview, they also spent time on case management activities, including locating and contacting sample members, prompting sample members to complete interviews, reviewing case events, scheduling appointments for callbacks, recording events in the CMS, and responding to incoming calls to the help desk.

### 3.4.5 Number of Calls to Sample Members

On average, interviewers made 3.5 calls per sample member during the data collection period. Average call counts for completed cases varied by survey completion mode. Respondents who completed an interview by telephone required 5.2 calls on average, compared to 4.8 calls on average to respondents who completed the survey by web with telephone prompting ( $p < .05$ ).

Additionally, whether sample members participated in prior survey rounds (NPSAS:16 and/or B&B:16/17) was predictive of how many calls were needed before they completed the survey. Respondents who only completed the NPSAS:16 survey required more calls, on average, than respondents who only completed the B&B:16/17 survey (8.7 and 5 calls, respectively [ $p < .001$ ]).

Table 19 displays the average number of calls made, by response status and mode of completion, data collection protocol group, and prior response status.

**Table 19. Total and average number of calls, by response status and mode of completion, data collection protocol group, and prior response status: 2020**

Response status and mode of completion, data collection protocol group, <sup>1</sup> and prior response status	Eligible sample <sup>2</sup>	Total number of calls	Average number of calls per case
<b>Total</b>	<b>22,450</b>	<b>77,490</b>	<b>3.5</b>
Respondents	17,160	17,750	1.0
Web survey	16,710	15,440	0.9
Web survey, with telephone calls	3,210	15,440	4.8
Telephone survey	450	2,310	5.2
Nonrespondents and exclusions <sup>3</sup>	5,300	59,750	11.3
Intensive contacting group			
NPSAS:16 respondent only	2,960	25,820	8.7
B&B:16/17 full survey respondent only	730	3,650	5.0
B&B:16/17 abbreviated or partial survey respondent	3,800	19,870	5.2
Default contacting group			
NPSAS:16 and B&B:16/17 full survey respondent	14,970	28,150	1.9

<sup>1</sup> Data collection activities were determined by the sample member's assigned data collection protocol group. The intensive contacting group consisted of those who responded to either the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or who completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement.

<sup>2</sup> Includes fielded cases only.

<sup>3</sup> Exclusions are sample members who were out of the country, unavailable for the duration of study, deceased, institutionalized, incarcerated, or incapacitated.

NOTE: A sample member is considered a B&B:16/20 survey respondent if they completed the full, abbreviated, or mini survey or if they completed the survey through the portion of the employment section where they reported all their employers. Sample sizes rounded to the nearest 10. Detail may not sum to totals because of rounding. Averages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 3.4.6 Refusal Conversion

For the purposes of data collection, a “refusal” occurred when a sample member refused to participate or when someone else refused on a sample member’s behalf (i.e., a “gatekeeper”). B&B:16/20 staff integrated refusal conversion techniques into interviewer training and reinforced these strategies throughout data collection in QC 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 only called by a subset of interviewers who were trained in specialized refusal conversion techniques. Overall, 4 percent of eligible sample members refused or had someone refuse on their behalf; 13 percent of them subsequently completed the survey.

For sample members who only completed the NPSAS:16 survey, 12 percent were refusals in B&B:16/20; 4.2 percent of them subsequently completed the survey. For sample members who only completed the B&B:16/17 full survey, 5.5 percent were refusals in B&B:16/20; 22.5 percent subsequently completed the survey. For sample members who completed both the NPSAS:16 and B&B:16/17 full surveys, 2.2 percent were refusals; 21.7 percent subsequently completed the survey. Table 20 shows the refusal and refusal conversion rates by prior response status and data collection protocol group.

**Table 20. Ever any refusal and surveyed after refusal rates, by data collection protocol group and prior response status: 2020**

Data collection protocol group <sup>2</sup> and prior response status	Eligible sample <sup>3</sup>	Ever any refusal <sup>1</sup>		Surveyed after refusal		
		Number	Percent of eligible	Number	Percent of refusals	Percent of eligible
<b>Total</b>	<b>22,450</b>	<b>910</b>	<b>4.1</b>	<b>120</b>	<b>13.2</b>	<b>0.5</b>
Intensive contacting group						
NPSAS:16 respondent only	2,960	360	12.0	20	4.2	0.5
B&B:16/17 full survey respondent only	730	40	5.5	10	22.5	1.2
B&B:16/17 abbreviated or partial survey respondent	3,800	190	5.0	30	13.6	0.7
Default contacting group						
NPSAS:16 and B&B:16/17 full survey respondent	14,970	330	2.2	70	21.7	0.5

<sup>1</sup> “Ever any refusal” includes sample members who ever refused or had a gatekeeper (parent or other contact) refuse on their behalf.

<sup>2</sup> Data collection activities were determined by the sample member’s assigned data collection protocol group. The intensive contacting group consisted of those who responded to either the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement.

<sup>3</sup> Includes fielded cases only.

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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 3.4.7 Responsive Design

As discussed in section 3.2.4, the B&B:16/20 data collection used different data collection protocols, intensive and default, based on the success of these protocols in previous studies including B&B:16/17.

To summarize, the three data collection groups were defined as follows:

- Group 1: NPSAS:16 non-study members and NPSAS:16 and B&B:16/17 double nonrespondents, who had unconfirmed eligibility, received only the eligibility screener;
- Group 2: NPSAS:16 nonrespondents, B&B:16/17 nonrespondents, and B&B:16/17 abbreviated survey respondents received the intensive protocol; and
- Group 3: NPSAS:16 and B&B:16/17 full survey respondents received the default protocol.

Each full-scale data collection group received a targeted data collection protocol that varied in intensity to increase response rates and decrease the potential for nonresponse bias. Specifically, the treatments included (1) an offer of an eligibility screener incentive; (2) an offer of an early-bird incentive; (3) mode tailoring, that is, contacting sample members in their B&B:16/17 completion mode; (4) telephone prompting; (5) the incentive boost with the “flash” incentive; (6) the abbreviated survey; (7) the permanent incentive boost; and (8) the mini survey. Both Groups 2 and 3 received an initial e-mail, text, and letter, and reminder e-mails, texts, and postcards to complete the survey throughout data collection. An overview of the differences in the data collection protocol is shown in table 21.



**Table 21. Data collection group assignments, by protocol and data collection phase: 2020**

	<b>Group 1 (Eligibility screener)</b>	<b>Group 2 (Intensive protocol)</b>	<b>Group 3 (Default protocol)</b>
<b>Data collection phase</b>	NPSAS:16 non-study members ( <i>n</i> = 1,350) and double nonrespondents ( <i>n</i> = 2,610) <sup>1</sup>	Ever nonrespondents and B&B:16/17 abbreviated survey respondents ( <i>n</i> = 7,690)	Double respondents ( <i>n</i> = 14,970) <sup>2</sup>
<b>Early completion phase</b>	Screener mail, e-mail, and text invitation to complete screener	Data collection announcement mail, text, and e-mail offered \$2 prepaid incentive and additional \$5 "early-bird" incentive in addition to base incentive of \$35	Data collection announcement mail, text, and e-mail offered \$30 base incentive
	Mail, e-mail, and text message reminders to complete screener	Outbound calling started 2 weeks after mail outs and continued through all phases	Tailoring began with survey being offered in the mode the sample member completed the B&B:16/17 survey
<b>Production phase I</b>	Mail, e-mail, and text message reminders to complete screener	Postcard, e-mail, and text message reminders continued through all phases	Outbound calling began and continued through all phases Postcard, e-mail, and text message reminders continued through all phases
<b>Production phase II</b>	†	Abbreviated survey offered at \$35	\$10 flash incentive offered
<b>Nonresponse conversion phase</b>	†	Incentive boost—\$10 incentive boost offered Mini survey for \$5 incentive offered (for B&B:16/17 respondents only toward the end of data collection)	Abbreviated survey offered at \$30

† Not applicable.

<sup>1</sup> Double nonrespondents are sample members who did not participate in the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey.

<sup>2</sup> Double respondents are sample members who participated in both NPSAS:16 and B&B:16/17.

NOTE: Sample sizes correspond to assignment before data collection. Sample sizes rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Table 22 displays the final response rates for all eligible fielded cases at the conclusion of each data collection phase. Despite the increased data collection efforts for the intensive contacting group, response rates are consistently lower in all data collection phases compared to the default group. For example, 58 percent of sample members in the default group responded by the end of the early completion phase, and 82 percent responded by the end of production phase I. Comparatively, for the intensive contacting group, 23 percent of sample members responded by the end of the early completion phase, and 42 percent responded by the end of production phase I. As indicated, 53 percent of sample members in the intensive contacting group responded to the B&B:16/17 survey, while 88 percent of sample members in the default contacting group responded.

**Table 22. Final response rates for each data collection protocol group, by data collection phase: 2020**

Data collection phase	Data collection protocol group <sup>1</sup>					
	Group 2: Intensive			Group 3: Default		
	Eligible sample	Number	Percent <sup>2</sup>	Eligible sample	Number	Percent <sup>3</sup>
Early completion phase	7,690	1,760	23.2	14,970	8,620	57.6
Production phase I	7,520	3,170	42.2	14,970	12,280	82.1
Production phase II	7,510	3,290	43.8	14,970	12,570	84.0
Nonresponse conversion phase	7,480	3,790	50.6	14,970	12,990	86.8
Overall	7,480	3,930	52.6	14,970	13,220	88.3

<sup>1</sup> Data collection activities were determined by the sample member's assigned data collection protocol group. The intensive contacting group consisted of those who responded to either the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or who completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement.

<sup>2</sup> Percent includes full, abbreviated, and mini completes only.

<sup>3</sup> Percent includes full and abbreviated completes only.

NOTE: Includes eligible fielded cases as of the end of each data collection phase. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Abbreviated and mini survey results.** As indicated in table 21, both Groups 2 and 3 were offered the abbreviated 15-minute survey, and Group 2 was also offered a 5-minute mini survey later in data collection. Overall, 6,240 sample members were offered the abbreviated survey and 14 percent completed it, while 1,490 sample members were offered the mini survey and 3 percent completed it. Table 23 presents the results for the abbreviated survey, and table 24 presents the results for the mini survey.

**Table 23. Number and percentage of sample members offered an abbreviated survey and who completed the abbreviated survey, by data collection protocol group and prior response status: 2020**

Data collection protocol group <sup>1</sup> and prior response status	Eligible sample	Offered abbreviated survey		Completed abbreviated survey	
		Number <sup>2</sup>	Percent of eligible sample	Number	Percent of offered abbreviated survey
<b>Total</b>	<b>22,450</b>	<b>6,240</b>	<b>27.8</b>	<b>890</b>	<b>14.3</b>
Intensive contacting group					
NPSAS:16 respondent only	2,960	2,300	77.6	180	7.6
B&B:16/17 full survey respondent only	730	280	38.9	50	16.7
B&B:16/17 abbreviated or partial survey respondent	3,800	1,540	40.7	300	19.6
Default contacting group					
NPSAS:16 and B&B:16/17 full survey respondent	14,970	2,120	14.2	370	17.3

<sup>1</sup> Data collection activities were determined by the sample member's assigned data collection protocol group. The intensive contacting group consisted of those who responded to either the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or who completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement.

<sup>2</sup> Count includes all fielded cases who were offered the abbreviated version of the 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table 24. Number and percentage of sample members offered a mini survey and who completed the mini survey, by data collection protocol group and prior response status: 2020**

Data collection protocol group <sup>1</sup> and prior response status	Eligible sample	Offered mini survey		Completed mini survey	
		Number	Percent of eligible sample	Number	Percent of offered mini survey
<b>Total</b>	<b>22,450</b>	<b>1,490</b>	<b>6.6</b>	<b>40</b>	<b>2.8</b>
Intensive contacting group					
NPSAS:16 respondent only	2,960	†	†	†	†
B&B:16/17 full survey respondent only	730	230	32.1	#	1.3
B&B:16/17 abbreviated or partial survey respondent	3,800	1,240	32.6	40	3.2
Default contacting group					
NPSAS:16 and B&B:16/17 full survey respondent	14,970	†	†	†	†

† Not applicable.

# Rounds to zero.

<sup>1</sup> Data collection activities were determined by the sample member's assigned data collection group. The intensive contacting group consisted of those who responded to either 2015–16 National Postsecondary Student Aid Study (NPSAS:16) survey or the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) survey (but not both) or who completed the B&B:16/17 abbreviated survey (regardless of NPSAS:16 respondent status). The default contacting group consisted of those who responded to the NPSAS:16 survey and completed the full B&B:16/17 survey. It also includes 210 sample members who were NPSAS:16 respondents and B&B:16/17 partial survey respondents. These sample members were included in the default group because there was sufficient administrative data available for them that warranted this placement.

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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

## 3.5 Evaluation of the Survey

This section evaluates the survey items, including analyzing the performance of the instrument coders, the success of conversion text in eliciting responses to critical items, the use of help text to assist sample members, and item-level nonresponse.

### 3.5.1 Evaluation of Instrument Coder Forms

Each coder's coding success rate was analyzed 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 coder 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 cases the coder was administered to. Analysis of successful coding rates in the survey is limited to cases with a final complete or final partial complete status, including full, abbreviated, and mini surveys ( $n = 17,160$ ). Overall, respondents successfully coded their response 92 percent of the time when administered a coder (table 25).

Web nonmobile had the highest overall rate of successful coding, with 92 percent of responses coded in the survey. Web mobile had the next highest overall success rate at 91 percent, and telephone had the lowest overall success rate at 89 percent. By coder, coding success rates ranged from the *Country of origin* coder, at 69 percent overall success, to the *Postbaccalaureate institution* coder, at 99 percent overall success. All coders in the survey, except for the *Country of origin* coder, had a success rate of 86 percent or above.

Coder success rates by mode were consistent with overall success rates. The *Postsecondary institution* coder had the highest success rate of any coding system in web nonmobile and web mobile modes, with over 98 percent success in each mode, while the *PreK–12 school* coder had the highest success rate of any coding system in telephone mode. The *Country of origin* coder had the lowest success rate of any coding system in all three modes.

Significance tests were conducted for each of the five coders analyzed 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 mode for *Major or field of study* ( $p < .001$ ), *Occupation* ( $p < .001$ ), and *Country of origin* ( $p < .001$ ) coders. Coding success rates were significantly higher in web nonmobile mode than in telephone mode for the *Postbaccalaureate institution* ( $p < .01$ ), *Major or field of study* ( $p < .01$ ), and *Country of origin* ( $p < .05$ ) coders. Coding success rates were significantly higher in web mobile mode than in telephone mode for only the *Postbaccalaureate institution* ( $p < .05$ ). While telephone interviewers receive extensive training on using the various coders within the survey, respondents may provide text strings that do not produce desired results, making it difficult to choose a final code.

Table 25 shows a summary of coding success rates, by mode of administration and coding system.

**Table 25. Percent of responses coded in the survey for B&B:16/20 respondents, by mode of administration and coding system: 2020**

Coding system	Mode of administration <sup>1</sup>			
	Overall	Web nonmobile	Web mobile	Telephone
<b>Total</b>	<b>91.7</b>	<b>92.4</b>	<b>91.1</b>	<b>89.2</b>
Country of origin	69.4	81.0	62.6	58.8
Major or field of study	98.0	98.5	97.5	94.6
Occupation	86.4	87.2	85.6	85.6
Postbaccalaureate institution	98.5	98.7	98.4	95.7
PreK–12 school	97.9	98.1	97.7	98.0

<sup>1</sup> Mode of administration is the mode in which the respondent completed the student survey; this mode may be different from the starting mode for respondents who completed the survey in more than one session.

NOTE: PreK–12 = prekindergarten through 12th grade.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 3.5.2 Help Text

Respondents and telephone interviewers were able to click a help button provided on each form to view survey question-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.<sup>28</sup> The rate of help-text access was also analyzed at the form level, overall, and by mode of administration to identify specific forms that may have been difficult for users. Table 26 shows the 11 survey forms administered to at least 10 percent of respondents for which help text was accessed at a rate of 1 percent or greater (i.e., the forms on which help text was accessed the most), by mode of administration.

*Heard of TEACH Grant program* (BB20ETCHGRT) had the highest rate of help-text access at 7 percent. Based on prior rounds of administration and testing, the phrase “TEACH Grant” was hyperlinked in the survey question wording to allow for easier access to definitions of the program, which likely contributed to the

<sup>28</sup> 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 help text was accessed on each form by the number of times that form was administered. Only forms administered to at least 10 percent of respondents were included in the help-text analysis.

higher help-text access rate. Web nonmobile respondents accessed help text on this form at a significantly higher rate (9 percent) than both web mobile (3 percent) ( $p < .001$ ) and telephone mode (6 percent) ( $p < .05$ ). Additionally, telephone interviewers accessed help text on this form at a significantly higher rate than web mobile respondents ( $p < .05$ ). Web nonmobile mode displays the survey with all survey tools across the top of the screen, making the help-text button more visible than in web mobile mode, where it is located in a drop-down menu. Additionally, telephone interviewers are trained to use help text when the respondent asks a clarifying question.

**Table 26. Forms with a help-text access rate of at least 1 percent, by mode of administration, for B&B:16/20 respondents: 2020**

Form	Form description	Mode of administration <sup>1</sup>							
		Overall		Web nonmobile		Web mobile		Telephone	
		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
BB20ETCHGRT	Heard of TEACH Grant program	15,840	6.7	8,450	9.4	7,120	3.4	270	5.9
BB20NEGOTIAT	Negotiated salary or benefits with any employer since BA completion	15,500	4.5	8,280	5.3	6,960	3.7	260	2.3
BB20ELNFRGV	Aware of teacher loan forgiveness programs	15,840	3.7	8,450	4.9	7,120	2.3	270	2.6
BB20FFINCON	Shared financial responsibilities with household adult	7,530	2.8	4,180	4.3	3,240	1.0	110	2.7
BB20JBRRESP01	Job 1: job responsibilities	14,140	2.7	7,520	4.2	6,390	0.9	240	1.2
BB20CLICENSE	Had active professional cert or state/industry license as of 4 years after BA	15,840	1.6	8,450	2.4	7,120	0.8	270	1.1
BB20FHOMVAL	Current value of home(s)	5,720	1.6	2,830	2.2	2,780	0.9	110	4.6
BB20FCOMSRV	Performed community service or volunteered in last 12 months	15,840	1.5	8,450	2.0	7,120	0.8	270	2.7
BB20FENGL	English is native language	3,180	1.4	1,590	1.5	1,480	1.3	110	0.0
BB20DCURL01	Job 1: considered job to be part of career	24,800	1.3	13,570	1.9	10,820	0.6	420	0.7
BB20DCURTL01	Job 1: allowed to telecommute or work remotely	14,160	1.1	7,530	1.3	6,390	0.8	240	2.9

<sup>1</sup> Mode of administration is the mode in which the respondent completed the student survey; this mode may be different from the starting mode for respondents who completed the survey in more than one session.

NOTE: BA = bachelor's degree; TEACH = Teacher Education Assistance for College and Higher Education. Partial surveys were excluded from the analysis in this table. This table only includes those items that were administered to at least 10 percent of 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



### 3.5.3 Conversion Text

To minimize item-level nonresponse (see section 3.5.4 for item-level nonresponse) in the full-scale survey, the survey included “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 questions deemed critical to the goals of the study by content experts.

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 1 percent of the instances in which a form with a critical question was administered. The rate of successful conversions was calculated as the total number of valid responses on a form (including “Don’t know,” when applicable) after conversion text was triggered divided by the total number of instances in which conversion text was triggered. Overall, conversion text led to a valid response 79 percent of the time. Web nonmobile surveys accounted for 40 percent of the total instances in which conversion text was triggered and 39 percent of the total converted instances. Web mobile surveys accounted for 57 percent of the total instances in which conversion text was triggered and 59 percent of total converted instances. Telephone interviews made up the remaining 3 percent of total instances in which conversion text was triggered and 2 percent of total converted instances. The lower rate among telephone interviewers may be the result of refusal conversion training that all interviewers receive before data collection begins.

Table 27 shows rates at which conversion text was triggered and rates at which nonresponse was converted to a response, overall and by mode of administration, for the 15 forms in the survey with critical questions that did not display a “Don’t know” option once conversion text was triggered. Of these 15 forms, successful conversion rates range from 63 percent to 100 percent, with 10 forms resulting in conversion rates higher than 80 percent. B&B:16/17 nonrespondents were asked

to provide their *Bachelor's degree completion date* (BB20AWHEN) to determine eligibility. Of the 40 respondents who were administered this form, none of them triggered conversion text. The remaining four forms with conversion rates lower than 80 percent asked respondents to provide the following information:

*Estimated amount borrowed in private student loans during survey time frame* (BB20CPRIVEST), *Employer 1: period of at least one month when was not working for pay* (BB20DWKCONT01), *Current marital status* (BB20FMARR), and *Number of dependent children* (BB20FDEP2).

Significance tests were conducted to determine differences in conversion rates between mode of administration for each of the forms with critical questions. Possibly due to inadequate cell sizes for comparisons, there were no significant differences across modes for any of the critical items without a "Don't know" option in the survey.

**Table 27. Conversion rates for forms with critical questions, by mode of administration: 2020**

Form	Form description	Total			Web nonmobile			Web mobile			Telephone		
		Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>
BB20AAWRDT	Bachelor's degree award date: B&B:16/17 nonrespondents	830	0.5	100.0	380	0.3	100.0	380	0.8	100.0	70	#	#
BB20AWHEN	Bachelor's degree completion date: B&B:16/17 nonrespondents	40	#	#	20	#	#	20	#	#	10	#	#
BB20CPSTGRD	Enrolled in a degree/certificate program during survey time frame	17,160	0.1	100.0	8,920	0.1	100.0	7,790	0.1	100.0	450	0.2	100.0
BB20CDEG01	Postbaccalaureate degree 1: degree or certificate type	5,820	0.4	80.8	3,300	0.4	84.6	2,420	0.5	75.0	100	1.0	100.0
BB20CPRIVEST	Estimated amount borrowed in private student loans during survey time frame	30	20.7	66.7	10	25.0	33.3	20	13.3	100.0	#	50.0	100.0
BB20DANYJOBS	Worked for pay during survey time frame	17,110	0.3	87.5	8,910	0.3	88.5	7,770	0.4	86.2	440	0.2	100.0
BB20DEMPZIP01	Employer 1: ZIP Code	16,170	1.4	81.6	8,410	1.1	87.6	7,340	1.7	80.3	420	2.9	50.0
BB20DSTART01	Employer 1: start date	16,420	2.4	87.1	8,550	1.0	79.5	7,440	3.9	91.1	420	2.1	33.3
BB20DEND01	Employer 1: end date	16,300	1.5	81.4	8,500	1.4	86.1	7,380	1.6	77.7	420	1.4	66.7
BB20DWKCONT01	Employer 1: period of at least 1 month when was not working for pay	15,950	0.3	77.1	8,330	0.2	78.9	7,220	0.4	75.9	410	#	#
BB20ECURCRT	Certified as preK–12 teacher as of 4 years after BA completion	1,750	0.5	87.5	860	0.1	100.0	870	0.8	85.7	30	#	#
BB20FCITZN	Citizenship status	690	1.0	85.7	390	0.3	100.0	280	1.4	75.0	20	11.1	100.0
BB20FMARR	Current marital status	17,160	0.2	63.2	8,920	0.1	60.0	7,790	0.3	66.7	450	0.2	#
BB20FDEP2	Number of dependent children	4,850	0.4	70.6	1,940	0.2	66.7	2,750	0.5	71.4	160	#	#
BB20FOTDNUM	Number of other dependents	590	1.2	85.7	270	0.8	100.0	310	1.6	80.0	20	#	#

# Rounds to zero.

<sup>1</sup> Percent triggered is the number of instances in which conversion text was triggered divided by the number of times the form was administered.

<sup>2</sup> 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: BA = bachelor's degree; B&B:16/17 = 2016/17 Baccalaureate and Beyond Longitudinal Study; preK–12 = prekindergarten through 12th grade. Mode of administration is the mode in which the respondent completed the student survey; this mode may be different from the starting mode for respondents who completed the survey in more than one session. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Table 28 shows conversion rates for the three forms with critical questions that displayed a previously hidden “Don’t know” option once conversion text was triggered. The conversion rates for these forms ranged from 47 percent to 56 percent. Of the three forms, *Current monthly rent or mortgage payment amount* (BB20FMTGAMT) had a significantly lower conversion rate in web nonmobile mode than in web mobile mode ( $p < .05$ ), and *Respondent’s income ranges in 2019* (BB20FINEST) had a significantly lower conversion rate in telephone interview mode than web mobile mode ( $p < .0001$ ). There were no other significant differences in the critical items with a hidden “Don’t know” across modes due to inadequate cell sizes.

**Table 28. Conversion rates for forms with critical questions and a hidden “Don’t know” response option, by mode of administration: 2020**

Form	Form description	Total				Web nonmobile			
		Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “Don’t know” <sup>3</sup>	Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “Don’t know” <sup>3</sup>
BB20FMTGAMT	Current monthly rent or mortgage payment amount	13,190	1.8	55.6	18.3	7,020	1.8	51.2	16.8
BB20FINEST	Respondent’s income ranges in 2019	1,270	19.8	47.2	16.7	540	24.5	43.9	16.7

Form	Form description	Web mobile				Telephone			
		Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “Don’t know” <sup>3</sup>	Adminis-tered to	Percent triggered <sup>1</sup>	Percent converted <sup>2</sup>	Percent converted to a “Don’t know” <sup>3</sup>
BB20FMTGAMT	Current monthly rent or mortgage payment amount	5,970	1.9	61.6	19.6	200	2.0	25.0	25.0
BB20FINEST	Respondent’s income ranges in 2019	700	16.0	53.6	17.9	30	23.5	12.5	#

# Rounds to zero.

<sup>1</sup> Percent triggered is the number of instances in which conversion text was triggered divided by the number of times the form was administered.

<sup>2</sup> 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.

<sup>3</sup> Percent converted to a “Don’t know” is the number of instances in which a “Don’t know” response was provided after triggering conversion text, divided by the number of instances in which conversion text was triggered. Percent converted to a “Don’t know” is included within the percent converted.

NOTE: Mode of administration is the mode in which the respondent completed the student survey; this mode may be different from the starting mode for respondents who completed the survey in more than one session. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### **3.5.4 Item-Level Nonresponse**

An item in the survey is a single response (e.g., checkbox) 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:16/20 full-scale survey were calculated for all items administered to at least 25 respondents ( $n = 707$ ), and all items with a nonresponse rate of 10 percent or more are reported here. Table 29 shows items' nonresponse rates for the 18 items with 10 percent or more of data missing, overall and by mode of completion.

**Table 29. Item nonresponse for items with 10 percent or more of data missing for B&B:16/20 respondents, by mode of administration: 2020**

Item	Item Description	Overall		Web nonmobile		Web mobile		Telephone	
		Number administered to	Percent missing	Number administered to	Percent missing	Number administered to	Percent missing	Number administered to	Percent missing
BB20FLGBTQ_UNSURE	Sexual orientation: unsure: specify	140	50.0	70	44.3	70	55.9	#	†
BB20FNOTSURE_OTHER	Gender identity: questioning or unsure: other	70	47.7	30	31.3	30	63.6	#	†
BB20DNSFPBD01	Job 1: job skills related to postbaccalaureate program of study	2,430	37.0	1,340	39.0	1,050	34.2	40	43.2
BB20FGENDERQR_OTHER	Gender identity: genderqueer or gender nonconforming: other	110	23.2	60	22.0	50	24.5	#	†
BB20CFEDMORE	Federal student loan prepayment(s) in last 12 months	11,220	21.9	5,740	21.5	5,300	22.7	190	13.0
BB20FINSRA	Spouse or partner's income ranges in 2019	510	19.4	230	22.1	270	17.3	10	15.4
BB20ETCHLEV <sup>1</sup>	Reasons left teaching	50	17.8	20	12.5	20	27.8	#	†
BB20FOTDEPMY4	Date of dependency of other dependent 4	30	16.7	20	11.1	10	‡	#	†
BB20DNSFPBD02	Job 2: job skills related to postbaccalaureate program of study	1,140	14.4	670	15.0	460	13.4	20	17.6
BB20FOTDEPMY3	Date of dependency of other dependent 3	70	13.0	30	8.8	30	19.4	#	†
BB20DOCCEX603	Job 3: occupation: detailed occupation code	2,430	12.9	1,440	12.5	950	14.1	40	0.0
BB20DOCCEX601	Job 1: occupation: detailed occupation code	15,820	12.8	8,320	12.5	7,100	13.7	400	2.0
BB20DOCCEX602	Job 2: occupation: detailed occupation code	7,380	12.5	4,120	12.1	3,140	13.4	120	2.5
BB20FINCSP	Spouse or partner's income in 2019	7,490	12.1	3,770	10.8	3,600	13.6	110	12.4
BB20DNWCO03	Activity during nonworking period 3: cared for other family members	120	12.0	60	9.5	50	11.8	#	†
BB20DNWCC03	Activity during nonworking period 3: cared for children	120	12.0	60	9.5	50	11.8	#	†
BB20DNWPH03	Activity during nonworking period 3: personal health issues	120	10.8	60	9.4	50	9.4	#	†
BB20DNWES03	Activity during nonworking period 3: enrolled in school	60	10.5	40	5.7	20	10.5	#	†

† Not applicable.

# Rounds to zero.

‡ Reporting standards not met.

<sup>1</sup> Represents a set of items that were administered together on the form, BB20ETCHLEVB, with the same rate of nonresponse. Items include BB20ETCHLEVADV, BB20ETCHLEVB, BB20ETCHLEVCAR, BB20ETCHLEVDIS, BB20ETCHLEVPAR, BB20ETCHLEVRES, BB20ETCHLEVSTD, and BB20ETCHLEVSUP.

NOTE: Mode of administration is the mode in which the respondent completed the student survey; this mode may be different from the starting mode for respondents who completed the survey in more than one session. Partial surveys were excluded from the analysis in this table. This table includes only 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

The items with the highest overall nonresponse rate were *Sexual orientation: unsure: specify* (BB20FLGBTQ\_UNSURE), which was administered to 140 respondents, with an overall nonresponse rate of 50 percent, and *Gender identity: questioning or unsure: other* (BB20FNOTSURE\_OTHER), which was administered to 70 respondents and had an overall nonresponse rate of 48 percent. These items were administered to respondents who selected “questioning or unsure” when asked about their gender identity and “unsure” when asked about their sexual orientation. On both forms, the text box appeared underneath the selected option to allow respondents to provide further explanation of their response. The high rate of nonresponse is likely due to the sensitive nature of the questions.

The next highest overall nonresponse rate was *Job 1: job skills related to postbaccalaureate program of study* (BB20DNSFPBD01). This item was administered to 2,430 respondents and had an overall rate of nonresponse of 37 percent. In the postbaccalaureate employment section, respondents were asked to report all employment in which they worked for pay during the survey time frame. Then, the survey instrument selected up to three employers for additional job-level questions. Respondents who received this form had at least one employer selected for the additional job-level questions with a start date on or after the provided enrollment start date for their most recent degree. Higher nonresponse may be due to respondent fatigue, especially among respondents with both postbaccalaureate enrollment and postbaccalaureate employment to report.

*Activity during nonworking period 3* (BB2DNW03) had the lowest nonresponse rate among items administered to at least 25 respondents with a nonresponse rate of 10 percent or more. It was administered to 120 respondents with a nonresponse rate of 12 percent. After reporting the months employed at each employer earlier in the survey, the survey instrument calculated a month string that indicated overall months employed across all employers. For each period of 4 months or more in which respondents were not employed by any employer, this nonworking loop asked them to report what they were doing instead of working. The nonresponse rate of this item could be attributed to respondent fatigue as this was the third iteration of this question that was asked of respondents.

The next lowest overall nonresponse rate was *Spouse or partner's income in 2019* (BB20FINCSP), which was administered to 7,490 respondents and had an overall nonresponse rate of 12 percent. Respondents who were married or living with a partner in a marriage-like relationship were asked to provide the 2019 income for their spouse or partner. This information could be considered sensitive for some



respondents while others may not know their spouse or partner's income, which could have contributed to the nonresponse rate for the item. The third lowest overall nonresponse rate was *Job 2: occupation: detailed occupation code* (BB2DOCCEX602), which was administered to 7,380 respondents and had an overall nonresponse rate of 13 percent. This form was a coder form with an underlying database that populated results based on an entered text string. The high burden for some respondents associated with difficulty finding a specific job title within the populated list of results could have contributed to the nonresponse rate for this item.

Item-level nonresponse rates were also examined by mode of completion for the 19 items with 10 percent or more missing data. Two items had higher item-level nonresponse rates in web mobile than web nonmobile mode: *Job 1: occupation: detailed occupation* (BB20DOCCEX601) (14 percent and 13 percent, respectively) ( $p < .05$ ) and *Spouse or partner's income in 2019* (BB20FINCSP) (14 percent and 11 percent, respectively) ( $p < .001$ ), while one item had a higher item-level nonresponse rate in web nonmobile than web mobile mode: *Job 1: job skills related to postbaccalaureate program of study* (BB20DNSFPBD01) (39 percent and 34 percent, respectively [ $p < .02$ ]).

Item-level nonresponse rates for *Federal student loan prepayment(s) in last 12 months* (BB20CFEDMORE) were significantly higher in web nonmobile mode (22 percent) than in telephone mode (13 percent) ( $p < .001$ ). Web mobile mode also had a significantly higher nonresponse rate for this item, with 23 percent nonresponse, than telephone mode ( $p < .001$ ). Similarly, *Job 1: occupation: detailed occupation* (BB20DOCCEX601) had a significantly higher nonresponse rate in web nonmobile mode (13 percent) than in telephone mode (2 percent) ( $p < .001$ ) and a higher nonresponse rate in web mobile mode (14 percent) than in telephone mode ( $p < .001$ ).<sup>29</sup> Telephone interviewers are trained to use survey tools such as help text and receive extensive training on using the various coders in the survey, which likely led to the lower nonresponse rates for these items in telephone mode.

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<sup>29</sup> Item nonresponse rates were significantly higher in web nonmobile mode than in telephone mode for *Job 2: occupation: detailed occupation* (BB20DOCCEX602) ( $p < .001$ ) and *Job 3: occupation: detailed occupation* (BB20DOCCEX603) ( $p < .001$ ). Nonresponse rates for these items were also significantly higher in web mobile mode than in telephone mode for *Job 2: occupation: detailed occupation* (BB20DOCCEX602) ( $p < .001$ ) and *Job 3: occupation: detailed occupation* (BB20DOCCEX603) ( $p < .001$ ).

# Chapter 4. Administrative Records

## Outcomes and Evaluation

Administrative data are available for the B&B:16/20 cohort to supplement the survey data and reduce respondent burden. Table 30 identifies the administrative sources available for the B&B:16/20 cohort across all rounds of data collection and indicates whether the data were new, refreshed to include updated data, or carried forward from the prior round.

**Table 30. Selected administrative data sources for NPSAS:16, B&B:16/17, and B&B:16/20**

Data source	NPSAS:16	B&B:16/17	B&B:16/20
Integrated Postsecondary Education Data System	New	Carried over	Carried over
Central Processing System	New	Refreshed	Refreshed
National Student Loan Data System	New	Refreshed	Refreshed
SAT	New	Carried over	Carried over
ACT	New	Carried over	Carried over
National Student Clearinghouse	New	Refreshed	Refreshed
Veterans Benefits Administration	New	Refreshed	Refreshed

NOTE: Carried over = data carried over from previous round and not refreshed; New = new data source; Refreshed = data carried over from previous round and refreshed.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2015–16 National Postsecondary Student Aid Study (NPSAS:16), 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17), and 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 4.1 Administrative Records Matching Processes and Outcomes

As indicated in table 30, in addition to the student survey, sample member data for B&B:16/20 came from selected administrative databases, including two databases from the U.S. Department of Education’s FSA office: CPS and NSLDS. Other data sources included the NSC and VBA. This chapter provides details on the processes used to match these administrative data and the outcomes associated with each process.

#### 4.1.1 Central Processing System (CPS)

Federal financial aid application 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:16/20 sample for the 2018–19 and 2019–20 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:16/20 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 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 31 summarizes the results of CPS matching for academic years 2018–19 and 2019–20 with the number of cases sent and matched. The match rates were 15 percent and 12 percent, respectively. Fellowship and assistantship recipients who did not otherwise receive federal aid were not included because these aid sources are not usually need based and therefore do not require the completion of a federal financial aid application.

**Table 31. Results of Central Processing System (CPS) matching, by academic year: 2018–19 and 2019–20**

Academic year	Total sample	Sent to CPS <sup>1</sup>		Matched to CPS	
	Number	Number	Percent of eligible	Number	Percent of sent
2018–19	26,510	25,590	96.5	3,900	15.2
2019–20	26,510	25,620	96.7	3,180	12.4

<sup>1</sup> Records for sample members without Social Security numbers (SSNs) were not sent to CPS.

NOTE: The number of SSNs sent for matching may vary slightly by data source because different agencies have different requirements for matching identifiers and because SSNs, names, and dates of birth are updated for accuracy and completeness throughout the administrative records matching process. Sample sizes rounded to the nearest 10. Percentages are based on unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 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:16/20 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:16/20 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 SSL-encrypted 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 records for 19,290 sample members, 75 percent of sample members. The match yielded Pell Grant records for 14,800 sample members, or 58 percent of sample members. Table 32 shows the overall NSLDS match rates for sample members.

**Table 32. Results of National Student Loan Data System (NSLDS) loan and Pell Grant matching: 2021**

Sample members	Number	Percent
<b>Total sample</b>	<b>26,510</b>	<b>100.0</b>
Sent to NSLDS	25,640	96.7
Not sent to NSLDS <sup>1</sup>	870	3.3
NSLDS loans		
Matched	19,290	75.2
Did not match	6,350	24.8
Pell Grants		
Matched	14,800	57.7
Did not match	10,840	42.3

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

NOTE: Matching was completed on historical files that include awards made in 2020–21 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. The number of SSNs sent for matching may vary slightly by data source because different agencies have different requirements for matching identifiers and because SSNs, names, and dates of birth are updated for accuracy and completeness throughout the administrative records matching process. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 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.<sup>30</sup> StudentTracker data were requested toward 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 2020–21. 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 2020–21 academic year. Of the total sample members, 25,460 (96 percent) matched to NSC (table 33).

<sup>30</sup> For more information on NSC participation, visit <https://www.studentclearinghouse.org/>.

Reasons for a nonmatch include unavailable personally identifying data and school nonparticipation.

**Table 33. Results of National Student Clearinghouse matching: 2021**

Sampled cases	Number	Percent
<b>Total sample</b>	<b>26,510</b>	<b>100.0</b>
Matched	25,460	96.0
Did not match	1,050	4.0

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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

#### 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 VBA for data matching. The match used SSN as the primary identifier, with the other information used to ensure a match to the proper person. As with NSLDS file matching, all data transmissions used an NCES secure file transfer system. Federal veterans’ education benefits information was obtained for approximately 2,890 (11 percent) of the sample members sent for matching (table 34).

**Table 34. Results of Veterans Benefits Administration matching: 2021**

Sampled cases	Number	Percent
<b>Total sample</b>	<b>26,510</b>	<b>100.0</b>
Sent	25,640	96.7
Matched	2,890	11.3
Did not match	22,750	88.7
Not sent	870	3.3

NOTE: All cases with a valid Social Security number (SSN) 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. The number of SSNs sent for matching may vary slightly by data source because different agencies have different requirements for matching identifiers and because SSNs, names, and dates of birth are updated for accuracy and completeness throughout the administrative records matching process.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

## 4.2 Administrative Records Matching Quality Control

After the administrative data were received, several checks were performed to verify the quality of the data. File layouts and existing code 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 DOBs were compared to what was in the study database to make sure the data were for the correct person. If the names and DOBs 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 VBA for corrections or clarifications for any disagreement.

# Chapter 5. Data File Processing and Preparation

B&B:16/20 unit-level data were compiled from surveys and matches to government and other administrative databases. These unit-level data, metadata, and instructions files are available to researchers as a set of restricted-use data files. The public can generate tables of estimates and simple regressions based upon restricted-use data using PowerStats, the NCES data analysis tool on the DataLab website (<https://nces.ed.gov/datalab>). This chapter provides details on the contents of the restricted-use B&B:16/20 files, post-data-collection editing of the survey data files, and creation of analysis variables.

## 5.1 Overview of the B&B:16/20 Study Files

Source and derived data for B&B:16/20 are contained in restricted-use files and documented in detail in the associated codebooks. Source files are the individual data files collected as part of the study (e.g., the student interview data, administrative data from NSLDS). The derived data file combines information from these individual source files into one data set that is designed for research use. While researchers will primarily use the derived data file, the source data files are included in the restricted-use files as well, as they may be of interest for particular research projects. The restricted-use files listed in table 35 are available to researchers who have applied for and received authorization from NCES to access those files. Researchers may obtain authorization by contacting the Institute of Education Sciences Data Security Office (see <https://nces.ed.gov/statprog/rudman>).

The primary analysis file (or derived file) for the B&B:16 cohort contains data for approximately 20,330 cohort members who responded to NPSAS:16 or a B&B follow-up study and more than 1,400 variables, 400 of which were created using data collected for B&B:16/20. NSC and VBA data were also used to create analysis variables, although the source files are not available as restricted-use data files.

**Table 35. B&B:16/20 restricted-use files, description, and file path: 2020**

File name	Description
B&B:16/20 analysis (derived)	Contains analytic variables derived from all B&B:16/20 data sources for the 17,160 respondents. This file contains derived variables from each wave of the study, including the base year (NPSAS:16), the first follow-up (B&B:16/17), and the second follow-up (B&B:16/20).
B&B:16/20 student survey data	Contains data collected from the student surveys of the 17,160 respondents.
B&B:16/20 GIS census tract data	Contains one observation per student respondent with census tract-level characteristics based on geocoded location information of each student respondent's last-known residence matched to the 2015–19 (5-year) estimates from the American Community Survey from the U.S. Census Bureau.
B&B:16/17 student survey data	Contains the first follow-up data included in the B&B:16/17 data file collected for the B&B:16/20 respondents from the student survey.
NPSAS:16 derived	Contains the base-year derived data from NPSAS:16 collected for B&B:16/17 or B&B:16/20 respondents. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.
NPSAS:16 student survey data	Contains the base-year data included in the NPSAS:16 data file collected for the B&B:16/20 respondents from the student survey. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.
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 student records. Data may come from the NPSAS:16 undergraduate or graduate files, depending on the respondent's student level in NPSAS:16.
NPSAS:16 institution data	Contains institution-level data for the B&B:16/20 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.
CCD 14/15	Contains Common Core of Data (CCD) records from the 2014–15 academic year for schools whose NCES school IDs were reported by respondents as schools in which they worked. There is a separate record for each school.
CCD 15/16	Contains CCD records from the 2015–16 academic year for schools whose NCES school IDs were reported by respondents as schools in which they worked. There is a separate record for each school.
CCD 16/17	Contains CCD records from the 2016–17 academic year for schools whose NCES school IDs were reported by respondents as schools in which they worked. There is a separate record for each school.
CCD 17/18	Contains CCD records from the 2017–18 academic year for schools whose NCES school IDs were reported by respondents as schools in which they worked. There is a separate record for each school.
CCD 18/19	Contains CCD records from the 2018–19 academic year for schools whose NCES school IDs were reported by respondents as schools in which they worked. There is a separate record for each school.
CCD 19/20	Contains CCD records from the 2019–20 academic year for schools whose NCES school IDs were reported by respondents as schools in which they worked. There is a separate record for each school.
CPS 2019–20 data	Contains data received from the Central Processing System (CPS) for the 3,180 respondents who matched to the 2019–20 financial aid application files.
CPS 2018–19 data	Contains data received from CPS for the 3,900 respondents who matched to the 2018–19 financial aid application files.
CPS 2017–18 data	Contains data received from CPS for the 4,450 respondents who matched to the 2017–18 financial aid application files.
CPS 2016–17 data	Contains data received from CPS for the 5,460 respondents who matched to the 2016–17 financial aid application files.
Imputation flag	Contains imputation flags for any B&B:16/20 derived variables that were imputed or based on imputed data for the 17,160 respondents. This file includes one record per respondent.

See notes at end of table.



**Table 35. B&B:16/20 restricted-use files, description, and file path: 2020—Continued**

File name	Description
PSS 13/14	Contains Private School Universe Survey (PSS) records from the 2013–14 academic year for schools whose permanent identification numbers (PINs) were reported by respondents as schools in which they worked. There is a separate record for each school.
PSS 15/16	Contains PSS records from the 2015–16 academic year for schools whose PINs were reported by respondents as schools in which they worked. There is a separate record for each school.
PSS 17/18	Contains PSS records from the 2017–18 academic year for schools whose PINs were reported by respondents as schools in which they worked. There is a separate record for each school.
NSLDS loan	Contains loan-level data received from the National Student Loan Data System (NSLDS) for the matched respondents who received federal loans as of early 2021. This file includes one record for each federal loan received by these respondents and provides the most recent information for that loan.
NSLDS loan disbursement	Contains loan-disbursement-level data from NSLDS for the matched respondents who received federal loans as of early 2021. This file includes one record for each disbursement made on a federal loan to respondents.
NSLDS loan delinquency	Contains loan-level delinquency data received from NSLDS for respondents who were ever delinquent on a federal loan as of early 2021. This is a history file with separate records for each instance of delinquency per loan.
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 2021. This is a history file with separate records for each instance of deferment per loan.
NSLDS loan enrollment	Contains student-school-program-level enrollment information from NSLDS for respondents as of early 2021. This file includes one record for each program and enrollment status change for a student as reported to NSLDS.
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 2021. This is a history file with separate records for each instance of forbearance per loan.
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 2021. This is a history file with a separate record for each default occurrence per loan.
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 2021. This is a history file with a separate record for each default occurrence per loan.
NSLDS outstanding interest balance	Contains loan-level outstanding interest balance data received from NSLDS for respondents who received federal loans as of early 2021. This is a history file with separate records for each interest update per loan.
NSLDS outstanding principal balance	Contains loan-level outstanding principal balance data received from NSLDS for respondents who received federal loans as of early 2021. This is a history file with separate records for each balance update per loan.
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 2021. This is a history file with separate records for each payment made on a loan.
NSLDS loan repayment plan	Contains loan-level repayment plan information received from NSLDS for respondents who entered repayment on federal loans as of early 2021. This is a history file with separate records for each change to a loan's repayment.
NSLDS loan to IDR application data	Contains loan application-level repayment plan data, where each observation represents a successful enrollment, recertification, or recalculation on an income-driven repayment (IDR) plan as of early 2021 resulting from the IDR application identification number linked to the observation.

See notes at end of table.

**Table 35. B&B:16/20 restricted-use files, description, and file path: 2020—Continued**

File name	Description
NSLDS IDR plan application data	Contains student application-level data received from NSLDS for respondents who applied for any federal IDR plans for federal loans as of early 2021. Each observation represents an IDR plan application.
NSLDS FAFSA history	Contains student-award-year-level data from the Free Application for Federal Student Aid (FAFSA), stored and obtained from NSLDS as of early 2021. This file includes one record for each year in which a respondent filed a FAFSA between the 1995 and 2022 federal award years. Each record includes income, expected family contribution, and select demographic information reported on the application.
NSLDS award origin	Contains student-award-year-level data on federal Direct Loans awarded as of early 2021. This file includes one record for each student and year during which the student was awarded a federal Direct Loan between 2010 and 2021. The file is an aggregation of loan-level data reported by institutions to the U.S. Department of Education's Common Origination and Disbursement system and provides information on loan amount eligibility and the academic year periods associated with loans disbursed during the award year.
B&B:16/20 weights	Contains the final B&B:16/20 weight and variance estimation variables as a separate record for each study member.
B&B:16/20 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.

NOTE: GIS = geographical information system; NPSAS:16 = 2015–16 National Postsecondary Student Aid Study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

## 5.2 Post-Data-Collection Survey Data Editing

During data collection, quality control checks were performed on all survey items to ensure the quality and accuracy of data. Survey item responses were processed into a dataset to be delivered as a restricted-use file (bb20survey\_datafile). The survey data file, which serves as a principal source file for derived variables, includes data as reported by respondents. Inconsistencies in self-reported data are neither edited nor documented in source files. During derived variable construction, inconsistencies that were identified may have been remedied at that point. Outlier data in continuous variables are not bottom coded, top coded, or blanked out but remain in the source file for reference during derived variable construction. Documentation for the survey variables includes question wording, response options, logical imputations, and administration descriptions (see the full-scale survey instrument in appendix B). Preparing this survey data file was a multifaceted process described in the steps below.

**Assigning missing data codes.** All missing data from the survey were assigned missing data codes to indicate why data were missing. Project staff defined gate-nest question relationships, in which “gate” questions must first be answered before dependent “nest” questions. Some values were missing due to appropriate question routing (e.g., a respondent with no dependents would not be administered a question about a dependent’s age). These values were assigned a

missing data code of -3, “item does not apply.” If a value was missing because the respondent completed the abbreviated or mini survey and the item was excluded from those surveys, the value was assigned a -7, “not included in abbreviated survey.” If enough information was available to determine that a variable not included in the abbreviated or mini survey would still not apply had the respondent been administered the full survey, then a -3 is applied in place of -7. Therefore, all variables not included in the abbreviated or mini survey will not have the same number of -7s. Sometimes an item was not administered when, due to prior missing data, it was not possible to determine whether the item applied to the respondent; these items were assigned a value of -4.

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

Assigning these codes during data collection served as a quality control check for the instrument operation, final data file quality, and documentation accuracy. For example, if an investigation revealed survey routing was not operating properly, an update was deployed to the survey and the item was assigned a -8 value signifying that the item was missing due to an instrument error. Any final missing data codes were determined to be missing because the respondent did not provide an answer and were assigned a code of -9. See survey missing data codes and descriptions in table 36.

**Table 36. B&B:16/20 survey missing data codes and descriptions: 2020**

<b>B&amp;B:16/20 survey missing data code</b>	<b>Description</b>
-1	Respondent did not know the correct response; explicit response provided by respondent.
-3	Item does not apply to the respondent.
-4	Preceding gate was left blank and cannot determine if dependent nested items apply.
-5	Item left blank by respondent but a positive response was provided for other items in the group. (When some grouped items with a response are positive, a “0” or “no” value is implied for other items in the group left blank.)
-7	Item not included in the abbreviated or mini survey, so respondent did not have an opportunity to provide an answer.
-8	Item is missing data due to an instrument error.
-9	Respondent saw item but did not provide an answer.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Applying logical recodes.** Logical recodes of values were performed when the value of missing items could be definitively determined (as opposed to implied) from answers to previous survey questions. For example, if a respondent answered “no” to *Did you work for pay during a particular time period* (BB20DANYJOBS), then the item, *How many employers did you have during the same time period* (BB20DNUMEMP) was skipped and logically recoded to “none.”

**Sanitizing.** All open-ended responses collected in the survey were systematically reviewed. Any PII was “sanitized,” or removed from the text string. Any other text was left unchanged. All open-ended text strings released on the restricted-use datasets were sanitized.

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

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

### 5.2.1 Recoding

Recoding is a process in which expert coding staff review the codes chosen in the survey alongside the original text strings that were entered in the text box of a coder form to determine the code selection that most accurately describes the text string provided. This process was only completed for respondents who completed the survey in telephone mode and, therefore, had their full responses entered for

them by an interviewer. Because of the predictive text search functionality of the coder forms, web nonmobile and web mobile respondents often provided only partial text strings before seeing and selecting an option, making it difficult for the expert coding staff to accurately review the text strings and determine a code selection.

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 string provided by the interviewer on behalf of the respondent was too vague to code. Because of the large variability in names given to programs of study across institutions and in job titles given to the same or similar jobs across employers, the recoding review was conducted for both majors and occupations. Ten percent of major and occupation codes entered in telephone mode were randomly selected from survey data for recoding. Table 37 shows the rate of recodes for the major and occupation coding systems administered in telephone mode.

**Table 37. Percentage of recoded values in telephone mode by coding system: 2020**

Coding system	Percent of recoded values		
	Recoded same as original	Recoded to a different value	Text string too vague to code
Major or field of study	54.6	45.5	#
Occupation	66.7	31.8	1.5

# Rounds to zero.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 5.2.2 Upcoding

Upcoding is a process by which expert coding staff attempt to assign a code to any text string that a respondent or interviewer did not select a code for in the instrument. Text strings from each coder went through the upcoding process. Overall, one coder—*Country of origin*—had an upcode rate greater than 10 percent, while the remaining four coders had upcode rates lower than 2 percent. Text strings from the *Occupation* coder were upcoded the least, at 0.3 percent. Table 38 shows the upcode rates for the *Country of origin*, *Major or field of study*, *Occupation*, *Postbaccalaureate institution*, and *PreK–12 school* coding systems, overall and by mode of administration.

**Table 38. Summary of upcode rates, by mode of administration and coding system: 2020**

Coding system	Overall	Web nonmobile	Web mobile	Telephone
Country of origin	11.4	3.4	17.2	9.1
Major or field of study	0.8	0.6	0.8	5.4
Occupation	0.3	#	0.1	11.4
Postbaccalaureate institution	1.5	1.3	1.6	4.3
PreK–12 school	1.7	1.7	1.7	2.0

# Rounds to zero.

NOTE: PreK–12 = prekindergarten through 12th grade.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

## 5.3 Derived Variable Construction

Derived variables combine items across sources, prioritize the sources by item, and reconcile discrepancies within and between sources. In some cases, variables simply assign a value from the source with the highest priority based on factors such as data reliability or coverage for the items. The primary analysis file (bb20derived\_datafile) and the NCES online DataLab tool not only contain derived variables created for B&B:16/20 (designated with the prefix B2), but they also contain analysis variables constructed for each prior round (i.e., NPSAS:16 and B&B:16/17). A complete list of analysis variables is provided in appendix I. 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/>.

Most variables were imputed to address missing responses. All imputed variables have a corresponding flag variable that indicates whether the value was reported or imputed. The flags are located on a separate restricted-use data file (bb20flag\_datafile) and are denoted with a suffix of \_F. For more information on the imputation process, see section 6.5. Items that were not imputed still contain missing data for respondents to the data collection round for which that variable was constructed. This missing data affects the representativeness of the variable’s weighted estimate. Missing data codes (table 36) differentiate reasons for missing data. When a variable is not imputed, missing values are assigned a value of -9 to indicate item-level missingness.

A second type of missing data occurs in the analysis variables when sample members did not respond to the data collection round for which a given variable was constructed. (See chapter 2 for details on each data collection’s sampling process.) In these cases, the representativeness of the variable’s weighted value is not affected because the analysis weights correct for unit nonresponse. To

distinguish these cases from unimputed values, a value of -8 is used to indicate unit nonresponse.

Table 39 provides descriptions for the missing data codes presented on the analysis file. Users should refer to the restricted-use file codebooks' missing data code documentation for more detail on each variable's derivation.<sup>31</sup>

**Table 39. B&B:16/20 analysis variable missing data codes and descriptions: 2020**

Missing data code	Item source	Description(s)
-1	Any survey	Respondent selected "Don't know" as a response.
-2	IPEDS	Item does not apply.
-3	Any	Item does not apply (i.e., the item was "skipped" or a "legitimate skip").
-6	Any	Out of bounds (e.g., foreign country).
-8	Any	Variable not created for the nonrespondent (unit-level nonresponse).
-9	Any	Missing (item-level missingness).

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

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<sup>31</sup> To ensure missing data codes are not inadvertently analyzed as valid values, formatting programs provided on the restricted-use files convert missing data codes to the statistical software's system value for missing. During this conversion, value labels may not be preserved. Instruction files are included on the restricted-use files to aid in the use of these programs.

# Chapter 6. Weighting and Variance Estimation

This chapter provides information about the weighting procedures and variance estimation for B&B:16/20. The use of weights is necessary to produce estimates that are representative of the target population of 2015–16 baccalaureate recipients (see section 2.1 for population details). When testing hypotheses (e.g., conducting *t* tests, regression analyses, etc.) with weighted data from a study with a complex sampling design, such as B&B:16/20, analysts should properly estimate variances using methods such as bootstrap replication and Taylor series linearization. Bootstrap replication is used in the publicly available tools in DataLab, and both methods are possible using the restricted-use files. Specifically, the restricted-use files include bootstrap replicate weights as well as primary sampling unit (PSU) and stratum identifiers, with and without the correction for assuming a finite population.

The development of statistical analysis weights for the B&B:16/20 sample is discussed in section 6.1. Section 6.2 discusses the weighted and unweighted response rates. Section 6.3 discusses the accuracy of B&B:16/20 estimates and the potential for nonresponse bias. Analysis procedures that can be used to produce unbiased estimates of sampling variances are discussed in section 6.4. This section further describes how the bootstrap replicate weights, PSU variables, and Taylor series strata were constructed. Also included in this section is a discussion of the design effects that measure the precision of survey estimates. Finally, imputations are discussed in section 6.5, and disclosure risk analysis and avoidance is discussed in section 6.6.

## 6.1 Analysis Weights

As of the B&B:16/17 release in December 2019, the B&B:16 cohort had one analysis weight available (WTA000), and two more were developed to analyze the B&B:16/20 data (WTB000 and WTC000). Each B&B:16/20 weight allows for the creation of population estimates from a specific subsample of the B&B:16 cohort based on the group's response pattern to B&B:16/20 and prior collections.

Tables 40-A and 40-B provide analysis weights available as of B&B:16/17 and B&B:16/20, respectively. The tables include each weight's respondent



description, sample size, and response pattern. Generally, a cross-sectional weight should be applied when analyzing participant data within one data collection (e.g., WTB000 for cross-tabulations of employment and enrollment as of B&B:16/20), and a longitudinal weight should be applied when analyzing respondent data across multiple years (e.g., WTC000 for trend analyses of employment status in 2016, 2017, and 2020). The remainder of this section will only discuss the development of analysis weights WTB000 and WTC000, the two weights developed for analyzing data from the B&B:16/20 data collection. For details on prior-round weight construction, see the respective data file documentation reports (*2015–16 National Postsecondary Student Aid Study (NPSAS:16) Data File Documentation* [Wine, Siegel, and Stollberg 2018] and *2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) Data File Documentation* [Wine et al. 2019]).

**Table 40-A. Respondent description, sample size, and response pattern for the B&B:16/17 analysis weight: 2017**

Analysis weight	Respondent description	Sample size	Response pattern	
			NPSAS:16 study member	B&B:16/17
WTA000	Students who received a bachelor's degree in the 2015–16 academic year, responded to the base-year survey in 2015–16, and responded to the 2017 follow-up survey	19,490	Yes	Yes

NOTE: NPSAS:16 = 2015–16 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).

**Table 40-B. Respondent description, sample sizes, and response patterns for the B&B:16/20 analysis weights: 2020**

Analysis weight	Respondent description	Sample size	Response pattern		
			NPSAS:16 study member	B&B:16/17	B&B:16/20
WTB000	<b>B&amp;B:16/20 respondents:</b> Students who received a bachelor's degree in the 2015–16 academic year, responded to the base-year survey in 2015–16, and responded to the 2020 follow-up survey	17,160	Yes	Yes/No <sup>1</sup>	Yes
WTC000	<b>B&amp;B:16/20 and B&amp;B:16/17 respondents:</b> Students who received a bachelor's degree in the 2015–16 academic year, responded to the base-year survey in 2015–16, and responded to the 2017 and 2020 follow-up surveys	16,310	Yes	Yes	Yes

<sup>1</sup> For WTB000, response to B&B:16/17 does not factor into inclusion for the weight.  
NOTE: B&B:16/17 = 2016/17 Baccalaureate and Beyond Longitudinal Study; NPSAS:16 = 2015–16 National Postsecondary Student Aid Study.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Because the B&B:16/20 sample members are a subset of the NPSAS:16 sample,<sup>32</sup> all weights for analyzing the B&B:16 cohort were constructed from the NPSAS:16 weights. Specifically, the initial base weight for B&B:16/20 was calculated as the NPSAS:16 student design weight with a subsampling adjustment. Then, construction of each of the two B&B:16/20 weights adjusted the base weight to account for patterns of nonresponse. The weights were then poststratified (i.e., they were calibrated) to weighted NPSAS:16 estimates and population estimates from the IPEDS:2015–16 Completions file (C2016\_a).<sup>33</sup>

Using a weighting methodology described by Folsom and Singh (2000), all nonresponse and poststratification weighting adjustments were computed using the procedure WTADJUST in SUDAAN (RTI International 2012). The WTADJUST procedure is designed such that the sum of the unadjusted weights for all eligible sample members equals the sum of the adjusted weights for the respondents. It uses a constrained logistic model to predict the likelihood a sample member would respond, using bounds for adjustment factors and bounds on variance inflation.<sup>34</sup> These bounds control for extreme weight values and reduce the design effect due to unequal weighting. Weighting staff set the initial bounds before running WTADJUST, and the procedure determines the actual minimum and maximum adjustment factors within the bounds for model convergence. A key feature and advantage of this procedure is that the weight adjustments and weight trimming and smoothing are all accomplished in one step.

### 6.1.1 Base Weight for B&B:16/20

As mentioned above, the B&B:16/20 base weight was derived from the NPSAS:16 weights. The following weight components from NPSAS:16 compensated for the unequal probability of selection of institutions and students in the NPSAS:16 sample:

- institution field-test sampling adjustment (WT1);<sup>35</sup>
- institution sampling weight (WT2);
- institution nonresponse adjustment (WT3);

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<sup>32</sup> Chapter 2 details NPSAS:16 sampling and B&B:16/20 subsampling procedures.

<sup>33</sup> IPEDS data files can be downloaded from the online IPEDS data center at [HTTPS://NCES.ED.GOV/IPEDS/USE-THE-DATA](https://nces.ed.gov/ipeds/use-the-data).

<sup>34</sup> The exact formula for the weight adjustment factors calculated by the SUDAAN WTADJUST procedure can be found in the SUDAAN User's Manual (RTI International 2012).

<sup>35</sup> Separate institution frames were created for the field test and the full-scale study, and some institutions included in the field-test sampling frame were not included in the full-scale sampling frame. The field-test institution frame was constructed from the same survey files for the previous academic year.

- institution poststratification adjustment (WT4);
- student sampling weight (WT5);
- student multiplicity adjustment (WT6); and
- 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 cohort as described in section 2.3. This resulted in an additional adjustment (BB20WT1) to account for subsampling of students for inclusion in B&B:16/20.

The B&B:16/20 base weight was formed as the product of each of these adjustment factors. Specifically, for each student, the B&B:16/20 base weight was computed as

$$\text{B\&B:16/20 base weight} = \text{WT1} \times \text{WT2} \times \text{WT3} \times \text{WT4} \times \text{WT5} \times \text{WT6} \times \text{WT7} \times \text{BB20WT1}.$$

### 6.1.2 Nonresponse Adjustments

The two main reasons that B&B:16/20 sample members did not respond to the survey or were nonrespondents were that they were never located or that they were located but did not complete the survey. Because the distributions of characteristics were statistically different between these two groups (i.e., not located and located but nonresponding) and these characteristics were likely predictors of both response status and survey outcomes, adjustments for them were constructed separately. The nonresponse adjustment model for sample members not located included the full B&B:16/20 eligible sample of 26,250 individuals. And a separate nonresponse model for located nonrespondents was applied for each of the two new analysis weights. These models included all 20,430 sample members who were located, eligible, and not deceased for the 2020 follow-up survey.

All nonresponse adjustment models included predictor (independent) variables that were predictive of both response status and study outcomes and were nonmissing for both respondents and nonrespondents. Also included were predictor variables used in the NPSAS:16 nonresponse adjustment models. The following variables were identified for inclusion:

- control of baccalaureate-granting institution (categorical, from NPSAS:16);
- region of baccalaureate-granting institution (categorical, from NPSAS:16);
- baccalaureate-granting institution total enrollment from IPEDS 2015–16 file (quartiles, from NPSAS:16);
- age group as of December 31, 2015 (categorical, from NPSAS:16);
- veteran status (veteran/not a veteran, from NPSAS:16);
- race/ethnicity (categorical, from NPSAS:16);
- sex (male/female/unknown, from NPSAS:16);
- SSN obtained from baccalaureate-granting institution enrollment list (yes/no, from NPSAS:16);
- Pell Grant amount received in 2015–16 (categorical, from NPSAS:16);
- Direct Loan amount received in 2015–16 (quartiles, from NPSAS:16);
- Parent PLUS Loan amount received in 2015–16 (quartiles, from NPSAS:16);
- federal aid receipt (yes/no/unknown) in 2015–16 (from NPSAS:16);
- institution aid receipt (yes/no/unknown) in 2015–16 (from NPSAS:16);
- state aid receipt (yes/no/unknown) in 2015–16 (from NPSAS:16);
- any aid receipt (yes/no/unknown) in 2015–16 (from NPSAS:16);
- baccalaureate major (categorical, from NPSAS:16);
- cumulative amount borrowed in federal student loans for undergraduate education 4 years after bachelor’s degree (BA) completion (quartiles, from B&B:16/20);
- cumulative amount borrowed in federal student loans for graduate education 4 years after BA completion (quartiles, from B&B:16/20);
- cumulative amount borrowed in federal student loans 4 years after BA completion (quartiles, from B&B:16/20);
- amount owed on federal student loans in principal 4 years after BA completion (quartiles, from B&B:16/20);
- ratio of amount owed to amount borrowed in federal loans 4 years after BA completion (categorical, from B&B:16/20); and

- federal loan default status 4 years after BA completion (yes/no/not applicable, from B&B:16/20).

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

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

Before SUDAAN's WTADJUST procedure was implemented as described above, an initial lower bound for the nonresponse adjustment factors was set at 1 but no upper limits were set. Once convergence of the model was achieved, weight adjustment bounds were tightened to reduce the magnitude of the weight adjustment factors and the unequal weighting effects (UWEs). The results of the nonresponse adjustment models follow.

**Not-located nonresponse adjustment (BB20WT2).** Table 41 shows the final predictor variables used in the weight adjustment model for eligible sample members not located and the average weight adjustment factor resulting from each variable. To achieve model convergence, the final lower bound was 1 and the final upper bound was set to 350. The not-located adjustment factor has the following characteristics:

- minimum: 1.01;
- median: 1.22; and
- maximum: 18.45.

**Table 41. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:16/20 sample members not located, by model predictor variable: 2020**

Model predictor variable	Number located and eligible	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20WT2)
<b>Total</b>	<b>20,430</b>	<b>74.22</b>	<b>1.33</b>
Control of baccalaureate-granting institution <sup>2</sup>			
Public	8,070	73.69	1.35
Private nonprofit	6,180	75.97	1.29
Private for-profit	6,180	70.99	1.35
Region of baccalaureate-granting institution <sup>2,3</sup>			
New England	1,030	73.00	1.33
Mideast	3,500	74.47	1.31
Great Lakes	3,170	75.60	1.30
Plains	1,630	76.56	1.27
Southeast	4,830	74.94	1.33
Southwest	2,320	71.08	1.37
Rocky Mountains	1,090	80.54	1.32
Far West	2,690	70.98	1.41
Outlying Areas	170	72.95	1.44
Total enrollment of baccalaureate-granting institution <sup>2,4</sup>			
1–2,907	5,430	76.09	1.31
2,908–10,157	5,120	75.31	1.32
10,158–27,396	4,940	73.35	1.36
27,397 or more	4,940	73.73	1.34
Age as of December 31, 2015			
15–23	10,760	75.75	1.29
24–29	4,290	70.72	1.38
30 or older or unknown	5,370	72.21	1.37
Veteran status in 2015–16			
Veteran	1,730	70.33	1.39
Not a veteran	18,700	74.38	1.33
Race/ethnicity			
American Indian or Alaska Native, not Hispanic or Latino	110	67.43	1.37
Asian, not Hispanic or Latino	1,290	64.13	1.49
Black, not Hispanic or Latino	2,570	77.18	1.29
Hispanic or Latino, of any race	2,900	78.03	1.29
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	70	80.70	1.25
White, not Hispanic or Latino, or unknown	12,790	73.91	1.34
Two or more races, not Hispanic or Latino	700	83.87	1.20
Sex			
Male	8,230	71.79	1.37
Female	12,200	76.02	1.31
Social Security number available			
Available	20,130	76.15	1.31
Not available	300	34.67	3.06

See notes at end of table.

**Table 41. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:16/20 sample members not located, by model predictor variable: 2020—Continued**

Model predictor variable	Number located and eligible	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20WT2)
Pell Grant amount received in 2015–16 <sup>5</sup>			
None	12,590	72.20	1.36
\$1–\$2,887	2,760	81.09	1.24
\$2,888–\$5,774	2,840	81.62	1.23
\$5,775	1,710	80.91	1.25
Not applicable	520	56.48	1.88
Direct Loan amount received in 2015–16 <sup>4</sup>			
None	10,540	68.99	1.42
\$1–\$4,197	2,470	80.54	1.24
\$4,198–\$7,500	4,790	81.94	1.22
\$7,501–\$8,296	190	74.38	1.36
\$8,297 or more	2,440	79.98	1.25
Parent PLUS Loan amount received in 2015–16 <sup>4</sup>			
None	18,740	74.58	1.32
\$1–\$7,050	290	77.80	1.28
\$7,051–\$12,752	290	78.72	1.27
\$12,753 or more	590	82.66	1.21
Not applicable	520	56.48	1.88
Federal aid status in 2015–16			
Received	13,310	80.74	1.25
Did not receive	6,170	66.33	1.49
Unknown	950	64.68	1.50
Institutional aid status in 2015–16			
Received	9,040	79.69	1.26
Did not receive	9,330	70.94	1.39
Unknown	2,060	70.41	1.37
State aid status in 2015–16			
Received	3,650	81.21	1.23
Did not receive	14,610	72.73	1.35
Unknown	2,170	71.80	1.35
Baccalaureate major			
Humanities	2,230	72.93	1.36
Social/Behavioral sciences	2,030	78.49	1.26
Life sciences	2,040	78.92	1.25
Physical sciences/Mathematics	440	76.26	1.27
Computer/Information sciences	1,600	77.26	1.28
Engineering	1,240	75.34	1.32
Education	2,060	79.61	1.26
Business/Management	2,500	71.21	1.37
Health	3,090	75.84	1.30
Vocational/Technical	120	79.92	1.25
Other technical/professional	2,460	73.57	1.35
Undecided or Missing/Unknown	640	52.92	2.11

See notes at end of table.

**Table 41. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:16/20 sample members not located, by model predictor variable: 2020—Continued**

Model predictor variable	Number located and eligible	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20WT2)
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>4</sup>			
None	5,650	66.88	1.46
\$1–\$19,500	3,600	76.36	1.32
\$19,501–\$29,500	3,750	80.51	1.24
\$29,501–\$45,000	3,760	79.87	1.25
\$45,001 or more	3,670	77.00	1.31
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>4</sup>			
None	16,400	72.41	1.36
\$1–\$18,600	1,010	83.57	1.20
\$18,601–\$35,812	1,000	81.92	1.23
\$35,813–\$61,500	1,050	81.68	1.23
\$61,501 or more	980	83.03	1.21
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>4</sup>			
None	5,060	65.48	1.49
\$1–\$22,500	3,720	75.75	1.33
\$22,501–\$34,147	3,840	79.60	1.26
\$34,148–\$55,614	3,880	79.59	1.27
\$55,615 or more	3,930	81.03	1.26
Amount owed on federal student loans in principal, 4 years after BA completion <sup>4</sup>			
None	2,220	74.10	1.37
\$1–\$20,214	3,240	79.07	1.26
\$20,215–\$37,497	3,290	78.89	1.27
\$37,498–\$63,654	3,310	80.30	1.26
\$63,655 or more	3,310	80.94	1.27
Not applicable, did not receive federal student loan(s)	5,060	65.48	1.49
Ration of amount owed to amount borrowed in federal loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>4</sup>			
0 percent, federal student loan(s) repaid	2,220	74.10	1.37
1–80 percent	3,390	79.99	1.24
81–105 percent	3,450	81.55	1.23
106–116 percent	3,280	83.04	1.20
117 percent or more	3,040	71.47	1.40
Not applicable, did not receive federal student loan(s)	5,060	65.48	1.49
Federal loan default status, 4 years after BA completion			
Yes, defaulted on federal student loan(s)	490	60.41	1.68
No, did not default on federal student loan(s)	14,880	79.27	1.27
Not applicable, did not receive federal student loan(s)	5,060	65.48	1.49

See notes at end of table.



**Table 41. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:16/20 sample members not located, by model predictor variable: 2020—Continued**

Model predictor variable	Number located and eligible	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20WT2)
CHAID segments in nonresponse adjustment model			
Did receive any aid in 2015–16: White, non-Hispanic, Black, non-Hispanic, or Hispanic; not applicable for federal loan default, 4 years after BA completion	2,820	78.49	1.26
Did receive any aid in 2015–16: White, non-Hispanic, Black, non-Hispanic, or Hispanic; did not default on federal student loans, 4 years after BA completion, or did receive any aid in 2015–16 and race/ethnicity is unknown	12,070	80.64	1.28
Did receive any aid in 2015–16: White, non-Hispanic, Black, non-Hispanic, or Hispanic; did default on federal student loans, 4 years after BA completion	400	63.56	1.62
Did receive any aid in 2015–16: Native Hawaiian or other Pacific Islander, non-Hispanic or Two or more races, non-Hispanic, cumulative amount borrowed in federal student loans, 4 years after BA completion was \$0	110	78.63	1.27
Did receive any aid in 2015–16: Native Hawaiian or other Pacific Islander, non-Hispanic or Two or more races, non-Hispanic; cumulative amount borrowed in federal student loans, 4 years after BA completion was between \$1 and \$34,147	270	92.09	1.09
Did receive any aid in 2015–16: Native Hawaiian or other Pacific Islander, non-Hispanic or Two or more races, non-Hispanic; cumulative amount borrowed in federal student loans, 4 years after BA completion was between \$37,498 and \$63,654	120	82.26	1.23
Did receive any aid in 2015–16: Native Hawaiian or other Pacific Islander, non-Hispanic or Two or more races, non-Hispanic; cumulative amount borrowed in federal student loans, 4 years after BA completion was \$63,655 or more	150	95.02	1.07
Did receive any aid in 2015–16: Asian, non-Hispanic or American Indian or Alaskan Native, non-Hispanic; SSN available	1,020	75.12	1.31
Did receive any aid in 2015–16: Asian, non-Hispanic or American Indian or Alaskan Native, non-Hispanic; SSN not available	40	54.12	1.82
Did not receive any aid in 2015–16: SSN available; control of baccalaureate-granting institution was public	450	94.81	1.05
Did not receive any aid in 2015–16: SSN available; control of baccalaureate-granting institution was private nonprofit	1,060	88.92	1.12
Did not receive any aid in 2015–16: SSN available; control of baccalaureate-granting institution was private for-profit	440	97.05	1.03
Did not receive any aid in 2015–16: SSN not available	70	62.08	1.69
Unknown if received any aid in 2015–16: White, non-Hispanic, Black, non-Hispanic, Hispanic, American Indian or Alaskan Native, non-Hispanic, or More than one race, non-Hispanic; did not receive federal aid in 2015–16	720	40.05	2.55
Unknown if received any aid in 2015–16: White, non-Hispanic, Black, non-Hispanic, Hispanic, American Indian or Alaskan Native, non-Hispanic, or More than one race, non-Hispanic; unknown if received federal aid in 2015–16	530	63.56	1.55

See notes at end of table.

**Table 41. Number located and eligible, weighted response rate, and average nonresponse adjustment factor for B&B:16/20 sample members not located, by model predictor variable: 2020—Continued**

Model predictor variable	Number located and eligible	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20WT2)
Unknown if received any aid in 2015–16: Asian, non-Hispanic or Native Hawaiian or other Pacific Islander, non-Hispanic	130	31.69	3.03
Unknown if received any aid in 2015–16: race/ethnicity is unknown	20	6.08	2.11

<sup>1</sup> The weighted response rate was calculated using the B&B:16/20 base weight.

<sup>2</sup> Control, region, and total enrollment of baccalaureate-granting institution are based on data from the 2015–16 National Postsecondary Student Aid Study sampling frame that was formed from the 2014–15 Integrated Postsecondary Education Data System.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Variable initially grouped by quartile for use in the adjustment model. Collapsing may decrease the number of levels.

<sup>5</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant award categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Located nonresponse adjustments (BB20BWT1 and BB20CWT1).** Table 42 shows the final predictor variables used in the adjustment model for eligible, located sample members who were not considered respondents for analysis weight WTB000 (B&B:16/20 respondents) and the average weight adjustment factor (BB20BWT1) resulting from each predictor variable. To achieve model convergence, the final lower bound was 1 and the final upper bound was 200. The nonresponse adjustment factor for analysis weight WTB000 has the following characteristics:

- minimum: 1.00;
- median: 1.17; and
- maximum: 3.71.

**Table 42. Number of analysis weight B respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20BWT1)
<b>Total</b>	<b>17,160</b>	<b>82.94</b>	<b>1.21</b>
Control of baccalaureate-granting institution <sup>2</sup>			
Public	6,830	83.13	1.19
Private nonprofit	5,310	83.79	1.17
Private for-profit	5,010	76.82	1.28
Region of baccalaureate-granting institution <sup>2,3</sup>			
New England	880	82.87	1.17
Mideast	2,900	81.49	1.23
Great Lakes	2,670	82.78	1.20
Plains	1,380	83.53	1.18
Southeast	4,070	83.31	1.22
Southwest	1,960	86.00	1.16
Rocky Mountains	920	83.70	1.21
Far West	2,230	81.26	1.24
Outlying Areas	150	88.59	1.16
Total enrollment of baccalaureate-granting institution <sup>2,4</sup>			
1–2,907	4,530	82.71	1.22
2,908–10,157	4,260	80.74	1.25
10,158–27,396	4,140	83.98	1.18
27,397 or more	4,220	83.40	1.18
Age as of December 31, 2015			
15–23	9,210	84.16	1.18
24–29	3,520	80.85	1.24
30 or older	4,430	80.46	1.26
Veteran status in 2015–16			
Veteran	1,400	76.10	1.35
Not a veteran	15,760	83.22	1.20
Race/ethnicity			
American Indian or Alaska Native, not Hispanic or Latino	90	93.49	1.06
Asian, not Hispanic or Latino	1,080	81.80	1.21
Black, not Hispanic or Latino	2,130	78.54	1.31
Hispanic or Latino, of any race	2,440	86.36	1.17
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	60	88.37	1.15
White, not Hispanic or Latino	10,670	82.91	1.20
Two or more races, not Hispanic or Latino	590	86.35	1.16
Unknown	100	76.79	1.30
Sex			
Male	6,720	80.46	1.25
Female	10,430	84.77	1.19

See notes at end of table.

**Table 42. Number of analysis weight B respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

<b>Model predictor variable</b>	<b>Number of respondents</b>	<b>Weighted response rate<sup>1</sup></b>	<b>Average nonresponse adjustment factor (BB20BWT1)</b>
Social Security number available			
Available	16,930	83.60	1.21
Not available	220	69.27	1.50
Pell Grant amount received in 2015–16 <sup>5</sup>			
None or not applicable	10,980	82.53	1.21
\$1–\$2,887	2,340	84.13	1.20
\$2,888–\$5,774	2,390	84.03	1.21
\$5,775	1,440	83.47	1.22
Direct Loan amount received in 2015–16 <sup>4</sup>			
None	8,830	81.87	1.22
\$1–\$4,197	2,080	83.64	1.21
\$4,198–\$7,500	4,080	84.68	1.19
\$7,501–\$8,296	150	82.21	1.26
\$8,297 or more	2,010	84.39	1.20
Parent PLUS Loan amount received in 2015–16 <sup>4</sup>			
None	15,740	82.94	1.21
\$1–\$7,050	250	79.85	1.28
\$7,051–\$12,752	240	76.40	1.31
\$12,753–\$20,268	260	89.72	1.11
\$20,269 or more	240	85.49	1.18
Not applicable	430	82.66	1.26
Federal aid status in 2015–16			
Received	11,220	84.30	1.21
Did not receive	5,150	81.38	1.22
Unknown	790	80.39	1.23
Institutional aid status in 2015–16			
Received	7,740	85.21	1.19
Did not receive	7,710	81.45	1.22
Unknown	1,710	81.89	1.21
State aid status in 2015–16			
Received	3,110	84.42	1.19
Did not receive	12,250	82.82	1.21
Unknown	1,800	81.18	1.24
Any aid status in 2015–16			
Received	14,350	84.34	1.20
Did not receive	1,720	85.77	1.19
Unknown	1,090	73.98	1.33

See notes at end of table.

**Table 42. Number of analysis weight B respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

<b>Model predictor variable</b>	<b>Number of respondents</b>	<b>Weighted response rate<sup>1</sup></b>	<b>Average nonresponse adjustment factor (BB20BWT1)</b>
<b>Baccalaureate major</b>			
Humanities	1,840	79.96	1.26
Social/Behavioral sciences	1,770	86.83	1.14
Life sciences	1,790	88.05	1.13
Physical sciences/Mathematics	390	84.25	1.17
Computer/Information sciences	1,310	84.37	1.19
Engineering	1,040	84.66	1.19
Education	1,780	86.26	1.16
Business/Management	1,990	77.41	1.34
Health	2,580	83.36	1.21
Vocational/Technical	100	88.56	1.13
Other technical/professional	2,060	83.87	1.20
Undecided	430	80.08	1.26
Missing/Unknown	90	58.68	1.69
<b>Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion<sup>4</sup></b>			
None	4,740	81.06	1.23
\$1–\$19,500	3,080	84.73	1.19
\$19,501–\$29,500	3,210	85.56	1.17
\$29,501–\$45,000	3,090	82.49	1.22
\$45,001 or more	3,040	81.70	1.23
<b>Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion<sup>4</sup></b>			
None	13,670	81.89	1.22
\$1–\$18,600	860	89.38	1.14
\$18,601–\$35,812	840	86.74	1.17
\$35,813–\$61,500	920	85.28	1.19
\$61,501 or more	860	89.61	1.12
<b>Cumulative amount borrowed in federal student loans, 4 years after BA completion<sup>4</sup></b>			
None	4,210	80.16	1.24
\$1–\$22,500	3,180	84.19	1.20
\$22,501–\$34,147	3,220	84.31	1.19
\$34,148–\$55,614	3,200	83.66	1.21
\$55,615 or more	3,350	85.36	1.20
<b>Amount owed on federal student loans in principal, 4 years after BA completion<sup>4</sup></b>			
None	1,830	82.18	1.23
\$1–\$20,214	2,790	85.26	1.18
\$20,215–\$37,497	2,760	85.11	1.18
\$37,498–\$63,654	2,760	84.41	1.20
\$63,655 or more	2,800	84.16	1.22
Not applicable, did not receive federal student loan(s)	4,210	80.16	1.24

See notes at end of table.

**Table 42. Number of analysis weight B respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20BWT1)
Ratio of amount owed to amount borrowed in federal loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>4</sup>			
0 percent, federal student loan(s) repaid	1,830	82.18	1.23
1–80 percent	2,880	84.37	1.19
81–105 percent	2,970	87.66	1.15
106–116 percent	2,800	85.64	1.19
117 percent or more	2,470	79.91	1.27
Not applicable, did not receive federal student loan(s)	4,210	80.16	1.24
Federal loan default status, 4 years after BA completion			
Yes, defaulted on federal student loan(s)	370	77.61	1.34
No, did not default on federal student loan(s)	12,570	84.57	1.20
Not applicable, did not receive federal student loan(s)	4,210	80.16	1.24
CHAID segments in nonresponse adjustment model			
Baccalaureate major was Humanities or Undecided: White, non-Hispanic or Native Hawaiian or other Pacific Islander, non-Hispanic; received any aid in 2015–16	1,170	79.47	1.28
Baccalaureate major was Humanities or Undecided: White, non-Hispanic or Native Hawaiian or other Pacific Islander, non-Hispanic; did not receive any aid in 2015–16	160	92.10	1.09
Baccalaureate major was Humanities or Undecided: White, non-Hispanic or Native Hawaiian or other Pacific Islander, non-Hispanic; unknown if received any aid in 2015–16	90	67.83	1.48
Baccalaureate major was Humanities or Undecided: American Indian or Alaskan Native, non-Hispanic or More than one race, non-Hispanic; baccalaureate institution was in Mideast, Great Lakes, Plains, or Southwest region	60	99.68	1.00
Baccalaureate major was Humanities or Undecided: American Indian or Alaskan Native, non-Hispanic or More than one race, non-Hispanic; baccalaureate institution was in New England, Southeast, or Far West region	50	87.17	1.13
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic, Asian, non-Hispanic, or Hispanic; Direct Loan amount received in 2015–16 was \$0 or baccalaureate major was Humanities or Undecided,	340	73.31	1.40
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic or Hispanic; Direct Loan amount received in 2015–16 was between \$1 and \$4,197	100	95.56	1.05
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic or Hispanic; Direct Loan amount received in 2015–16 was between \$4,198 and \$8,296	150	81.56	1.26
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic or Hispanic, Direct Loan amount received in 2015–16 was \$8,297 or more	150	90.86	1.12
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: Did receive institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was \$0	710	86.38	1.17
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: did receive institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was between \$1 and \$19,500	480	91.87	1.09

See notes at end of table.

**Table 42. Number of analysis weight B respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20BWT1)
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: did receive institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was between \$19,501 and \$45,000	1,140	86.59	1.17
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: did receive institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was \$45,001 or more	660	77.89	1.29
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: did not receive or unknown if received institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was \$0	1,110	80.27	1.24
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: did not receive or unknown if received institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was between \$1 and \$45,000	2,250	83.02	1.22
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: did not receive or unknown if received institutional aid in 2015–16; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was \$45,001 or more	1,030	86.51	1.18
Baccalaureate major was Social/Behavioral sciences, Life sciences, Education, or Vocational/Technical: sex is female; amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 80 percent or less	920	89.08	1.13
Baccalaureate major was Social/Behavioral sciences, Life sciences, Education, or Vocational/Technical: sex is female; amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was between 81 and 116 percent	1,540	92.19	1.09
Baccalaureate major was Social/Behavioral sciences, Life sciences, Education, or Vocational/Technical: sex is female; amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 117 percent or more or not applicable	1,360	86.86	1.15
Baccalaureate major was Social/Behavioral sciences, Life sciences, Education, or Vocational/Technical; sex is male; Direct Loan amount received in 2015–16 was \$0	820	80.60	1.23
Baccalaureate major was Social/Behavioral sciences, Life sciences, Education, or Vocational/Technical: sex is male; Direct Loan amount received in 2015–16 was between \$1 and \$8,296	670	88.77	1.14
Baccalaureate major was Social/Behavioral sciences, Life sciences, Education, or Vocational/Technical: sex is male; Direct Loan amount received in 2015–16 was \$8,297 or more	110	76.43	1.32
Baccalaureate major was Business/Management: control of baccalaureate-granting institution was public or private nonprofit; received any aid in 2015–16	1,040	79.54	1.27

See notes at end of table.

**Table 42. Number of analysis weight B respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20BWT1)
Baccalaureate major was Business/Management: control of baccalaureate-granting institution was public or private nonprofit; did not receive any aid in 2015–16	170	85.82	1.17
Baccalaureate major was Business/Management: control of baccalaureate-granting institution was public or private nonprofit; unknown if received any aid in 2015–16	110	70.14	1.36
Baccalaureate major was Business/Management: control of baccalaureate-granting institution was private for-profit; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was \$19,500 or less	210	49.59	1.97
Baccalaureate major was Business/Management: control of baccalaureate-granting institution was private for-profit; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was between \$19,501 and \$29,500	80	90.84	1.11
Baccalaureate major was Business/Management: control of baccalaureate-granting institution was private for-profit; cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion was \$29,501 or more	390	77.37	1.33
Baccalaureate major was Missing/Unknown	90	58.68	1.69

<sup>1</sup> The weighted response rate was calculated using the B&B:16/20 base weight.

<sup>2</sup> Control and level, region, and total enrollment of the baccalaureate-granting institution are based on data from the 2015–16 National Student Aid Study sampling frame that was formed from the 2014–15 Integrated Postsecondary Education Data System.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Variable initially grouped by quartile for use in the adjustment model. Collapsing may decrease the number of levels.

<sup>5</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Table 43 shows the final predictor variables used in the weight adjustment model for eligible, located sample members who were not considered respondents for analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents) and the average weight adjustment factor (BB20CWT1) resulting from each predictor variable. To achieve model convergence, the final lower bound was 1 and the final upper bound was 20. The nonresponse adjustment factor for analysis weight WTC000 has the following characteristics:

- minimum: 1.00;
- median: 1.23; and
- maximum: 4.23.



**Table 43. Number of analysis weight C respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20CWT1)
<b>Total</b>	<b>16,310</b>	<b>79.11</b>	<b>1.28</b>
Control of baccalaureate-granting institution <sup>2</sup>			
Public	6,490	79.01	1.26
Private nonprofit	5,100	80.41	1.22
Private for-profit	4,730	73.81	1.35
Region of baccalaureate-granting institution <sup>2,3</sup>			
New England	840	78.78	1.24
Mideast	2,760	77.25	1.31
Great Lakes	2,550	79.62	1.26
Plains	1,320	79.85	1.24
Southeast	3,850	78.57	1.30
Southwest	1,860	82.28	1.21
Rocky Mountains	880	81.12	1.25
Far West	2,120	78.18	1.30
Outlying Areas	150	86.60	1.19
Total enrollment of baccalaureate-granting institution <sup>2,4</sup>			
1–2,907	4,290	79.49	1.28
2,908–10,157	4,060	76.66	1.33
10,158–27,396	3,930	80.16	1.25
27,397 or more	4,030	79.52	1.25
Age as of December 31, 2015			
15–23	8,770	79.90	1.24
24–29	3,380	78.17	1.30
30 or older	4,170	77.03	1.33
Veteran status in 2015–16			
Veteran	1,310	71.20	1.45
Not a veteran	15,000	79.44	1.26
Race/ethnicity			
American Indian or Alaska Native, not Hispanic or Latino	90	88.71	1.12
Asian, not Hispanic or Latino	1,030	77.56	1.30
Black, not Hispanic or Latino	2,020	75.61	1.37
Hispanic or Latino, or any race	2,330	82.91	1.22
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	60	85.33	1.21
White, not Hispanic or Latino	10,130	78.94	1.27
Two or more races, not Hispanic or Latino	570	81.85	1.24
Unknown	90	74.46	1.37
Sex			
Male	6,350	76.27	1.32
Female	9,960	81.21	1.24

See notes at end of table.

**Table 43. Number of analysis weight C respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20CWT1)
Social Security number available			
Available	16,100	79.69	1.27
Not available	210	67.26	1.56
Pell Grant amount received in 2015–16 <sup>5</sup>			
None	10,020	78.56	1.28
\$1–\$2,887	2,240	80.78	1.26
\$2,888–\$5,774	2,280	80.49	1.27
\$5,775	1,370	79.07	1.30
Not applicable	400	80.17	1.24
Direct Loan amount received in 2015–16 <sup>4</sup>			
None	8,390	77.75	1.30
\$1–\$4,197	1,980	80.14	1.27
\$4,198–\$7,500	3,900	81.01	1.25
\$7,501–\$8,296	140	76.80	1.36
\$8,297 or more	1,900	81.66	1.24
Parent PLUS Loan amount received in 2015–16 <sup>4</sup>			
None	14,970	79.09	1.28
\$1–\$7,050	240	77.27	1.32
\$7,051–\$12,752	230	70.46	1.44
\$12,753–\$20,268	250	83.44	1.19
\$20,269 or more	230	82.95	1.22
Not applicable	400	80.17	1.24
Federal aid status in 2015–16			
Received	10,680	80.76	1.27
Did not receive	4,880	76.96	1.29
Unknown	750	77.58	1.29
Institutional aid status in 2015–16			
Received	7,360	81.30	1.25
Did not receive	7,340	77.65	1.30
Unknown	1,620	78.23	1.29
State aid status in 2015–16			
Received	2,970	80.47	1.26
Did not receive	11,640	79.00	1.27
Unknown	1,710	77.55	1.31
Any aid status in 2015–16			
Received	13,650	80.38	1.27
Did not receive	1,630	81.82	1.24
Unknown	1,030	70.90	1.41

See notes at end of table.

**Table 43. Number of analysis weight C respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

<b>Model predictor variable</b>	<b>Number of respondents</b>	<b>Weighted response rate<sup>1</sup></b>	<b>Average nonresponse adjustment factor (BB20CWT1)</b>
<b>Baccalaureate major</b>			
Humanities or Undecided	2,160	76.86	1.32
Social/Behavioral sciences	1,710	83.50	1.19
Life sciences	1,710	84.55	1.17
Physical sciences/Mathematics	370	79.61	1.24
Computer/Information sciences	1,240	80.00	1.27
Engineering	970	80.24	1.27
Education	1,700	81.80	1.22
Business/Management	1,890	73.36	1.44
Health	2,430	79.04	1.28
Vocational/Technical	90	85.10	1.19
Other technical/professional	1,960	80.17	1.26
Missing/Unknown	80	53.82	2.10
<b>Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion<sup>4</sup></b>			
None	4,520	76.89	1.30
\$1–\$19,500	2,930	81.22	1.24
\$19,501–\$29,500	3,070	81.95	1.23
\$29,501–\$45,000	2,940	79.10	1.28
\$45,001 or more	2,860	77.37	1.31
<b>Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion<sup>4</sup></b>			
None	12,980	77.99	1.29
\$1–\$18,600	820	85.06	1.20
\$18,601–\$35,812	800	84.23	1.22
\$35,813–\$61,500	880	82.97	1.23
\$61,501 or more	830	84.92	1.18
<b>Cumulative amount borrowed in federal student loans, 4 years after BA completion<sup>4</sup></b>			
None	4,010	76.10	1.32
\$1–\$22,500	3,030	80.64	1.25
\$22,501–\$34,147	3,060	80.42	1.26
\$34,148–\$55,614	3,030	79.91	1.28
\$55,615 or more	3,180	81.70	1.26
<b>Amount owed on federal student loans in principal, 4 years after BA completion<sup>4</sup></b>			
None	1,750	78.43	1.29
\$1–\$20,214	2,650	81.87	1.23
\$20,215–\$37,497	2,630	80.78	1.26
\$37,498–\$63,654	2,610	81.65	1.25
\$63,655 or more	2,670	79.88	1.30
Not applicable, did not receive federal student loan(s)	4,010	76.10	1.32

See notes at end of table.

**Table 43. Number of analysis weight C respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20CWT1)
Amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion <sup>4</sup>			
0 percent, federal student loan(s) repaid	1,750	78.43	1.29
1–80 percent	2,730	80.34	1.26
81–105 percent	2,810	84.33	1.20
106–116 percent	2,670	81.74	1.24
117 percent or more	2,340	76.46	1.34
Not applicable, did not receive federal student loan(s)	4,010	76.10	1.32
Federal loan default status, 4 years after BA completion			
Yes, defaulted on federal student loan(s)	340	72.41	1.44
No, did not default on federal student loan(s)	11,960	80.92	1.26
Not applicable, did not receive federal student loan(s)	4,010	76.10	1.32
CHAID segments in nonresponse adjustment model			
Baccalaureate major was Humanities or Undecided: White, non-Hispanic; received or did not receive any aid in 2015–16	1,260	77.91	1.31
Baccalaureate major was Humanities or Undecided: White, non-Hispanic; unknown if received any aid in 2015–16	80	63.15	1.62
Baccalaureate major was Humanities or Undecided: American Indian or Alaskan Native, non-Hispanic or More than one race, non-Hispanic; baccalaureate institution was in Mideast, Great Lakes, Plains, or Southwest region	60	99.58	1.01
Baccalaureate major was Humanities or Undecided: American Indian or Alaskan Native, non-Hispanic or More than one race, non-Hispanic; baccalaureate institution was in New England, Southeast, or Far West region	50	86.83	1.15
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic, Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or Unknown race; Direct Loan amount received in 2015–16 was \$0	210	76.07	1.33
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic, Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or Unknown race; Direct Loan amount received in 2015–16 was between \$1 and \$4,197	100	95.24	1.06
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic, Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or Unknown race; Direct Loan amount received in 2015–16 was between \$4,198 and \$8,296	150	77.79	1.31
Baccalaureate major was Humanities or Undecided: Black, non-Hispanic, Hispanic, Native Hawaiian or other Pacific Islander, non-Hispanic, or Unknown race; Direct Loan amount received in 2015–16 was \$8,297 or more	140	88.53	1.14
Baccalaureate major was Humanities or Undecided: Asian, non-Hispanic	120	61.64	1.75
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: not a veteran in 2015–16; received institutional aid in 2015–16	2,670	82.91	1.22
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: not a veteran in 2015–16; did not receive or unknown if received institutional aid in 2015–16	3,700	78.51	1.28
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: veteran in 2015–16; received Direct Loan in 2015–16	190	85.90	1.17

See notes at end of table.

**Table 43. Number of analysis weight C respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20CWT1)
Baccalaureate major was Physical sciences/Mathematics, Computer/Information sciences, Engineering, Health, or Other technical/professional: veteran in 2015–16; did not receive Direct Loan in 2015–16	410	67.07	1.50
Baccalaureate major was Social/Behavioral sciences, Life sciences, or Vocational/Technical: sex is female; not a veteran in 2015–16	2,200	87.02	1.14
Baccalaureate major was Social/Behavioral sciences, Life sciences, or Vocational/Technical: sex is female; veteran in 2015–16	70	69.47	1.42
Baccalaureate major was Social/Behavioral sciences, Life sciences, or Vocational/Technical: sex is male; received or did not receive any aid in 2015–16	1,170	81.78	1.22
Baccalaureate major was Social/Behavioral sciences, Life sciences, or Vocational/Technical: sex is male; unknown if received any aid in 2015–16	90	68.39	1.44
Baccalaureate major was Education: received any aid in 2015–16; Direct Loan amount received in 2015–16 was \$0	550	79.72	1.25
Baccalaureate major was Education: received any aid in 2015–16; Direct Loan amount received in 2015–16 was between \$1 and \$4,197	270	87.38	1.15
Baccalaureate major was Education: received any aid in 2015–16; Direct Loan amount received in 2015–16 was between \$4,198 and \$8,296	490	80.24	1.26
Baccalaureate major was Education: received any aid in 2015–16; Direct Loan amount received in 2015–16 was \$8,297 or more	160	89.99	1.12
Baccalaureate major was Education: did not receive any aid in 2015–16; amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 116 percent or less	50	83.04	1.20
Baccalaureate major was Education: did not receive any aid in 2015–16; amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 117 percent or more or not applicable	110	93.62	1.07
Baccalaureate major was Education: unknown if received any aid in 2015–16; did not receive institutional aid in 2015–16	30	53.36	1.79
Baccalaureate major was Education: unknown if received any aid in 2015–16; unknown if received institutional aid in 2015–16	40	80.24	1.27
Baccalaureate major was Business/Management: Amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after bachelor’s degree, was 80 percent or less; control of baccalaureate institution was public or private nonprofit	410	73.79	1.36
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after bachelor’s degree, was 80 percent or less; control of baccalaureate institution was private for-profit	130	59.03	1.76
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was between 81 and 116 percent; received federal aid in 2015–16	420	78.47	1.30
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was between 81 and 116 percent; did not receive or unknown if received federal aid in 2015–16	110	94.55	1.06

See notes at end of table.

**Table 43. Number of analysis weight C respondents, weighted response rate, and average nonresponse adjustment factor for nonrespondents, by model predictor variable: 2020—Continued**

Model predictor variable	Number of respondents	Weighted response rate <sup>1</sup>	Average nonresponse adjustment factor (BB20CWT1)
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 117 percent or more; baccalaureate institution was in Great Lakes, Plains, or Southeast region	150	59.75	1.78
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 117 percent or more; baccalaureate institution was in New England, Mideast, Rocky Mountains, or Outlying Areas region	60	94.51	1.07
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was 117 percent or more; baccalaureate institution was in Southwest or Far West region	80	87.80	1.17
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was not applicable; control of baccalaureate institution was public or private nonprofit	400	69.92	1.38
Baccalaureate major was Business/Management: amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion, was not applicable; control of baccalaureate institution was private for-profit	120	42.10	2.34
Baccalaureate major was Missing/Unknown: baccalaureate institution was in New England, Great Lakes, Plains, Southeast, Far West, or Outlying Areas region	40	35.87	2.81
Baccalaureate major was Missing/Unknown: baccalaureate institution was in Mideast or Rocky Mountains region	40	72.58	1.33

<sup>1</sup> The weighted response rate was calculated using the B&B:16/20 base weight.

<sup>2</sup> Control and level, region, and total enrollment of the baccalaureate-granting institution are based on data from the 2015–16 National Postsecondary Student Aid Study sampling frame that was formed from the 2014–15 Integrated Postsecondary Education Data System.

<sup>3</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>4</sup> Variable initially grouped by quartile for use in the adjustment model. Collapsing may decrease the number of levels.

<sup>5</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 6.1.3 Poststratification Adjustment

To ensure all weighted samples accurately represent the population of students who received their bachelor's degrees in the 2015–16 academic year, key study outcomes that were available for the B&B:16/20 population were identified. SUDAAN's WTADJUST was used on each of the two B&B:16/20 analysis weights to ensure weighted counts for those outcomes matched known control totals (population totals) for those outcomes. Part of this poststratification

adjustment included trimming adjustments. Specifically, bounds on trimming were set as the median nonresponse-adjusted weight plus or minus three times the interquartile range, where the median and interquartile range were defined by control and level of institution. This adjustment helped increase the precision of characteristics related to the study outcomes.

The control totals were formed from IPEDS counts of baccalaureate recipients for control of the baccalaureate-granting institution, sex, and baccalaureate major. The following variables were used in defining control totals from the IPEDS completion file (C2016\_a):

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

Additionally, control totals were derived from the weighted<sup>36</sup> sums of the B&B:16 cohort (including deceased and ineligible cases) for the following variables:

- 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 Parent 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 number of Direct Loan recipients (through January 2018) by control of institution;
- cumulative Pell Grant amount borrowed (through January 2018) by control of institution; and

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<sup>36</sup> The weighted sums were calculated using the NPSAS:16 student analysis weight, a product of the NPSAS:16 institution sampling weight; NPSAS:16 field-test sampling, poststratification, and nonresponse adjustments; the NPSAS:16 student sampling weight; NPSAS:16 student multiplicity and unknown eligibility adjustments; and nonresponse and poststratification adjustments.

- cumulative Direct Loan amount borrowed (through January 2018) by control of institution.

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

Table 44 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTB000 (B&B:16/20 respondents). To achieve model convergence, the final lower bound on the model adjustment factor was 0.2 and the final upper bound was 8. The poststratification adjustment factor for weight B has the following characteristics:

- minimum: 0.03;
- median: 1.52; and
- maximum: 9.16.

Table 44 also provides the weighted sums for each poststratification category for the final, eligible B&B:16/20 sample.

**Table 44. Control totals, average poststratification adjustment factors, and weighted sums for analysis weight B (B&B:16/20 respondents), by poststratification category: 2020**

<b>Postratification category</b>	<b>Control total</b>	<b>Average poststratification adjustment factor (BB20BWT2)</b>	<b>Weighted sum of eligible respondents</b>
Number of students who received a baccalaureate from a NPSAS-eligible institution <sup>1</sup>	2,041,740	1.66	2,037,970
Number of baccalaureate recipients, by control of institution <sup>1</sup>			
Public	1,299,130	1.42	1,296,410
Private nonprofit	617,610	1.42	616,800
Private for-profit	125,000	2.25	124,760
Number of baccalaureate recipients, by sex <sup>1</sup>			
Male	871,550	1.67	869,090
Female	1,170,190	1.66	1,168,880

See notes at end of table.



**Table 44. Control totals, average poststratification adjustment factors, and weighted sums for analysis weight B (B&B:16/20 respondents), by poststratification category: 2020—Continued**

Postratification category	Control total	Average poststratification adjustment factor (BB20BWT2)	Weighted sum of eligible respondents
Number of baccalaureate recipients, by degree major <sup>1</sup>			
Humanities	249,600	2.00	249,250
Social/behavioral sciences	282,790	1.62	282,030
Life sciences	255,610	1.58	254,790
Physical sciences	32,150	1.47	32,150
Mathematics	26,790	1.93	26,790
Computer/information science	67,380	1.87	67,370
Engineering	125,770	1.38	125,580
Education	93,470	1.39	93,380
Business/management	396,580	1.77	395,610
Health	235,310	1.70	235,200
Vocational/technical	13,870	1.44	13,870
Other technical/professional	262,410	1.61	261,950
Total Direct Loan amount borrowed in the 2015–16 academic year (\$) <sup>2</sup>	6,859,851,130	1.76	6,848,839,640
Number of Direct Loan recipients in the 2015–16 academic year, by control of institution <sup>2</sup>			
Public	571,390	1.49	570,610
Private nonprofit	321,130	1.47	320,540
Private for-profit	60,090	2.47	59,910
Total Pell Grant amount borrowed in the 2015–16 academic year, by control of institution (\$) <sup>2</sup>			
Public	1,577,059,460	1.50	1,575,760,200
Private nonprofit	688,341,710	1.51	687,268,110
Private for-profit	177,856,740	2.50	177,637,810
Total Parent PLUS Loan amount borrowed in the 2015–16 academic year, by control of institution (\$) <sup>2</sup>			
Public	824,207,720	1.42	824,207,720
Private nonprofit	952,179,040	1.44	950,014,690
Private for-profit	43,862,150	2.01	43,862,150
Cumulative number of Pell Grant recipients (through January 2018), by control of institution <sup>2</sup>			
Public	664,750	1.49	663,570
Private nonprofit	281,990	1.51	281,630
Private for-profit	91,880	2.41	91,700
Cumulative number of Direct Loan recipients (through January 2018), by control of institution <sup>2</sup>			
Public	831,610	1.48	830,130
Private nonprofit	416,840	1.45	416,150
Private for-profit	102,570	2.32	102,370

See notes at end of table.

**Table 44. Control totals, average poststratification adjustment factors, and weighted sums for analysis weight B (B&B:16/20 respondents), by poststratification category: 2020—Continued**

Poststratification category	Control total	Average poststratification adjustment factor (BB20BWT2)	Weighted sum of eligible respondents
Cumulative Pell Grant amount borrowed (through January 2018), by control of institution (\$) <sup>2</sup>			
Public	10,495,929,030	1.49	10,480,307,790
Private nonprofit	4,136,625,210	1.51	4,130,156,930
Private for-profit	1,584,435,190	2.41	1,581,842,290
Cumulative Direct Loan amount borrowed (through January 2018), by control of institution (\$) <sup>2</sup>			
Public	21,495,502,690	1.48	21,451,071,110
Private nonprofit	11,454,141,900	1.45	11,435,351,720
Private for-profit	4,236,894,080	2.32	4,230,334,380

<sup>1</sup> Control totals were derived from the Integrated Postsecondary Education Data System (IPEDS) Completions file (C2016\_a). The IPEDS data include approximately 2,340 students at institutions whose control is not defined.

<sup>2</sup> Control totals were derived from the weighted sums of the B&B:16 cohort (including deceased cases). They were weighted using the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) student base weight, a product of the NPSAS:16 institution sampling weight; NPSAS:16 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:16 student sampling weight; and NPSAS:16 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals and weighted sums rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Table 45 shows the control total and the average poststratification adjustment factor (defined as the product of the trim adjustment factor and model adjustment factor) resulting from each poststratification category for analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents). To achieve model convergence, the final lower bound on the model adjustment factor was 0.2 and the final upper bound was 10. The poststratification adjustment factor for weight C has the following characteristics:

- minimum: 0.03;
- median: 1.51; and
- maximum: 9.52.

**Table 45. Control totals, average poststratification adjustment factor, and weighted sums for analysis weight C (B&B:16/20 and B&B:16/17 respondents), by poststratification category: 2020**

Postratification category	Control total	Average poststratification adjustment factor (BB20CWT2)	Weighted sum of eligible respondents
Number of students who completed a baccalaureate from a NPSAS-eligible institution <sup>1</sup>	2,037,970	1.65	2,037,970
Number of baccalaureate recipients, by control of institution <sup>1</sup>			
Public	1,296,410	1.42	1,296,410
Private nonprofit	616,800	1.42	616,800
Private for-profit	124,760	2.21	124,760
Number of baccalaureate recipients, by sex <sup>1</sup>			
Male	869,090	1.66	869,090
Female	1,168,880	1.65	1,168,880
Number of baccalaureate recipients, by degree major <sup>1</sup>			
Humanities	249,250	1.98	249,250
Social/behavioral sciences	282,030	1.61	282,030
Life sciences	254,790	1.57	254,790
Physical sciences	32,150	1.43	32,150
Mathematics	26,790	1.94	26,790
Computer/information science	67,370	1.84	67,370
Engineering	125,580	1.38	125,580
Education	93,380	1.37	93,380
Business/management	395,610	1.77	395,610
Health	235,200	1.67	235,200
Vocational/technical	13,870	1.44	13,870
Other technical/professional	261,950	1.59	261,950
Total Direct Loan amount borrowed in the 2015–16 academic year (\$) <sup>2</sup>	6,848,839,640	1.76	6,848,839,640
Number of Direct Loan recipients in the 2015–16 academic year, by control of institution <sup>2</sup>			
Public	570,610	1.48	570,610
Private nonprofit	320,540	1.48	320,540
Private for-profit	59,910	2.47	59,910
Total Pell Grant amount borrowed in the 2015–16 academic year, by control of institution (\$) <sup>2</sup>			
Public	1,575,760,200	1.50	1,575,760,200
Private nonprofit	687,268,110	1.51	687,268,110
Private for-profit	177,637,810	2.47	177,637,810
Total Parent PLUS Loan amount borrowed in the 2015–16 academic year, by control of institution (\$) <sup>2</sup>			
Public	824,207,720	1.41	824,207,720
Private nonprofit	950,014,690	1.44	950,014,690
Private for-profit	43,862,150	1.98	43,862,150

See notes at end of table.

**Table 45. Control totals, average poststratification adjustment factor, and weighted sums for analysis weight C (B&B:16/20 and B&B:16/17 respondents), by poststratification category: 2020—Continued**

Poststratification category	Control total	Average poststratification adjustment factor (BB20CWT2)	Weighted sum of eligible respondents
Cumulative number of Pell Grant recipients (through January 2018), by control of institution <sup>2</sup>			
Public	663,570	1.49	663,570
Private nonprofit	281,630	1.52	281,630
Private for-profit	91,700	2.37	91,700
Cumulative number of Direct Loan recipients (through January 2018), by control of institution <sup>2</sup>			
Public	830,130	1.48	830,130
Private nonprofit	416,150	1.45	416,150
Private for-profit	102,370	2.29	102,370
Cumulative Pell Grant amount borrowed (through January 2018), by control of institution (\$) <sup>2</sup>			
Public	10,480,307,790	1.49	10,480,307,790
Private nonprofit	4,130,156,930	1.52	4,130,156,930
Private for-profit	1,581,842,290	2.37	1,581,842,290
Cumulative Direct Loan amount borrowed (through January 2018), by control of institution (\$) <sup>2</sup>			
Public	21,451,071,110	1.48	21,451,071,110
Private nonprofit	11,435,351,720	1.45	11,435,351,720
Private for-profit	4,230,334,380	2.29	4,230,334,380

<sup>1</sup> Control totals were derived from the Integrated Postsecondary Education Data System Completions file (C2016\_a).

<sup>2</sup> Control totals were derived from the weighted sums of the B&B:16 cohort (including deceased cases). They were weighted using the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) student base weight, a product of the NPSAS:16 institution sampling weight; NPSAS:16 institution multiplicity, poststratification, and nonresponse adjustments; the NPSAS:16 student sampling weight; and NPSAS:16 student multiplicity and unknown eligibility adjustments.

NOTE: Control totals and weighted sums rounded to the nearest 10.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 6.1.4 Weighting Adjustment Summary and Evaluation

To determine the effect of weighting adjustments, the UWEs and the distribution of weights were analyzed. Additionally, a receiver operating characteristic (ROC) curve (Hanley and McNeil 1982) was created to assess the performance of the nonresponse adjustment models. Specifically, the ROC curve measures how well the model correctly classified individuals with a known response status.<sup>37</sup> The ROC curve was developed in the following manner. The predicted probabilities of response (c) for the ROC curve associated with the nonresponse are the product of the predicted response probabilities obtained at each of the two nonresponse adjustment steps. Note that, for the second nonresponse adjustment (located

<sup>37</sup> For a more detailed example of the ROC curve used in nonresponse modeling, see Iannacchione (2003).

nonresponse adjustments), predicted probabilities were calculated for all nonrespondents, but the models were developed excluding not-located nonrespondents. For any specified probability of response,  $c$ , two proportions were calculated:

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

The ROC curve is created by plotting the true positive rate against the false positive rate for all  $c$ . The area under the curve represents the probability that the nonresponse adjustment models correctly classify individuals. An area of 0.5 under a ROC curve indicates that a correct classification is made 50 percent of the time. This is equivalent to random assignment and would indicate the model provided no predictive benefit. An area of 1.0 indicates that the model always classified individuals correctly. Evaluations of both B&B:16/20 analysis weight adjustment models follow.

**Analysis weight WTB000 (B&B:16/20 respondents)** is the product of the B&B:16/20 base weight and adjustments BB20WT2, BB20BWT1, and BB20BWT2 (defined above):

$$WTB000 = \text{B\&B:16/20 base weight} \times \text{BB20WT2} \times \text{BB20BWT1} \times \text{BB20BWT2}.$$

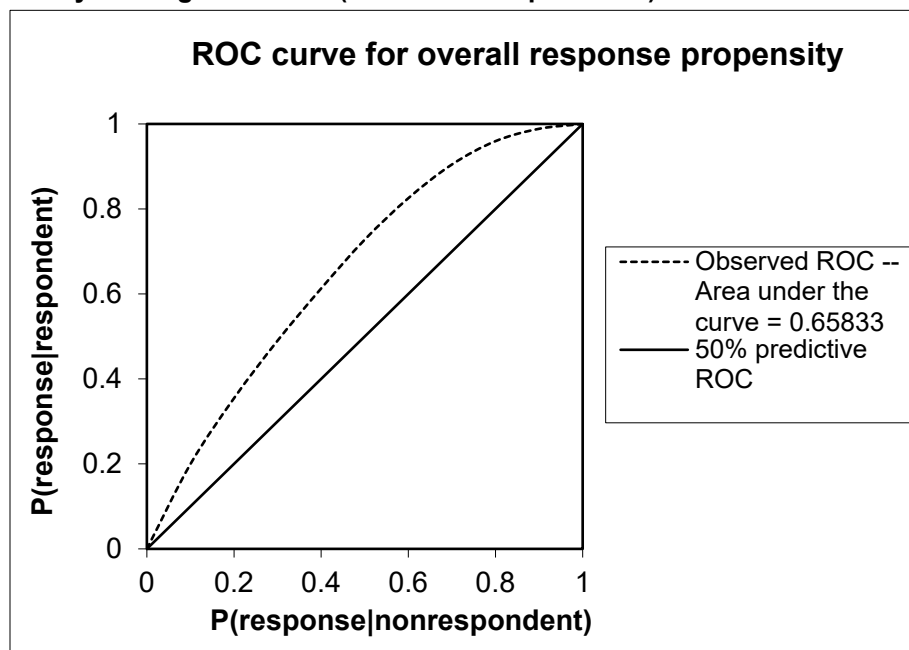
Table 46 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight B. The UWE is 2.33 overall and ranges from 1.60 for students sampled from private nonprofit institutions to 2.31 for students sampled from private for-profit institutions. Thus, regardless of the control of the baccalaureate-granting institution, the inflation on the variance of estimates due to the unequal weighting is relatively small. The sample design and sample sizes were developed to ensure precision of estimates for UWEs in this range.

**Table 46. Student weight distribution and unequal weighting effect (UWE) for analysis weight WTB000 (B&B:16/20 respondents), by control of baccalaureate-granting institution: 2020**

Control of baccalaureate-granting institution	Student weight distribution						UWE <sup>1</sup>
	Minimum	First quartile	Median	Third quartile	Maximum	Mean	
Total	1.41	17.87	75.85	169.28	1,021.97	118.80	2.33
Public	1.41	62.40	161.64	252.71	1,021.97	189.89	1.80
Private nonprofit	1.51	51.54	96.54	149.63	499.41	116.07	1.60
Private for-profit	1.82	7.00	13.36	27.37	168.77	24.88	2.31

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the squared WTB000 weights, divided by the sum of the weights squared. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Figure 6 shows that the area under the ROC curve is approximately 0.66, so the nonresponse adjustment models for weight B predict the correct response status 66 percent of the time. Additionally, the area under the ROC curve can serve as the nonparametric Wilcoxon test, which can determine whether the predicted probability of response is different between respondents and nonrespondents. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are informative predictors of a sample member's overall response propensity.

**Figure 6. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WTB000 (B&B:16/20 respondents): 2020**

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents)** is the product of the B&B:16/20 base weight and adjustments BB20WT2, BB20CWT1, and BB20CWT2 (defined above):

$$WTC000 = \text{B\&B:16/20 base weight} \times \text{BB20WT2} \times \text{BB20CWT1} \times \text{BB20CWT2}$$

Table 47 summarizes the student weight distribution and the variance inflation caused by unequal weighting by the control of the baccalaureate-granting institution for weight C. The UWE is 2.34 overall and ranges from 1.60 for students sampled from private nonprofit institutions to 2.35 for students sampled from private for-profit institutions. Thus, regardless of control of institution, the inflation on the variance of estimates due to the unequal weighting is relatively small. The sample design and sample sizes were developed to ensure precision of estimates for UWEs in this range.

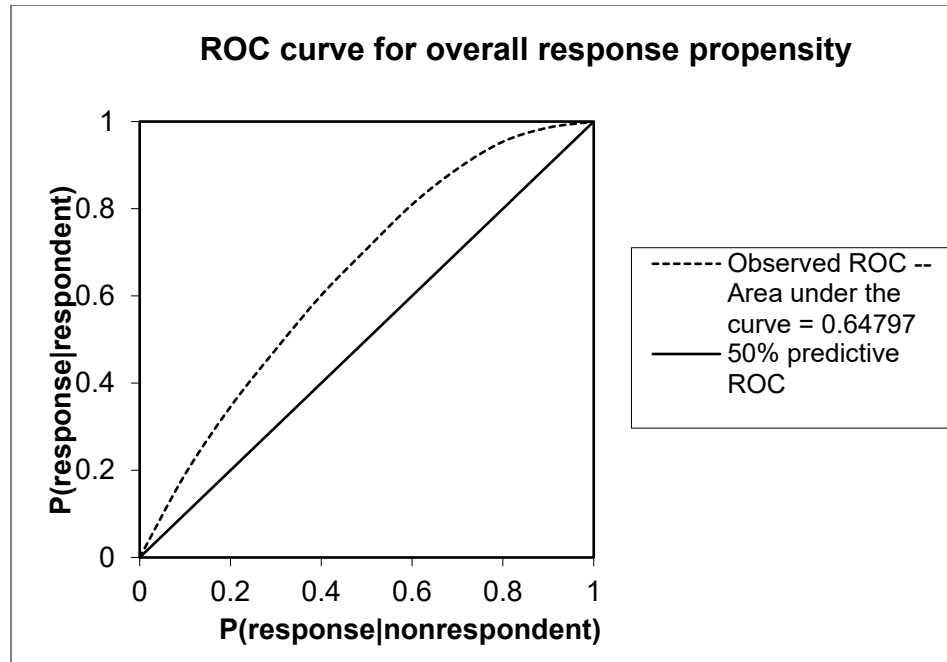
**Table 47. Student weight distribution and unequal weighting effect (UWE) for analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents), by control of baccalaureate-granting institution: 2020**

Control of baccalaureate-granting institution	Student weight distribution						UWE <sup>1</sup>
	Minimum	First quartile	Median	Third quartile	Maximum	Mean	
<b>Total</b>	<b>1.48</b>	<b>18.77</b>	<b>80.15</b>	<b>176.55</b>	<b>1,082.88</b>	<b>124.92</b>	<b>2.34</b>
Public	1.49	65.00	169.34	265.49	1,082.88	199.82	1.81
Private nonprofit	1.48	53.55	100.47	155.90	522.41	121.04	1.60
Private for-profit	1.76	7.42	14.10	29.06	191.09	26.38	2.35

<sup>1</sup> UWE is calculated as the sample size multiplied by the sum of the WTC000 squared weights, divided by the sum of the weights squared. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

Figure 7 shows that the area under the ROC curve is approximately 0.65. In this case, the Wilcoxon test rejects the null hypothesis that the nonresponse models have no predictive ability for response status. Thus, the variables used in the model are informative predictors of a sample member’s overall response propensity.

**Figure 7. Receiver operating characteristic (ROC) curve for sample member response propensity for analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents): 2020**



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

## 6.2 Weighted and Unweighted Response Rates

The overall B&B:16/20 weighted response rate is an estimate of the proportion of the study population directly represented by the respondents. The unweighted response rate is the proportion of the sample represented by respondents. Because the B&B:16/20 study includes a subsample of NPSAS:16 nonrespondents, the overall B&B:16/20 response rate is the product of the NPSAS:16 institution-level response rate times the B&B:16/20 survey response rate. Furthermore, the overall B&B:16/20 response rates can only be estimated directly by institutional characteristics and not student characteristics, given that they are missing for those who do not respond.

The overall B&B:16/20 response rate and its components (unweighted and weighted NPSAS:16 base-year institution response rates, B&B:16/20 eligible sample sizes and number of respondents, and B&B:16/20 student sample response rate) are shown in table 48 by control of the baccalaureate-granting institution. The institution-level response rates were the percentage of institutions that provided sufficient data to select the NPSAS:16 student-level sample; these rates are presented and discussed in the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) data file documentation (Wine, Siegel, and Stollberg 2018, p. 11).



The overall weighted response rate was calculated using the NPSAS:16 base weight, a product of the NPSAS:16 institution sampling weight; NPSAS:16 field-test sampling adjustment, poststratification, and nonresponse adjustments; the NPSAS:16 student sampling weight; and NPSAS:16 student multiplicity and unknown eligibility adjustments. Section 6.3.1 analyzes the potential bias due to unit nonresponse and the effect the weight adjustments had in reducing the bias.

**Table 48. Unweighted and weighted NPSAS:16 base-year institution response rates, B&B:16/20 student sample response rates, and overall response rates, by analysis weight and control of baccalaureate-granting institution: 2020**

Control of baccalaureate-granting institution	NPSAS:16 institution sample		B&B:16/20 student sample				Overall	
	Unweighted response rate	Weighted response rate <sup>1</sup>	Number eligible	Number of respondents	Unweighted response rate	Weighted response rate <sup>2</sup>	Unweighted response rate	Weighted response rate <sup>3</sup>
<b>Weight B (B&amp;B:16/20 respondents)</b>								
<b>Total</b>	<b>88.0</b>	<b>89.6</b>	<b>26,250</b>	<b>17,160</b>	<b>65.4</b>	<b>62.5</b>	<b>57.5</b>	<b>56.0</b>
Public	90.2	90.2	10,770	6,830	63.4	62.1	57.2	56.0
Private nonprofit	87.9	88.2	7,850	5,310	67.7	64.6	59.5	57.0
Private for-profit	83.7	88.1	7,630	5,010	65.8	55.9	55.0	49.2
<b>Weight C (B&amp;B:16/20 and B&amp;B:16/17 respondents)</b>								
<b>Total</b>	<b>88.0</b>	<b>89.6</b>	<b>26,250</b>	<b>16,310</b>	<b>62.2</b>	<b>59.6</b>	<b>54.7</b>	<b>53.4</b>
Public	90.2	90.2	10,770	6,490	60.2	59.1	54.3	53.3
Private nonprofit	87.9	88.2	7,850	5,100	64.9	62.0	57.1	54.7
Private for-profit	83.7	88.1	7,630	4,730	62.0	53.5	51.9	47.1

<sup>1</sup> The weighted response rate was calculated using the 2015–16 National Postsecondary Student Aid Study (NPSAS:16) institution base weight.  
<sup>2</sup> The weighted response rate was calculated using the B&B:16/20 base weight.  
<sup>3</sup> The weighted response rate was calculated as the product of the NPSAS:16 institution weighted response rate and the B&B:16/20 student weighted response rate.  
 NOTE: Control of institution is based on data from the sampling frame that was formed from the 2015–16 Integrated Postsecondary Education Data System. Institution response rates were obtained from the NPSAS:16 data file documentation (Wine, Siegel, and Stollberg 2018, table 3, p. 11). 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, 2020 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### 6.3 Nonresponse Bias Analysis

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

Nonsampling error such as nonresponse is often nonrandom and may result in bias. In this section, nonresponse nonsampling errors are observed by comparing B&B:16/20 nonrespondents and respondents using characteristics known for both groups. Section 6.4.4 discusses measurement of sampling error by variance approximation.

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

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

Relative bias provides a measure of the magnitude of the bias relative to the sample mean and is estimated as  $\widehat{RB}(\bar{y}_R) = \hat{B}(\bar{y}_R)/\hat{\pi}$ . Effect size, as defined by Cohen (1988), is another measure of potential nonresponse bias. For continuous variables, it is computed as the estimated bias divided by the estimated standard deviation:  $\hat{B}(\bar{y}_R)/\hat{\sigma}_y$ . For categorical variables, it is computed as  $\sqrt{\sum_i (p_{0i} - p_{1i})^2 / p_{0i}}$ , where  $p_{0i}$  is the proportion of the eligible 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.

Nonresponse bias analysis was conducted at the unit level and item level for the overall sample and by the control of the baccalaureate-granting institution. These analyses are described in the sections below. The unit-level nonresponse bias analysis results are summarized in tables 49 through 52, and detailed tables are

provided in appendix J. The item-level response rates and nonresponse bias analysis results are also summarized in appendix J.

### **6.3.1 Nonresponse Bias Analysis: Unit Level**

Unit-level bias analysis was conducted for each of the two analytic weights (WTB000 and WTC000) created for B&B:16/20 (weight construction described in section 6.1). As shown in table 48, for each analytic weight, the B&B:16/20 student sample weighted response rate was less than 85 percent (63 and 60 percent, respectively). Therefore, a unit-level nonresponse bias analysis was conducted for each analysis weight, overall and within each institution category for B&B:16/20.

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

- control of baccalaureate-granting institution (categorical, from NPSAS:16);
- region of baccalaureate-granting institution (categorical, from NPSAS:16);
- total enrollment of baccalaureate-granting institution from IPEDS 2015–16 file (categorical, from NPSAS:16);
- age as of December 31, 2015 (categorical, from NPSAS:16);
- veteran status (veteran/not a veteran, from NPSAS:16);
- race/ethnicity (categorical, from NPSAS:16);
- sex (male/female/unknown, from NPSAS:16);
- SSN obtained from baccalaureate-granting institution enrollment list (yes/no, from NPSAS:16);
- Pell Grant status in 2015–16 (categorical, from NPSAS:16);
- Pell Grant amount received in 2015–16 (categorical, from NPSAS:16);
- Direct Loan status in 2015–16 (quartiles, from NPSAS:16);
- Direct Loan amount received in 2015–16 (quartiles, from NPSAS:16);
- Parent PLUS Loan amount received in 2015–16 (quartiles, from NPSAS:16);

- federal aid status (yes/no/unknown) in 2015–16 (from NPSAS:16);
- institution aid status (yes/no/unknown) in 2015–16 (from NPSAS:16);
- state aid status (yes/no/unknown) in 2015–16 (from NPSAS:16);
- any aid status (yes/no/unknown) in 2015–16 (from NPSAS:16);
- baccalaureate major (categorical, from NPSAS:16);
- cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion (categorical, from B&B:16/20);
- cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion (categorical, from B&B:16/20);
- cumulative amount borrowed in federal student loans, 4 years after BA completion (categorical, from B&B:16/20);
- amount owed on federal student loans as percentage of federal student loan amount borrowed, 4 years after BA completion (categorical, from B&B:16/20);
- amount owed on federal student loans in principal, 4 years after BA completion (categorical, from B&B:16/20); and
- currently in default on federal student loans, 4 years after BA completion (yes/no/not applicable, from B&B:16/20).

To thoroughly understand the effects of the nonresponse and poststratification weight adjustment models, nonresponse bias and relative bias were calculated for each value of the variables listed above for both of the analysis weights using (1) the B&B:16/20 base weight and (2) the nonresponse-adjusted weight. A reduction in bias and relative bias after the nonresponse adjustments indicates that the nonresponse models are reducing nonresponse bias. Minimal differences in the bias after poststratification indicate that a little bias was reintroduced due to the poststratification adjustment. Tables 49 and 51 summarize the nonresponse bias analysis performed for the 24 institutional characteristics described above and tables 50 and 52 summarize the changes due strictly due to the poststratification adjustment and the overall changes from all of the weighting adjustments.

**Analysis weight WTB000 (B&B:16/20 respondents) nonresponse bias**

**analysis.** As shown in table 49, the unit-level nonresponse weight adjustment eliminated almost all significant bias on the observable characteristics. The relative bias was calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean and the significant bias indicates differences

between the weighted sample mean and the weighted respondent mean met an alpha level of 0.05. Before the nonresponse weighting adjustment, the percentage of characteristics that were significantly biased for respondents was 73 percent overall. After the nonresponse adjustment, the percentage of characteristics that remained significantly biased was 4 percent overall and ranged from 4 percent for students sampled from public institutions to 9 percent for students sampled from private for-profit institutions.

**Table 49. Summary of unit-level nonresponse bias analysis for analysis weight WTB000 (B&B:16/20 respondents), by control of baccalaureate-granting institution: 2020**

Nonresponse bias statistic <sup>1</sup>	Overall	Public institutions	Private nonprofit institutions	Private for-profit institutions
<b>Before nonresponse weight adjustment<sup>2</sup></b>				
Mean percent relative bias across characteristics	9.74	10.45	10.55	10.44
Median percent relative bias across characteristics	7.99	8.20	8.07	7.47
Percentage of characteristics with significant bias	72.64	65.35	64.00	26.60
Median effect size	0.08	0.09	0.08	0.09
<b>After nonresponse weight adjustment<sup>3</sup></b>				
Mean percent relative bias across characteristics	1.05	2.77	4.22	7.67
Median percent relative bias across characteristics	#	1.32	2.21	4.04
Percentage of characteristics with significant bias	3.77	3.96	7.00	8.51
Median effect size	#	0.02	0.03	0.04

# Rounds to zero.

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

<sup>2</sup> Full-sample means are weighted using the B&B:16/20 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:16/20 base weight, and respondent means are weighted using the B&B:16/20 base weight adjusted for nonresponse.

NOTE: Variables and characteristics that do not meet reporting standards were excluded from calculation of summary statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

As shown in table 50, the overall difference between means for respondents before and after poststratification adjustments was 1.04. For the absolute differences between means for the eligible sample and respondents after poststratification adjustments, the mean difference was 1.11. These differences show a small increase in differences between the weighted sample distributions and the weighted respondent distributions due to the poststratification adjustment, but overall, these are negligible changes.

**Table 50. Summary of unit-level differences between means for analysis weight WTB000 (B&B:16/20 respondents), by control of baccalaureate-granting institution: 2020**

Summary statistics	Overall	Public institutions	Private nonprofit institutions	Private for-profit institutions
<b>Difference between means for respondents before and after poststratification adjustment<sup>1</sup></b>				
Mean absolute difference across characteristics	1.04	1.09	1.11	3.08
Median absolute difference across characteristics	0.57	0.75	0.72	2.61
<b>Difference between means for eligible sample and respondents after poststratification adjustment<sup>2</sup></b>				
Mean absolute difference across characteristics	1.11	1.18	1.21	2.76
Median absolute difference across characteristics	0.68	0.66	0.88	1.84

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:16/20 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:16/20 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:16/20 base weight, and respondent means are weighted using the B&B:16/20 base weight adjusted for nonresponse and poststratification.

NOTE: Variables and characteristics that do not meet reporting standards were excluded from calculation of summary statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

### **Analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents)**

**nonresponse bias analysis.** As shown in table 51, the unit-level nonresponse weighting adjustment eliminated almost all significant bias on the observable characteristics. The relative bias was calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean and the significant bias indicates differences between the weighted sample mean and the weighted respondent mean met an alpha level of 0.05. Before the nonresponse weighting adjustment, the percentage of characteristics that were significantly biased for respondents was 71 percent overall. After the nonresponse adjustment, the percentage of characteristics that remained significantly biased was 4 percent overall and ranged from 5 percent for students sampled from public institutions to 9 percent for students sampled from private nonprofit institutions.

**Table 51. Summary of unit-level nonresponse bias analysis for analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents), by control of baccalaureate-granting institution: 2020**

Nonresponse bias statistic <sup>1</sup>	Overall	Public institutions	Private nonprofit institutions	Private for-profit institutions
<b>Before nonresponse weight adjustment<sup>2</sup></b>				
Mean percent relative bias across characteristics	10.04	10.78	10.76	10.41
Median percent relative bias across characteristics	8.01	9.12	7.91	7.10
Percentage of characteristics with significant bias	71.03	63.37	63.00	27.66
Median effect size	0.09	0.10	0.09	0.08
<b>After nonresponse weight adjustment<sup>3</sup></b>				
Mean percent relative bias across characteristics	0.99	2.91	4.78	6.96
Median percent relative bias across characteristics	#	1.61	2.67	3.73
Percentage of characteristics with significant bias	3.74	4.95	9.00	8.51
Median effect size	#	0.02	0.03	0.05

# Rounds to zero.

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

<sup>2</sup> Full-sample means are weighted using the B&B:16/20 base weight.

<sup>3</sup> Full-sample means are weighted using the B&B:16/20 base weight, and respondent means are weighted using the B&B:16/20 base weight adjusted for nonresponse.

NOTE Variables and characteristics that do not meet reporting standards were excluded from calculation of summary statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

As shown in table 52, the overall difference between means for respondents before and after poststratification adjustments was 1.04. For the absolute differences between means for the eligible sample and respondents after poststratification adjustment, the mean difference was 1.11. These differences show a small increase in differences between the weighted sample distributions and the weighted respondent distributions due to the poststratification adjustment, but overall, these are negligible changes.

**Table 52. Summary of unit-level differences between means for analysis weight WTC000 (B&B:16/20 and B&B:16/17 respondents), by control of baccalaureate-granting institution: 2020**

Summary statistics	Overall	Public institutions	Private nonprofit institutions	Private for-profit institutions
<b>Difference between means for respondents before and after poststratification adjustment<sup>1</sup></b>				
Mean absolute difference across characteristics	1.04	1.08	1.15	3.09
Median absolute difference across characteristics	0.54	0.72	0.73	2.42
<b>Difference between means for eligible sample and respondents after poststratification adjustment<sup>2</sup></b>				
Mean absolute difference across characteristics	1.11	1.19	1.21	2.70
Median absolute difference across characteristics	0.70	0.69	0.85	1.87

<sup>1</sup> Respondent means before poststratification adjustment are weighted using the B&B:16/20 base weight adjusted for nonresponse. Respondent means after poststratification adjustment are weighted using the B&B:16/20 base weight adjusted for nonresponse and poststratification.

<sup>2</sup> Full-sample means are weighted using the B&B:16/20 base weight, and respondent means are weighted using the B&B:16/20 base weight adjusted for nonresponse and poststratification.

NOTE: Variables and characteristics that do not meet reporting standards were excluded from calculation of summary statistics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

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



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

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

A nonresponse bias analysis was conducted for all imputed items<sup>38</sup> and analysis variables with a weighted response rate less than 85 percent overall (137 variables) or by control of institution (15 variables). The procedures and variables used for the item-level nonresponse bias analysis are the same as those used for the unit-level nonresponse bias analysis presented above. A sample member was defined to be an item respondent for a variable if that sample member had data for that variable from any source, including logical imputation. The results of the nonresponse bias analyses varied across all 152 items. Appendix J provides a summary of the item nonresponse bias analysis for each item analyzed.

As shown in appendix K, table K-1, the weighted RRIs for imputed and select analysis variables, for all sample members, ranged from 4.8 percent for *Most recent school, 4 years after BA completion: Title I eligible* (B2TTLIRCNT) to 100 percent for several demographic variables. When a respondent’s eligibility for an item is unknown, that individual is treated as an item nonrespondent. For example, only regular teachers are eligible to answer B2LOGRCNT, so individuals whose teaching status is unknown are considered item nonrespondents.

Imputation procedures (described in section 6.5) were conducted to minimize item nonresponse bias. Although bias after imputation is not directly measurable, it is possible to compare estimates before and after imputation to determine whether the imputation changed the estimates. Changes generally indicate a reduction in bias, whereas no change suggests bias was not reduced or was not present.

The difference between the pre- and postimputation means was computed using the analysis weight, WTB000 (B&B:16/20 respondents). All differences were tested for statistical significance using *t* tests. For categorical variables, the differences between pre- and postimputation means reported in appendix K are size-weighted means of category-level differences.<sup>39</sup> The variable is marked as

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<sup>38</sup> Variables with only logical imputations are not included. Some of the imputed items were used to derive analysis variables but are not analysis variables themselves. For a full list of analysis variables, see appendix I. All nonimputed variables either have no missing data or are derived from variables that are imputed or have no missing data.

<sup>39</sup> The size-weighted means are weighted using the unweighted count of eligible students in each category for the variable.

being significantly different after imputation if a significant difference is identified for any category.

These tests were complemented by effect size calculations. Effect sizes for categorical variables are calculated as  $\sqrt{\sum_i (p_{0i} - p_{1i})^2 / p_{0i}}$ , where  $p_{0i}$  is the proportion of respondents in category  $i$  after imputation and  $p_{1i}$  and is the proportion of respondents in category  $i$  before imputation. For continuous variables, effect size is the difference in pre- and postimputation means, divided by the postimputation standard deviation.

As displayed in appendix K, tables K-2 and K-3, statistically significant differences between the pre- and postimputation means were found for about 46 percent of the continuous variables, and roughly 50 percent of the categorical variables had at least one level that had a significantly different percent.

## 6.4 Variance Estimation

Every estimate calculated from a probability-based sample survey, such as a mean, a percentage, or a regression coefficient, has an associated variance. Hypothesis testing, calculation of confidence intervals, and modeling that uses complex survey data all require the calculation of variances using appropriate methods that account for the sampling design. Complex sample designs like those used for NPSAS:16 and B&B:16/20 result in data that violate the assumptions that are normally required to assess the statistical significance of population estimate comparisons. The variances of the estimates from complex surveys may vary from those that would be expected if the sample were a simple random sample and the observations were independent and identically distributed random variables. To estimate variances of B&B:16/20 statistics, researchers can use either the bootstrap replication procedure or the Taylor series linearization procedure. The analysis strata and PSUs created for the Taylor series procedure are discussed in section 6.4.1. Section 6.4.2 contains a discussion of the replicate weights created for the bootstrap procedure. Use of software packages for proper variance estimation is discussed in section 6.4.3.

The survey design effect for a statistic is defined as the ratio of the design-based variance estimate over the variance estimate that would have been obtained from a simple random sample of the same size. It is often used to measure the effects that sample design features have on the precision of survey estimates. For example, stratification tends to decrease the variance, but multistage sampling and unequal sampling rates usually increase the variance. In addition, weight adjustments for nonresponse (performed to reduce nonresponse bias) and

poststratification increase the variance by increasing the weight variation. Design effects are discussed in section 6.4.4 and appendix L.

### 6.4.1 Taylor Series

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

For stratified multistage surveys, the Taylor series procedure requires variance estimation strata and variance estimation PSUs, defined from the sampling strata and PSUs used in the first stage of sampling (NPSAS:16 for B&B:16/20). 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. When B&B:16/20 strata did not contain two PSUs, the NPSAS:16 variance estimation strata or PSUs were collapsed. The following three rules were used: variance estimation strata were combined with others within the original NPSAS:16 sampling strata; schools sampled with certainty were combined with other schools sampled with certainty; and noncertainty schools were combined with other noncertainty schools. In addition, the sort order that was used for constructing the NPSAS:16 variance estimation strata and PSUs was used for B&B:16/20. 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 files provided two sets of variables for Taylor series variance estimation, and B&B:16/20 also provides two sets of variables. One set of variables is used in software that assumes that the first-stage sampling units (institutions) were sampled with replacement (or with small selection probabilities) and does not account for the finite population corrections (FPCs) at the institution level of sampling. The other set of variables is used in software that assumes sampling of institutions without replacement in the calculation of variances and does account for the FPC. Both sets of variables are provided because not all survey data analysis packages have the option to incorporate the FPC in the variance calculations. When the first-stage units are sampled with very small probabilities, the estimated variances using the with-replacement variance formulas and the without-replacement variance formulas are the same.

The set of variables that assume the first-stage units were sampled without replacement and account for the FPC includes the analysis stratum (BB20FANALSTR), analysis PSU (BB20FANALPSU), the analysis secondary sampling unit (SSU) (BB20FANALSSU), and the count of PSUs in an analysis stratum (BB20PSUCOUNT). The set of variables that assume the first-stage units were sampled with replacement includes the analysis stratum (BB20ANALSTR) and analysis PSU (BB20ANALPSU). Ultimately, BB18FANALSTR equals the institutional variance estimation stratum BB20ANALSTR, and BB20FANALPSU equals BB20ANALPSU. BB20FANALSSU 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 6.4.2), 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 variables, and SSU variables were combined to have at least two SSUs in each PSU and at least two PSUs in each stratum. The same stratum and PSU terms, under with-replacement and without-replacement assumptions, were used for analysis with the cross-sectional weight.

### **6.4.2 Bootstrap Replicate Weights**

Bootstrap replication variance estimation is the same strategy that was used for NPSAS:16. It accounts for the following:

1. stratification at all stages of sampling;
2. unequal weighting;
3. sample clustering;
4. weight adjustments for nonresponse and poststratification;
5. nonlinear statistics and percentages, as well as linear statistics;
6. FPCs at the institution stage of sampling and high sampling rates in some first-stage sampling strata; and
7. the ability to test hypotheses about students based on normal distribution theory by ignoring the FPCs at the student level of sampling.

Commonly applied bootstrap variance estimation techniques account for 1 through 5 listed above; however, to account for 6 and 7 above, a method adapted from Kott (1988) and Flyer (1987) was applied. The following notations are used in the steps delineated below:

- $n_h$  = the number of institutions selected and responding from stratum  $h$ ;
- $\hat{N}_h$  = the frame count of institutions in stratum  $h$ ;
- $m_{hi}$  = the number of SSUs or students selected from institution  $i$  in stratum  $h$ ;
- $n_h^*$  = the bootstrap sample size of PSUs in stratum  $h$  when bootstrap sampling is at the PSU level in stratum  $h$ ;
- $n_{hi}^*$  = the number of times PSU  $hi$  is selected in the bootstrap sample when bootstrap sampling is at the PSU level;
- $m_{hi}^*$  = the bootstrap sample size of SSUs in PSU  $hi$  when bootstrap sampling is at the SSU level in stratum  $h$ ;
- $m_{hij}^*$  = the number of times SSU  $hij$  is selected in the bootstrap sample when bootstrap sampling is at the SSU level; and
- $w_{hijk}^*$  = the additional weight adjustment factor for student  $hijk$  due to bootstrap sampling.

The process of forming replicates and computing replicate weights follows:

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

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

2. Generate a uniform  $(0, 1)$  random number  $R_h$  for each stratum  $h$ .
3. If  $R_h \leq FPC_h$ , form a replicate sample in stratum  $h$  by randomly selecting  $n_h^* = n_h - 1$  institutions with equal probability and with replacement after each selection. When  $n_h^*$  is greater than 1, a PSU may be selected more than once; in essence,  $n_{hi}^*$  may take on values of  $0, 1, \dots, n_h^*$ . 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  $0, 1, \dots, m_{hi}^*$ . Adjust the weights by the factor

$$w_{hijk}^* = m_{hij}^* \frac{m_{hi}}{m_{hi}^*}.$$

5. Repeat steps 3 and 4 in all strata to form one replicate sample.

6. Steps 1 through 5 should then be repeated 200 times to form 200 replicate samples.

This adapted method uses random switching between PSU bootstrap sampling and SSU bootstrap sampling to represent the proper mix of the first- and second-stage variance components when an FPC is applied at the first stage of sampling. It extends the general method described by Flyer (1987) for half-sample replication to a more general bootstrap.

This method incorporated the FPC factor only at the first stage, where sampling fractions were generally high. At the second stage, where the sampling fractions were generally low, the FPC factor was set to 1.00.

The Flyer-Kott method was used to develop a vector of bootstrap sample weights that are available on the restricted-use files. These weights are zero for units not selected in a particular bootstrap sample; weights for other units are inflated for the bootstrap subsampling.

The analysis weights WTB000 and WTC000, defined in section 6.1, are used for computing estimates such as means, percentages, and regression coefficients, and the vector of replicate weights allows for computation of additional estimates for the sole purpose of estimating variances. Assuming  $B$  sets of replicate weights, analysts can estimate the variance of any estimate,  $\hat{\theta}$ , by replicating the estimation procedure for each replicate and computing a simple variance of the replicate estimates as follows:

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

where  $\hat{\theta}_b^*$  is the estimate based on the  $b$ th replicate weight (where  $b = 1$  to the number of replicates) and  $B$  is the total number of sets of replicate weights.

The number of replicate weights was set to 200 to ensure stable variance estimates for a variety of estimates. The nonresponse and poststratification adjustments described in section 6.1 were applied to each replicate to create the 400 replicate weights included on the analysis file (WTB001–WTB200 and WTC001–WTC200), so that the variances could be estimated to account for these weight adjustments. To achieve convergence for some of these models, as with the analysis weight models previously described, the bounds on the adjustment factors had to be loosened or model variables had to be collapsed. However, when necessary, the adjustments were minimal.

### 6.4.3 Software Use for Variance Estimation

Tables 53A–53C summarize the weight and variance estimation variables and how they are used in selected software packages that allow for bootstrap variance estimation (the R survey package, the SAS survey data analysis procedures, Stata, SUDAAN, and WesVar), Taylor series variance estimation with replacement (IBM SPSS complex samples, the R survey package, the SAS survey data analysis procedures, Stata, and SUDAAN), and Taylor series variance estimation without replacement (the R survey package, Stata, and SUDAAN). The provided code is intended for use within respective program statements or procedures and cannot be used alone as shown in the table. The code may need to be revised to be appropriate for a user’s specific data file and coding decisions, and for that reason, the provided code may require editing before it is implemented by some users.

**Table 53-A. Example of relevant variables and code related to the use of analysis weight WTB000 and balanced repeated replicate variance estimation, by statistical software: 2020**

Variables	Software	Code
Analysis weight: WTB000 Replicate weights: WTB001–WTB200	R survey package <sup>1</sup>	<code>mydesign &lt;- svrepdesign(type="BRR", weights=~WTB000,repweights="WTB00[1-200]", combined.weights=FALSE data=mydata)</code>
	SAS survey analysis procedures	<code>VARMETHOD = BRR WEIGHT WTB000; REPWEIGHTS WTB001-WTB200;</code>
	Stata	<code>svyset [pweight=wtb000], brrweight(wtb001 – wtb200) vce(brr) mse</code>
	SUDAAN	<code>DESIGN = BRR WEIGHT WTB000; REPWGT WTB001 -WTB200/ df=199;</code>
	WesVar	<code>Method: BRR Eligible sample weight: WTB000 Replicates: WTB001-WTB200</code>

<sup>1</sup> When using the R survey package (Lumley 2014), “mydesign” can be renamed to any name for an R object to hold the specification of the survey design, and “mydata” is the name of the current dataset.  
NOTE: Table displays example code using analysis weight WTB000 and associated replicate weights WTB001–WTB200. This code may be used with any analysis weight and respective replicate weights. The survey data analysis software specifications are given for the following versions of the software packages: SAS 9.3 and newer, Stata 12 and newer, SUDAAN 11.0.1, and WesVar 4.3 and newer.  
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table 53-B. Example of relevant variables and code related to the use of analysis weight WTB000 and Taylor series variance estimation with replacement, by statistical software: 2020**

Variables		Software	Code
Analysis weight:	WTB000	IBM SPSS complex samples <sup>1</sup>	CSPLAN ANALYSIS
Analysis stratum:	BB20ANALSTR		/PLAN FILE='myfile.csplan'
PSU:	BB20ANALPSU		/PLANVARS ANALYSISWEIGHT=WTB000
			/DESIGN STRATA= BB20ANALSTR CLUSTER BB20ANALPSU /ESTIMATOR TYPE=WR
		R survey package <sup>2</sup>	mydesign<-svydesign(id=~ BB20ANALPSU, strata=~ BB20ANALSTR, weights=~WTB000, data=mydata)
		SAS survey analysis procedures	VARMETHOD = TAYLOR WEIGHT WTB000; STRATA BB20ANALSTR; CLUSTER BB20ANALPSU;
		Stata	svyset bb20analpsu [pweight = wtB000], strata (bb20analstr) vce(linearized)
		SUDAAN	DESIGN = WR WEIGHT WTB000; NEST BB20ANALSTR BB20ANALPSU;

<sup>1</sup> The name "myfile" should be replaced with the desired file name.

<sup>2</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

NOTE: PSU = primary sampling unit. Taylor series variance estimation with replacement does not account for the finite population corrections at the institution level of sampling. Table displays example code using analysis weight WTB000. This code may be used with any analysis weight. The survey data analysis software specifications are given for the following versions of the software packages: IBM SPSS complex samples 20, SAS 9.3 and newer, Stata 12 and newer, and SUDAAN 11.0.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table 53-C. Example of relevant variables and code related to the use of analysis weight WTB000 and Taylor series variance estimation without replacement, by statistical software: 2020**

Variables		Software	Code
Analysis weight:	WTB000	R survey package <sup>1,2</sup>	mydesign <- svydesign(id=~ BB20FANALPSU, strata=~ BB20FANALSTR, weights=~WTB000, fpc=~ BB20PSUCOUNT, data=mydata)
Analysis stratum:	BB20FANALSTR		
PSU:	BB20FANALPSU		
SSU:	BB20FANALSSU		
Count of PSU:	BB20PSUCOUNT		
		Stata	svyset bb20fanalpsu [pweight=wtB000], strata(bb20fanalstr) fpc(bb20psucount)    bb20fanalssu, vce(linearized)
		SUDAAN	DESIGN = WOR WEIGHT WTB000; NEST BB20FANALSTR BB20FANALPSU BB20FANALSSU; TOTCNT BB20PSUCOUNT _minus1__zero_;

<sup>1</sup> When using the R survey package (Lumley 2014), "mydesign" can be renamed to any name for an R object to hold the specification of the survey design, and "mydata" is the name of the current dataset.

<sup>2</sup> For the without-replacement design, the R survey package does not account for the second stage of sampling.

NOTE: PSU = primary sampling unit; SSU = secondary sampling unit. Taylor series variance estimation without replacement accounts for the finite population corrections at the institution level of sampling. Table displays example code using analysis weight WTB000. This code may be used with any analysis weight. The survey data analysis software specifications are given for the following versions of the software packages: Stata 12 and newer and SUDAAN 11.0.1.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



### 6.4.4 Variance Approximation

As discussed above, Taylor series linearization and replication techniques can be used to compute more precise standard errors for data from complex surveys. If statistical analyses are conducted using software packages that assume the data were collected using simple random sampling (i.e., adjustments are not made using the Taylor series or bootstrap replication methods), the standard errors will be calculated under this assumption and will be incorrect. They can be adjusted using the average square root of the design effect (DEFT), although this method is less precise than Taylor series or replication techniques. Those who must perform an analysis of B&B:16/20 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 WTB000 or WTC000 and then use the design effect tables in appendix L to make approximate adjustments to the standard errors of survey statistics computed with the standard software packages that assume simple random sampling designs.

The survey design effect, DEFF, is defined as

$$\text{DEFF}(\hat{\theta}) = \frac{\text{Var}_{design}(\hat{\theta})}{\text{Var}_{srs}(\hat{\theta})},$$

where  $\text{Var}_{design}(\hat{\theta})$  is the sampling variance for an estimate,  $\hat{\theta}$ , given the complex sample design, and  $\text{Var}_{srs}(\hat{\theta})$  is the sampling variance for the estimate,  $\hat{\theta}$ , given a simple random sample.

The square root of the design effect, DEFT, is another measure that analysts can express as the ratio of the standard error for the complex sampling design to the standard error for the simple random sample design, or

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

Most complex multistage sampling designs like NPSAS:16 and B&B:16/20 result in design effects greater than 1.0 (the design-based variance is larger than the simple random sample variance). Appendix L provides design effect estimates for important survey domains to summarize the effects of stratification, multistage sampling, unequal probabilities of selection, and the weight adjustments. These design effects were estimated using SUDAAN and the bootstrap variance estimation procedure described above.

Large design effects imply large standard errors and relatively poor precision. Small design effects imply small standard errors and good precision. In general

terms, a design effect less than 2.0 is low, from 2.0 to 3.0 is moderate, and greater than 3.0 is high. Moderate and high design effects often occur in complex surveys such as B&B:16/20. Unequal weighting causes large design effects and is often due to nonresponse and poststratification adjustments; however, in the 2016/20 Baccalaureate and Beyond Longitudinal Study, the unequal weighting is also due to the sample design and different sampling rates among institution strata, as well as to the different sampling rates among student strata.

As the first step in the approximation of a standard error without Taylor series or bootstrap estimation procedures, analysts should normalize the overall sample weights for packages that use the weighted population size ( $N$ ) in the calculation of standard errors (e.g., SPSS). The normalized weight will sum to the sample size ( $n$ ) and is calculated as

$$\text{Normalized weight} = \text{weight} \times n/N,$$

where  $n$  is the sample size (i.e., the number of cases with a valid main sampling weight) and  $N$  is the sum of weights.

As the second step in the approximation, the standard errors produced by the statistical software, the test statistics, or the sample weight used in analysis can be adjusted to reflect the actual complex design of the study. To adjust the standard error of an estimate, the analyst should multiply the standard error produced by the statistical software by the DEFT. The DEFF and DEFT can be calculated for specific estimates, or they can be the median DEFF and DEFT across several variables or the median DEFF and DEFT for a specific subgroup in the population. Adjusted standard errors can then be used in hypothesis testing, for example, when calculating  $t$  or  $F$  statistics.

A second option is to adjust the  $t$  or  $F$  statistics produced by statistical software packages using unadjusted standard errors (i.e., standard errors produced assuming simple random sampling). To do this, the analyst should first conduct the desired analysis weighted by the normalized weight, then divide a  $t$  statistic by the DEFT, or an  $F$  statistic by the DEFF. A third alternative is to create a new analytic weight variable in the data file by dividing the normalized analytic weight by the DEFF and using the adjusted weight in analyses.

## 6.5 Imputations

Item-level missing data were imputed for most analysis variables included on the primary analysis file (BB20DERIVED\_DATAFILE) on the restricted-use file and available in DataLab. Variables in the source data files were not imputed.

Analysis variables with missing data were imputed following mass imputation procedures described by Krotki, Black, and Creel (2005). First, missing data were filled in for cases where values could be deduced with certainty based upon logical or mathematical relationships among observed variables.<sup>40</sup> Then, the weighted sequential hot deck (WSHD) method was used to replace missing data by imputing plausible values from statistically selected cases with nonmissing values (Cox 1980; Iannacchione 1982).<sup>41</sup> Missing data were imputed separately for each key content area (e.g., employment or teaching).

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

In the second stage of imputation, the missingness was reintroduced to one variable or block at a time, and the missing values were reimputed. This time, all other variables in the key content area that were imputed during the first stage were available in forming the imputation classes. On its own, the WSHD method may not preserve relationships between variables in the dataset. Thus, the WSHD method was implemented with the cyclic  $p$  partition hot deck (Marker, Judkins, and Winglee 2002) technique (cycling), as discussed in Judkins (1997), which is more likely to produce plausible values and maintain variable relationships. For

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<sup>40</sup> An example of logical imputation follows: if a respondent has valid values for the total number of dependents and the number of dependent children but not the number of other dependents, the third value may be calculated as the difference of the first value minus the second value. Likewise, if a respondent has zero total dependents, it may be logically inferred that the student has zero dependent children.

<sup>41</sup> The term *hot deck* refers to an imputation method in which valid values in the current survey dataset are used to impute missing values. The term dates back to when a survey dataset was stored on a deck of computer punch cards; cards from the same dataset were hot or warm to the touch from recent processing.

B&B:16/20, there were five iterations of imputation, which improved quality without significantly slowing down the imputation process.

To reduce error due to imputation, quality checks were performed throughout the imputation process. In particular, the distributions of the observed, imputed, and complete data were compared. Item response rates and distributions (observed and imputed) are shown in appendix K for all 356 imputed variables.

## 6.6 Disclosure Risk Analysis and Avoidance

In addition to removing all direct PII (e.g., names, addresses, SSNs, etc.) to prepare the data files for release, NCES performs a formal disclosure risk analysis. Every effort is made to protect sample members' identities, including performing data perturbation procedures (e.g., "swapping" case data for a small set of cases) on B&B:16/20 data to minimize disclosure risk. All records on all data files (e.g., surveys, institution records, and administrative records) were eligible for swapping.

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

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# Appendix A. Acronyms and Abbreviations



AAPOR	American Association for Public Opinion Research
B&B	Baccalaureate and Beyond Longitudinal Study
B&B:16	2016 Baccalaureate and Beyond Longitudinal Study
B&B:16/17	2016/17 Baccalaureate and Beyond Longitudinal Study
B&B:16/20	2016/20 Baccalaureate and Beyond Longitudinal Study
BA	bachelor's degree
BRR	balanced repeated replicate
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
CATI	Computer-Assisted Telephone Interview
CCD	Common Core of Data
CHAID	chi-square automatic interaction detection
CIP	Classification of Instructional Programs
CMS	case management system
CPS	Central Processing System
DEFF	survey design effect
DEFT	square root of the design effect
DOB	date of birth
ESN	Enhanced Security Network
FAFSA	Free Application for Federal Student Aid
FIPS	Federal Information Processing Standards
FPC	finite population correction
FSA	Federal Student Aid
GIS	geographical information system
GPA	grade point average
IDR	income-driven repayment
IES	Institute of Education Sciences
IMS	integrated management system

IPEDS	Integrated Postsecondary Education Data System
IRR	item response rates
ISO	International Organization for Standardization
NCES	National Center for Education Statistics
NCOA	National Change of Address
NPSAS	National Postsecondary Student Aid Study
NPSAS:16	2015–16 National Postsecondary Student Aid Study
NPSAS:20	2019–20 National Postsecondary Student Aid Study
NPSAS:2000	1999–2000 National Postsecondary Student Aid Study
NSC	National Student Clearinghouse
NSLDS	National Student Loan Data System
O*NET	Occupational Information Network
PII	personally identifiable information
PMR	probability minimum replacement
preK–12	prekindergarten through 12th grade
PSS	Private School Universe Survey
PSU	primary sampling unit
QC	Quality Circle
QCS	quality control supervisor
QE	quality expert
QUEST	quality evaluation system
ROC	receiver operating characteristic
SSL	Secure Sockets Layer-certified
SSN	Social Security number
SSU	secondary sampling unit
STEM	science, technology, engineering, and mathematics
TEACH	Teacher Education Assistance for College and Higher Education

TRP	Technical Review Panel
USPS	United States Postal Service
UWE	unequal weighting effect
VBA	Veterans Benefits Administration
WSHD	weighted sequential hot deck

# Appendix B. Full-Scale Survey Instruments

**BB20AAWRDT**

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

**BB20ASAME**

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

**BB20AWHEN**

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

**BB20AWHYSM**

Based on your responses, it seems you may not be eligible for this study. 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?

**BB20ANPSCH**

Was the bachelor's degree you completed in [BA completion date] from [NPSAS institution]?

- 1 = Yes
- 0 = No, a different school  
School name:

**BB20ABYE**

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-

### **BB20AINTRO**

We are interested in the experiences of bachelor's degree recipients through four years after completing their bachelor's degree.

Before we continue, please note that most questions will focus on your activities **between [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]**. That is from when you completed your bachelor's degree to four years after completing your bachelor's degree.

### **BB20CINTRO**

[If RESP\_MODE = CATI} I'd {else} We'd] like to ask you some questions about any additional education you've had **between [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]**.

### **BB20CPSTGRD**

Have you attended a college, university, or trade school for a degree or certificate **between [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]**?

(Do not include certificates of completion such as those earned through participation in short-term training.)

- 1 = Yes
- 0 = No

### **BB20CPREVSCH1**

Last time we contacted you, you told us you attended [Postbaccalaureate institution 1 reported in B&B:16/17] after completing your bachelor's degree.

Did you attend [Postbaccalaureate institution 1 reported in B&B:16/17] since the last time we contacted you (between [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion])?

- 1 = Yes
- 0 = No

### **BB20CPREVSCH2**

Last time we contacted you, you told us you attended [Postbaccalaureate institution 1 reported in B&B:16/17] and [Postbaccalaureate institution 2 reported in B&B:16/17] after completing your bachelor's degree.

Did you attend either of these schools since the last time we contacted you (between [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion])?

- [Postbaccalaureate institution 1 reported in B&B:16/17]
- [Postbaccalaureate institution 2 reported in B&B:16/17]
- 1 = Yes
- 0 = No

**BB20CSCHPT01**

What other school did you attend between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

(Please provide the name of the other school you attended in the textbox. If you are unable to find a match in the results, please select the “School not listed” option located at the bottom of the listed results.)

- School name:

**BB20CDEG01**

What was the [{if loop > 1 and BB20COTH0x = 1 in previous loop} other] type of degree or certificate you worked on at [Postbaccalaureate institution] between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

(You will have an opportunity to tell us about other degrees and certificates during this time period later.)

- 1 = Undergraduate certificate or diploma, including those leading to a license
- 2 = Associate’s degree
- 3 = Bachelor’s degree
- 4 = Postbaccalaureate certificate
- 5 = Master’s degree
- 6 = Post-master’s certificate
- 7 = Doctoral degree—**professional practice** (e.g., chiropractic, dentistry, law, medicine, optometry, osteopathic medicine, pharmacy, podiatry, or veterinary medicine)
- 8 = Doctoral degree—**research/scholarship** (e.g., Ph.D., Ed.D., or other degrees that require original research or artistic achievement)
- 9 = Doctoral degree—**other** (i.e., any doctoral degree that is not research/scholarship or professional practice)

**BB20CFENR01**

In what month and year did you **first attend** [Postbaccalaureate institution] for your [Degree or certificate type]?

- Month:  
January–December
- Year:  
Before 2015–2020

**BB20CERN01**

As of [4 years after BA completion], did you complete your program of study and receive your [Degree or certificate type] from [Postbaccalaureate institution]?

- 1 = Yes
- 0 = No

**BB20CDGMY01**

In what month and year as of [4 years after BA completion] was your [Degree or certificate type] awarded by [Postbaccalaureate institution]?

- Month:  
January–December
- Year:  
Before 2015–2020

**BB20CLENR01**

As of [4 years after BA completion], in what month and year did you **last attend** [Postbaccalaureate institution] for your [Degree or certificate type]?

Please include any online or remote attendance in your answer.

- Continue to attend [Postbaccalaureate institution] after [4 years after BA completion]
- Month:  
January–December
- Year:  
Before 2015–2020

**BB20CENRCONT01**

Between [{if Postbaccalaureate institution enrollment start date ne -9 (missing) and Postbaccalaureate institution enrollment start date after [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]} [Postbaccalaureate institution enrollment start date] {else} [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]] and [{if Postbaccalaureate institution enrollment end date ne -9 (missing) and Postbaccalaureate institution enrollment end date before 4 years after BA completion} [Postbaccalaureate institution enrollment end date] {else} [4 years after BA completion]], did you ever **temporarily withdraw** or take an **official leave of absence** from [Postbaccalaureate institution] where you were not enrolled and not attending classes?

Do not include typical breaks such as summer or winter break.

[{If (Postbaccalaureate institution enrollment end date ne -9 (missing) and (Postbaccalaureate institution enrollment end date between January 2020 and June 2020)) or (Postbaccalaureate institution enrollment end date = -9 (missing) and (4 years after BA completion between January 2020 and June 2020))}] (If you had a break in attendance from [Postbaccalaureate institution] due to the coronavirus pandemic, please answer "Yes.")]

- 1 = Yes
- 0 = No

**BB20CENMON01**

[{If BB20CENRCONT01 = 1} You just indicated you had a temporary withdrawal or official leave of absence from [Postbaccalaureate institution].]

In which months between [{if Postbaccalaureate institution enrollment start date ne -9 (missing) and Postbaccalaureate institution enrollment start date after [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]} [Postbaccalaureate institution enrollment start date] {else} [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]] and [{if Postbaccalaureate institution enrollment end date ne -9 (missing) and Postbaccalaureate institution enrollment end date before 4 years after BA completion} [Postbaccalaureate institution enrollment end date] {else} [4 years after BA completion]] were you enrolled at [Postbaccalaureate institution] for your [Degree or certificate type]?

- [Calendar displaying months [Postbaccalaureate institution start date]–[Postbaccalaureate institution end date]]



**BB20CCVDBRK01**

Was your break in attendance from [Postbaccalaureate institution] in 2020 **due to the coronavirus pandemic**?

- 1 = Yes
- 0 = No

**BB20CENST01**

For the period of time you attended [Postbaccalaureate institution] for your [Degree or certificate type], 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

**BB20CENRTDG01**

Did you receive a master's degree [if continued to attend [Postbaccalaureate institution] after [4 years after BA completion]] prior to [4 years after BA completion]] from [Postbaccalaureate institution] while enrolled in your [Degree or certificate type] 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

**BB20CENRTMY01**

In what month and year [if continued to attend [Postbaccalaureate institution] after [4 years after BA completion]] prior to [4 years after BA completion]] did you receive your master's degree from [Postbaccalaureate institution]?

- Month:  
January–December
- Year:  
Before 2015–2020

**BB20CONLIN01**

As part of your [Degree or certificate type] at [Postbaccalaureate institution], did you take any courses that were taught primarily online [if continued to attend [Postbaccalaureate institution] after [4 years after BA completion]] prior to [4 years after BA completion]]?

[If (Postbaccalaureate institution enrollment end date ne -9 (missing) and Postbaccalaureate institution enrollment end date between January 2020 and June 2020) or (Postbaccalaureate institution enrollment end date = -9 (missing) and 4 years after BA completion between January 2020 and June 2020)] (Please consider any courses that were taught primarily online, including courses that moved to an online format due to the coronavirus pandemic, in your answer.)]

- 1 = Yes
- 0 = No

How many of your courses that were taught primarily online at [Postbaccalaureate institution] were taught online due to the coronavirus pandemic? Would you say all, some, or none?

- 1 = All
- 2 = Some
- 3 = None

#### **BB20CONLPRG01**

[{If continued to attend [Postbaccalaureate institution] after [4 years after BA completion]} As of [4 years after BA completion]], was {else} Was] your entire [Degree or certificate type] program at [Postbaccalaureate institution] online?

(If you accessed all of your courses for your [Degree or certificate type] over the internet, without in-person instruction, even if your orientation was in-person, **during all semesters or terms** in which you were enrolled, please answer "Yes.")

- 1 = Yes
- 0 = No

#### **BB20CENROLL01**

If your [Degree or certificate type] program at [Postbaccalaureate institution] was not available in an online format, how likely is it that you would have enrolled in an on-campus or in-person program?

- 1 = Not at all likely
- 2 = Somewhat likely
- 3 = Likely
- 4 = Very likely

#### **BB20CPTMAJ01**

[{If continued to attend [Postbaccalaureate institution] after [4 years after BA completion]} As of [4 years after BA completion], what {else} What] was your primary major or field of study for your [Degree or certificate type] at [Postbaccalaureate institution]?

(Please provide your primary major or field of study in the textbox. If you are unable to find a match in the results, please select the "Major not listed" option located at the bottom of the listed results.)

- Major:

#### **BB20CFACS01**

Of the following, which was the **most important** factor to you in choosing your field of postbaccalaureate study [{if BB20CPTMAJ01 ne missing} in [BB20CPTMAJ01]]?

- 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

**BB20CFINAIDG01**

Between [{"if Postbaccalaureate institution enrollment start date ne -9 (missing) and Postbaccalaureate institution enrollment start date after [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]} [Postbaccalaureate institution enrollment start date] {else} [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [{"if Postbaccalaureate institution enrollment end date ne -9 (missing) and Postbaccalaureate institution enrollment end date before 4 years after BA completion} [Postbaccalaureate institution enrollment end date] {else} [4 years after BA completion]], which of the following did you use to pay for your [Degree or certificate type] at [Postbaccalaureate institution]?

(Please check 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

**BB20COTH01**

Other than the [{"if loop = 1 or (loop > 1 and BB20COTH01 ne 1 in previous loop)} degree {else} degrees] you already told [{"if RESP\_MODE = CATI} me {else} us] about, did you **attend [Postbaccalaureate institution] for any additional degrees** between [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

- 1 = Yes
- 0 = No

**BB20CENR01**

You've told [{"if RESP\_MODE = CATI} me {else} us] that you have attended the following school(s) between [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]:

- [Postbaccalaureate institution from loop 1]
- [Postbaccalaureate institution from loop x]

Have you attended **any other schools** for a degree or certificate program between [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

- 1 = Yes
- 0 = No

**BB20CNDGCWK**

At any point between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion], 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

**BB20CRSCWK**

Why did you decide to take non-degree coursework?

(Please check all that apply.)

Needed for current employment

- Needed for career goals
- Needed for educational goals (e.g., graduate school prerequisites, etc.)
- Desired for personal enrichment
- Other reason not listed

**BB20CEXPEVR**

What is the highest level of education you **ever** expect to complete at any school?

- 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
- 9 = Doctoral degree—research/scholarship (e.g., Ph.D., Ed.D., etc.)
- 10 = Professional doctoral degree ( e.g., chiropractic, dentistry, law, medicine, etc.)

**BB20CGRDEXM**

Prior to [4 years after BA completion], did you take any graduate or professional school entrance exams?

- 1 = Yes
- 0 = No

**BB20CTESTS**

Which of the following graduate or professional school entrance exam(s) did you take prior to [4 years after BA completion]?

(Please check all that apply.)

- GRE
- GRE Subject Test
- MCAT
- LSAT
- GMAT
- Other exam(s)

**BB20CABPRVLN**

Did you take out any **private student loans** to pay for your education between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

- 1 = Yes
- 0 = No

**BB20CLNINTRO**

Next, [{if RESP\_MODE = CATI} I {else} we] will be asking you questions about your education loans and loan repayment.

**BB20UGLN**

Next, [{if RESP\_MODE = CATI} 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

**BB20UGLNTYP**

Prior to completing the requirements for your bachelor's degree, did you take out...

- Federal student loans (e.g., Direct/Stafford Loans, Perkins Loans, etc.)
  - Private student loans (e.g., from banks or state-based private organizations, etc.)
  - Other types of loans (e.g., from your school or your state government, etc.)
- 1 = Yes  
0 = No

**BB20CLOANAMT**

Earlier in the survey you told [{if RESP\_MODE = CATI} me {else} us] that you borrowed student loans to pay for your education **between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]**.

Including all federal, private, and other student loans, how much did you borrow for your education between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

Do not include other types of student aid that you do not need to pay back, such as Pell Grants and tuition assistance. Provide the amount you originally borrowed, not the amount you currently owe.

- \$.00

**BB20CPRIVAMT**

How much of that [ {if BB20CLOANAMT ne missing} \$[BB20CLOANAMT] {else} total amount] was in private loans[end helptext]?

Private loans are offered by private lenders, and no federal application forms are needed. Private loans are credit-based and may require a cosigner if the student does not have an established credit history.

- \$.00

Did not have any private student loans between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]

**BB20CPRIVEST**

Please indicate the range for how much of that [ {if BB20CLOANAMT ne missing} \$[BB20CLOANAMT] {else} total amount] was in private loans. Would you say it was...

- 0 = \$0
- 1 = \$1–\$9,999
- 2 = \$10,000–\$19,999
- 3 = \$20,000–\$29,999
- 4 = \$30,000–\$39,999
- 5 = \$40,000–\$49,999
- 6 = \$50,000–\$59,999
- 7 = \$60,000–\$69,999
- 8 = \$70,000–\$79,999
- 9 = \$80,000–\$89,999
- 10 = \$90,000–\$99,999
- 11 = \$100,000 or more
- -1 = Don't know

**BB20CPRIVSTAT1**

Last time we contacted you, you told us you borrowed private student loan(s) to pay for your education. In the next few questions, we would like to know about repayment for **all private student loans**, including those used to pay for your bachelor's degree and any education since your bachelor's degree.

What is the official status of your private student loan(s)?

- 1 = Already paid back in full
- 2 = In repayment
- 3 = Temporarily deferring or in forbearance due to the coronavirus pandemic
- 4 = Temporarily deferring or in forbearance due to [ {if CARES Act forbearance in effect} for reasons other than coronavirus pandemic]
- 5 = In default
- 6 = Loans in different repayment statuses

**BB20CPRIVSTAT2**

You just indicated that you have multiple **private student loans**. Please indicate the status for each of your private student loans.

(Please check all that apply.)

- At least one loan has been paid back in full
- At least one loan in repayment
- At least one loan in deferment or in forbearance due to the coronavirus pandemic

- At least one loan in deferment or in forbearance due to [{if CARES Act forbearance in effect} for reasons other than coronavirus pandemic]
- At least one loan in default

**BB20CPRIVPMT**

How much do you typically pay each month on your **private loans**, even if it is different from your minimum monthly payment?

(Please answer based on any private student loans you have, including loans for your bachelor's degree and for any education since your bachelor's degree.

- \$.00 per month

**BB20CPRIVPEST**

Please indicate the range that best represents the typical amount you pay each month for your **private 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 = \$1,000.00 or more
- -1 = Don't know

**BB20CPRIVMORE**

When repaying student loans, you can pay more than the minimum monthly payment in order to reduce the interest you pay and the total cost of your loan over time.

In the last 12 months, have you paid more than the minimum monthly payment for your **private student loans**?

- 0 = Never paid more than the minimum amount
- 1 = Paid more than the minimum amount 1 or 2 times
- 2 = Paid more than the minimum amount 3 or more times

**BB20CPRIVMISS**

In the last 12 months, have you missed a **private student loan** payment?

- 0 = No, all payments were made on time
- 1 = Yes, missed 1 or 2 payments
- 2 = Yes, missed 3 or more payments

**BB20CPRIVDEF**

Have you ever defaulted on a **private student loan**?

(Default typically occurs when payments are not made for a length of time specified by the lender and arrangements [i.e., deferment or forbearance] have not been made to postpone payments. Students in default are contacted by a collection agency and defaults are often reported on a person's credit history.)

- 1 = Yes
- 0 = No
- -1 = Don't know

**BB20CFEDMORE**

[{If took out federal student loans during survey time frame or took out private student loans during survey time frame or took out other student loans during survey time frame or did not report undergraduate loans in B&B:16/17 or Undergraduate private student loans reported in B&B:16/17 or Postbaccalaureate private student loans reported in B&B:16/17 } Now, we would like to know about repayment for **all federal student loans**, including those used to pay for your bachelor's degree and any education since your bachelor's degree.]

When repaying student loans, you can pay more than the minimum monthly payment in order to reduce the interest you pay and the total cost of your loan over time.

In the last 12 months, how often have you paid more than the minimum monthly payment for your **federal student loans**?

- 0 = Never paid more than the minimum amount
- 1 = Paid more than the minimum amount 1 or 2 times
- 2 = Paid more than the minimum amount 3 or more times

**BB20CFEDMISS**

In the last 12 months, have you missed a **federal student loan** payment?

- 0 = No, all payments were made on time
- 1 = Yes, missed 1 or 2 payments
- 2 = Yes, missed 3 or more payments

**BB20CIDRPART**

Are you enrolled in an income-driven repayment (IDR) plan for your federal student loans?

(An income-driven repayment plan sets your monthly student loan payment at an amount that is intended to be affordable based on your income and family size. These plans include the Revised Pay As You Earn Repayment Plan [REPAYE Plan], Pay As You Earn Repayment Plan [PAYE Plan], Income-Based Repayment Plan [IBR Plan], Income-Contingent Repayment Plan [ICR Plan], and the Income-Sensitive Repayment Plan.)

- 1 = Yes
- 0 = No

**BB20CIDRAWARE**

Have you heard of income-driven repayment (IDR) plans for your federal student loans?

- 1 = Yes
- 0 = No



**BB20CIDRWY**

What are the reasons why you are not enrolled in an income-driven repayment (IDR) plan for your federal student loans?

(Please check all that apply.)

- Did not think I was eligible
- Thought applying would take too much time or effort
- Did not need lower monthly loan payments
- Did not like terms of these plans (i.e., time to repayment)
- Not making payments on my federal loans (i.e., paid off, in deferment, [if CARES Act forbearance in effect] in administrative forbearance due to the coronavirus pandemic, [else] in forbearance,) or in default)
- Any other reason

**BB20CELNPLAN**

Now, [if RESP\_MODE = CATI] I [else] we] have one more question about your student loan repayment. In your answer, please consider all federal, private, and other student loans you have taken out for your education.

In the last 12 months, were any of your student loan payments being paid in whole or in part by family or friends? Do not include any help that you may have received from a spouse or partner.

- 1 = Yes, usually
- 2 = Yes, occasionally
- 0 = No

**BB20DINTRO**

In the next section, [if RESP\_MODE = CATI] I [else] we] would like to ask some questions about your employment between [if B&B:16/17 respondent] 1 year after BA completion [else] BA completion date] and [4 years after BA completion]. That is from when you completed your bachelor's degree to four years after completing your bachelor's degree.

We are interested in all paid employment, including full-time and part-time employment, self-employment, [(if BB20CDEG01 > 3 in any loop) or (Abbreviated survey and BB20CPSTGRD = 1)] graduate assistantships,] and paid internships.

**BB20DCUREMP**

As of [4 years after BA completion], were you employed?

- 1 = Yes, full-time
- 2 = Yes, part-time
- 3 = Yes, both full-time and part-time
- 0 = No

**BB20DANYJOBS**

Did you work for pay at any time **between [if B&B:16/17 respondent] 1 year after BA completion [else] BA completion date] and [4 years after BA completion]?**

- 1 = Yes
- 0 = No

**BB20DNUMEMP**

How many employers did you have between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

(If you were self-employed at any point between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion], include yourself as one employer.)

- | employer(s)

**BB20CLICENSE**

As of [4 years after BA completion], 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

**BB20DPRVEMP01**

Did you continue to work for [ {if 1 employer reported in B&B:16/17} this employer {else} any of these employers] at any time between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

- 1 = [Employer 1 reported in B&B:16/17]
- 2 = [Employer 2 reported in B&B:16/17]
- 3 = [Employer 3 reported in B&B:16/17]
- 4 = [Employer 4 reported in B&B:16/17]
- 5 = [Employer 5 reported in B&B:16/17]
- 6 = [Employer 6 reported in B&B:16/17]
- 7 = [Employer 7 reported in B&B:16/17]
- 99 = Did not work for [ {if 1 employer reported in B&B:16/17} this employer {else} any of these employers] between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]

**BB20DEMPLOY01**

What is the name of another employer you have worked for between [ {if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

- Employer name:
- Check here to indicate self-employment.

**BB20DEMPZIP01**

What is the ZIP code for the primary location where you worked?

(If you do not know the ZIP code you can enter the city name. If you are still unable to find your ZIP code, click “ZIP Code not listed”)

- Employer zip code:
- Location not in the United States or a US territory

**BB20DSTART01**

In what month and year were you first employed by this employer?

- Month:  
January–December
- Year:  
Before 2015–2020

**BB20DEND01**

Between [if [BB20DSTART01] ne missing (-9) and BB20DSTART01 after [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] [BB20DSTART01] {else} [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]] and [4 years after BA completion], in what month and year were you last employed by this employer?

(If you were laid off, as of [4 years after BA completion], please provide the last month and year you worked for this employer. If you were furloughed or temporarily not working, as of [4 years after BA completion], select “Continued to work for this employer after [4 years after BA completion].”)

- Continued to work for this employer after [4 years after BA completion]
- Month:  
January–December
- Year:  
2015–2020

**BB20DWKCONT01**

Between [if BB20DSTART01 before [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] {else if BB20DSTART01 ne ‘Unspecified Date’} [BB20DSTART01] {else} [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]] and [if BB20DEND01 ne ‘Unspecified Date’ and BB20DEND01 before 4 years after BA completion} [BB20DEND01] {else} [4 years after BA completion]], did you have any periods where you were not [if BB20DEMPNAM01 not missing} working for [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} self-employed {else} working for this employer] that lasted longer than one month (i.e., your employment was not one continuous period)?

(If you were furloughed or temporarily not [if BB20DEMPNAM01 not missing} working for [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} self-employed {else} working for this employer] for more than one month, please answer “Yes.”)

- 1 = Yes
- 0 = No

**BB20DWKMON01**

[{if BB20DWKCONT01 = 1} You just indicated having a period of at least one month where you were not [{if BB20DEMPNAM01 not missing} working for [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} self-employed {else} working for this employer].]

**Between** [{if BB20DSTART01 before [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date]} [{if B&B:16/17 respondent} 1 year after BA completion {else} [BA completion date] {else if BB20DSTART01 ne ‘Unspecified Date’} [BB20DSTART01] {else} [{if B&B:16/17 respondent} 1 year after BA completion {else} [BA completion date]}] and [{if BB20DEND01 ne ‘Unspecified Date’ and BB20DEND01 before 4 years after BA completion} [BB20DEND01] {else} [4 years after BA completion]], in which months were you [{if BB20DEMPNAM01 not missing} working for [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} self-employed {else} working for this employer]?

([{if BB20DSTART01 ne ‘Unspecified Date’ and BB20DEND01 ne ‘Unspecified Date’ and BB20DSTART01 not before [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and BB20DEND01 before 4 years after BA completion} The starting and ending month of your [{if BB20DEMPNAM01 not missing} employment at [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} self-employment {else} employment at this employer] have been selected.] Selected months will be shaded blue. If you were [{if BB20DEMPSLF01 = 1} self-employed for any portion of a month {else} working for any portion of a month for this employer], select that month.)

- [Calendar displaying months [Employment start date]–[Employment end date]]

**BB20DCOVWKBK01**

Was your break from [{if BB20DEMPNAM01 ne missing} work at [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} your self-employment {else} work for this employer] in 2020 **due to the coronavirus pandemic?**

- 1 = Yes
- 0 = No

**BB20DEMPLOYA01**

We are interested in learning more about your [{if BB20DEMPNAM01 ne missing} employment with [BB20DEMPNAM01] {else if BB20DEMPSLF01 = 1} self-employment {else} employment with this employer] and how it may have changed.

What was your starting pay before taxes and other deductions (including bonuses, tips, and commissions)?

- \$ |
- 1 = Per hour
- 2 = Per year

What were your starting average hours worked per week?

- | hours

**BB20DEMPLOYC01**

What was your ending pay before taxes and other deductions (including bonuses, tips, and commissions)?

- Starting pay and ending pay were the same
- \$ |
  - 1 = Per hour
  - 2 = Per year

What were your ending average hours worked per week?

- Starting hours per week and ending hours per week were the same.
- | hours

**BB20DOTHJOB01**

Aside from the [if loop = 1} employer {else} employers] you already told [if RESP\_MODE = CATI} me {else} us] about, have you worked for any other employers between [if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

(Answer "Yes" for any additional full-time and part-time employment, self-employment, [if (If BB20CDEG01 > 3 in any loop) or (Abbreviated survey and BB20CPSTGRD = 1)} graduate assistantships,] and paid internships.)

- 1 = Yes
- 0 = No

**INTJBLP01**

Next, [if RESP\_MODE = CATI} I {else} we] have some questions that will focus on your [Employment with employer name].

**BB20DOCCEX01**

When you were last [if Employer name = 'self-employment'} self-employed {else} employed by [Employer name]] [If continued to work for selected employer after [4 years after BA completion]] as of [4 years after BA completion,] what was your job title?

(Please provide the job title you held when you were last [if Employer name = 'self-employment'} self-employed {else} employed by [Employer name]] [If continued to work for selected employer after [4 years after BA completion]]}, as of [4 years after BA completion,] in the textbox. If you are unable to find a match in the results, please select the "Job title not listed" option located at the bottom of the listed results.)

- Job title:

**BB20DJB DUTY01**

As a(n) [Job title at employer name], what were your job duties?

- Job duties:

**BB20DEMP TYP01**

In this job, what type of company or organization did you work for? Was 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

### **BB20D1IND01**

Would you classify the primary industry for [{if Employer name = 'self-employment'} your self-employment {else if Employer name = 'Unspecified Employer'} this employer {else} [Employer name]] as...

- 1 = Education or education services
- 2 = Accommodations and food service
- 3 = Finance and insurance
- 4 = Healthcare, social assistance, or child care
- 5 = Professional, scientific, and technical services
- 6 = Retail sales or retail trade
- 7 = Something else

### **BB20D2IND01**

Would you say the primary industry for [{if Employer name = 'self-employment'} your self-employment {else if Employer name = 'Unspecified Employer'} this employer {else} [Employer name]] was...

- 7 = Administrative and support services
- 8 = Agriculture, forestry, fishing, and hunting
- 9 = Arts, entertainment, and recreation
- 10 = Automotive repair and maintenance
- 11 = Construction
- 12 = Information, motion pictures, Internet, and telecommunications
- 13 = Management of companies or enterprises
- 14 = Manufacturing
- 15 = Mining
- 16 = Personal care services
- 17 = Public administration, government, public safety, and military
- 18 = Real estate, rental and leasing
- 19 = Transportation and warehousing
- 20 = Utilities
- 21 = Waste management and environmental remediation
- 22 = Wholesale trade
- 23 = Other industry not listed

### **BB20DEDIND01**

In which level of the education industry was this job?

- 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

**BB20DJBRESP01**

As a(n) [Job title at employer name], did you...

- Supervise the work of other employees?
- Participate in hiring and/or firing decisions?
- Participate in setting salary rates for other employees?

1 = Yes

0 = No

**BB20DAUTONM01**

Which of the following statements best describes your job as a(n) [Job title at employer name]?

- 1 = Someone else decided what [if RESP\_MODE = CATI} you {else} I] did and how [if RESP\_MODE = CATI} you {else} I] did it
- 2 = Someone decided what [if RESP\_MODE = CATI} you {else} I] did, but [if RESP\_MODE = CATI} you {else} I] decided how [if RESP\_MODE = CATI} you {else} I] did it
- 3 = [if RESP\_MODE = CATI} You {else} I] had the freedom in deciding what [if RESP\_MODE = CATI} you {else} I] did and how [if RESP\_MODE = CATI} you {else} I] did it
- 4 = [If RESP\_MODE = CATI} You were {else} I was] basically [if RESP\_MODE = CATI} your {else} my] own boss

**BB20DCURLTLC01**

In your job as a(n) [Job title at employer name], were you allowed to telecommute or work remotely?

- 1 = Yes, allowed due to the coronavirus pandemic
- 2 = Yes, allowed regardless of the coronavirus pandemic
- 3 = No, it did not make sense for [if RESP\_MODE = CATI} your {else} my] job
- 4 = No, it was possible but not offered for [if RESP\_MODE = CATI} your {else} my] job

**BB20DCURFLX01**

[If not self-employed at employer} Some employers allow their employees flexibility in the hours they work, that is, they do not have to work a set schedule as long as a minimum number of hours are worked in a pay period.]

Would you say your schedule for your [Employer name] was very flexible, somewhat flexible, or not flexible?

- 1 = Very flexible
- 2 = Somewhat flexible
- 3 = Not flexible

**BB20DWHY01**

Why did you work fewer than 30 hours per week as a(n) [Job title at employer name]?

(Please check 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
- Hours reduced due to the coronavirus pandemic
- Other

**BB20DPREFT01**

Would you have preferred to work more than [Number of hours] hours per week as a(n) [Job title at employer name]?

- 1 = Yes
- 0 = No

**BB20DBENANY01**

Did [ {if Employer name = 'self-employment'} your self-employment {else if Employer name = 'Unspecified Employer'} this employer {else} [Employer name]] offer you any of the following benefits?

Do not include salary, hourly pay, bonuses, tips, etc.

- Health insurance
  - Retirement plans
  - Paid vacation, holidays, or sick leave regardless of the coronavirus pandemic
  - New or additional paid leave due to the coronavirus pandemic
- 1 = Yes  
0 = No

**BB20DJBBA01**

Was a bachelor's degree required by [ {if Employer name = 'Unspecified Employer'} this employer {else} [Employer name]] for you to be hired [ {if Job title = 'unspecified job'} in this job {else} as a(n) [Job title]]?

- 1 = Yes
- 0 = No

**BB20DNSF19B01**

Would you say the skills required [ {if Job title = 'unspecified job'} 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

**BB20DNSFPBD01**

Would you say the skills required for [ {if Job title = 'unspecified job'} this job {else} your job as a(n) [Job title]] were closely related, somewhat related, or not related to the skills you obtained in your most recent postbaccalaureate degree or certificate program?

- 1 = Closely related
- 2 = Somewhat related
- 0 = Not related

**BB20DLICOND01**

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 = 'unspecified job'} at your job {else} as a(n) [Job title]]?

- 1 = Yes
- 0 = No



**BB20DCURL01**

Did you consider your job [{if Job title ne 'unspecified job'} as a(n) [Job title]] [{if Employer name ne 'self-employment' and Employer name ne 'Unspecified Employer'} with [Employer name]] to be part of a career you were pursuing?

- 1 = Yes
- 0 = No

**BB20DCHNG01**

For each of the following, please indicate whether or not it was a reason you were no longer [{if Employer name = 'self-employment'} self-employed {else if Employer name = 'Unspecified Employer'} employed by this employer {else} employed by [Employer name]], as of [4 years after BA completion].

- Wanted better salary or benefits
- Wanted a different job in the same or similar field
- Wanted a job in a different field
- Wanted better opportunities (e.g., career advancement or job security, etc.)
- Position was temporary or seasonal
- Laid off, terminated, or contract not renewed for reasons other than coronavirus pandemic
- Relocated to another area
- Care for children, family members, or other dependents
- Personal health reasons
- Laid off, terminated, or contract not renewed due to the coronavirus pandemic
- Other reason(s)
  - 1 = Yes
  - 0 = No

**BB20DSINGLE01**

Which of the following is the most important reason you are no longer [{if Employer name = 'self-employment'} self-employed {else if Employer name = 'Unspecified Employer'} employed by this employer {else} employed by [Employer name]]?

- 1 = Wanted better salary or benefits
- 2 = Wanted a different job in the same or similar field
- 3 = Wanted a job in a different field
- 4 = Wanted better opportunities (e.g., career advancement or job security, etc.)
- 5 = Position was temporary or seasonal
- 6 = Laid off, terminated, or contract not renewed for reasons other than coronavirus pandemic
- 7 = Relocated to another area
- 8 = Care for children, family members, or other dependents
- 9 = Personal health reasons
- 10 = Laid off, terminated, or contract not renewed due to the coronavirus pandemic
- 11 = Other reason(s)

**BB20DJSAT01**

On a scale from 1 to 5, where 1 means "very dissatisfied" and 5 means "very satisfied," please indicate your level of satisfaction or dissatisfaction with each of the following areas of this job.

Please consider your level of satisfaction or dissatisfaction with each area **prior to the coronavirus pandemic** in your response.

- Wages and bonuses

- Benefits
- Opportunities for promotion
- Importance of your work
- Challenge of your work
- Job security
- Ability to balance work and family obligations
- Commute time
  - 1 = 1 (Very dissatisfied)
  - 2 = 2 (Somewhat dissatisfied)
  - 3 = 3 (Neither dissatisfied nor satisfied)
  - 4 = 4 (Somewhat satisfied)
  - 5 = 5 (Very satisfied)

### **BB20DNWINTRO**

Based on the employment dates you entered, it appears that there were [Number of non-working periods] times you were not employed **between** **[if B&B:16/17 respondent] 1 year after BA completion {else} BA completion date] and [4 years after BA completion]**. To better understand the employment paths of graduates, we would like to know what you were doing during each of the time periods you were not employed.

### **BB20DNW01**

What were you doing when you were not working from **[Date of non-working period 1 from current loop]**?

- Looking for work
- Taking a break from work
- Enrolled in school
- Not working due to personal health issues (e.g., disabled, etc.)
- Caring for children
- Caring for other family members
- Laid off, unemployed, or temporarily not working due to the coronavirus pandemic
- Something else
  - 1 = Yes
  - 0 = No

### **BB20DNEGOTIAT**

Between completing your bachelor's degree requirements and [4 years after BA completion], did you ever negotiate salary or benefits with any employer?

- 1 = Yes
- 0 = No
- 2 = Not applicable

### **BB20DNEGOTOUT**

Between completing your bachelor's degree requirements and [4 years after BA completion], did you ever receive a higher salary or additional benefits as a result of your negotiations?

- 1 = Yes
- 0 = No

**BB20DOTHOUT**

The next questions will focus on your job search experiences **between** [if B&B:16/17 respondent] 1 year after BA completion {else} BA completion date] and [4 years after BA completion].

**BB20DEVERLK**

Between [if B&B:16/17 respondent] 1 year after BA completion {else} BA completion date] and [4 years after BA completion], 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 résumés and cover letters, scheduling phone and in-person interviews, etc.)

- 1 = Yes
- 0 = No

**BB20DACTLKWK**

What did you do to look for a job?

(Please check all that apply.)

- [If RESP\_MODE = CATI] Talk {else} Talked] to friends or family members
- [If RESP\_MODE = CATI] Complete {else} Completed] an internship
- [If RESP\_MODE = CATI] Use {else} Used] an employment agency
- [If RESP\_MODE = CATI] Search {else} Searched] online job postings
- [If RESP\_MODE = CATI] Talk {else} Talked] with coworkers or mentors
- [If RESP\_MODE = CATI] Talk {else} Talked] with faculty members or alumni
- [If RESP\_MODE = CATI] Use {else} Used] a professional social networking site or application (e.g., LinkedIn, etc.)
- [If RESP\_MODE = CATI] Something else {else} Other]

**BB20DEMPOTH**

According to the information that you have provided, you were not working for pay at any point between [if B&B:16/17 respondent] 1 year after BA completion {else} BA completion date] and [4 years after BA completion].

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

**BB20DUNCM**

Between [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion], did you receive any of the following?

- Unemployment compensation due to the coronavirus pandemic
  - Unemployment compensation for reasons other than the coronavirus pandemic
  - Disability benefits
- 1 = Yes  
0 = No

**BB20EINTRO**

One of the goals of this study is to learn about experiences of teachers (prekindergarten through 12th grade), even among graduates who did not major in an education field.

The next few questions will be about teaching experiences.

**BB20EANYTCHX**

Have you worked as a teacher at the preK–12 level **between [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?**

(Answer "Yes" only for teaching positions at the preK–12th grade level. Do not include positions such as SAT tutor or piano teacher in a non-school setting, guidance counselor or librarian, graduate teaching assistant, and college or university teacher.)

- 1 = Yes
- 0 = No

**BB20EANYTCH**

**Between [{"if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion],** have you held any of the following teaching positions at the preK–12 level?

(Please check all that apply.)

- Regular classroom teacher (full- or part-time)
- Substitute, short term
- Substitute, long term
- Teacher's aide
- Support teacher
- Itinerant teacher
- Student teacher
- Other teaching position

**BB20EPREPAR**

Have you done anything to prepare for a teaching career at the preK 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

**BB20ECONSID**

Have you ever considered a career in teaching at the preK through 12th grade level?

- 1 = Yes
- 0 = No
- -1 = Don't know

**BB20ETCHAPP**

[{If Prepared for teaching as of B&B:16/17} Last time we contacted you, you said you had prepared for a career in teaching at the preK through 12th grade level. {else if Considered teaching as of B&B:16/17} Last time we contacted you, you said you had considered a career in teaching at the preK through 12th grade level.]

Between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion], did you apply for a preK through 12th grade level teaching position?

- 1 = Yes
- 0 = No

**BB20EOFFER**

Did you receive any offers for teaching positions at the preK through 12th grade level?

- 1 = Yes
- 0 = No

**BB20EHOWPREP**

Which of the following steps have you taken to prepare to teach at the preK through 12th grade 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

**BB20ESTTCLG**

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

**BB20ETHNKINFL**

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

**BB20EFTCHIND**

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

**BB20ETCHPRE**

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
- Work with parents and the community
  - 1 = Yes
  - 0 = No

**BB20ETCHHLP**

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

**BB20ECURCRT**

As of [4 years after BA completion], were you certified to teach at the preK–12 level?

- 1 = Yes
- 0 = No

**BB20ECRTDT**

In what month and year were you first certified to teach?

- Month:
  - January–December
- Year:
  - Before 2015–2020

**BB20ECRTLEVL**

As of [4 years after BA completion], were you certified to teach any grade in...

(Please check all that apply.)

- Early childhood education (preK)
- Kindergarten through 5th grade
- 6th through 8th grade
- 9th through 12th grade

**BB20ELPINTRO**

Next, we're going to collect information on your most recent preK–12 regular classroom teacher position, as of [4 years after BA completion].

**BB20EJBSL**

What is the name of the school where you most recently taught, as of [4 years after BA completion]?

(Please provide the name of the school where you most recently taught in the textbox. If you are unable to find a match in the results, please select the "School not listed" option located at the bottom of the listed results.)

- School name:

**BB20ETCHMOS**

How many months per year did you work in this job?

- Number of months:  
1–12

**BB20EJBGR**

At [Most recent school], what were the lowest and highest grades you taught, as of [4 years after BA completion]?

(If you only taught one grade level, please select the same grade level for both the lowest and highest grades.)

- Lowest grade level:  
Prekindergarten – 12th grade
- Highest grade level:  
Prekindergarten – 12th grade

**BB20EJBFD**

At [Most recent school], what subjects did you teach, as of [4 years after BA completion]?

(Please check all that apply.)

- Prekindergarten
- Elementary education (general curriculum in elementary or middle grades)
- General education in middle or secondary grades
- English or language arts
- Mathematics or computer science
- Natural sciences (e.g., biology, chemistry, etc.)
- Social sciences (e.g., social studies, psychology, etc.)
- Special education
- Other subject(s)

**BB20EJBF2**

What other subjects did you teach, as of [4 years after BA completion]?

(Please check all that apply.)

- Arts and music
- English as a second language (ESL)
- Foreign languages
- Health, physical education
- Vocational, career, or technical education
- Other subject(s)

**BB20ECRTFLD**

As of [4 years after BA completion], were you certified to teach?

(Please check all that apply.)

- Prekindergarten
- Elementary education (general curriculum in elementary or middle grades)
- General education in middle or secondary grades
- English or language arts
- Mathematics or computer science
- Natural sciences (e.g., biology, chemistry, etc.)
- Social sciences (e.g., social studies, psychology, etc.)
- Special education
- Arts and music
- English as a second language (ESL)
- Foreign languages
- Health, physical education
- Vocational, career, or technical education
- Natural sciences (e.g., biology, chemistry, etc.)
- Other subject(s)
- None of the above

**BB20EPRSUPP**

On a scale from 1 to 5, where 1 means “strongly disagree” and 5 means “strongly agree,” please indicate the extent to which you disagree or agree with the following statements about the school leadership where you last worked, as of [4 years after BA completion].

- School leadership supported and encouraged staff.
- School leadership enforced school rules for students’ conduct and backed [ {if RESP\_MODE = CATI} you {else} me] up when [ {if RESP\_MODE = CATI} you {else} I] needed it.
- School leadership communicated to the staff what kind of school they wanted.
  - 1 = 1 (Strongly disagree)
  - 2 = 2 (Disagree)
  - 3 = 3 (Neither disagree nor agree)
  - 4 = 4 (Agree)
  - 5 = 5 (Strongly agree)



**BB20EUNION**

Was your most recent teaching position, as of [4 years after BA completion], represented by a teacher union or other labor union?

- 1 = Yes, and I was a dues-paying member
- 2 = Yes, but I was not a dues-paying member
- 3 = No
- -1 = Don't know

**BB20EADDSCH**

Not including [Most recent school], have you taught at any other schools as a preK–12 regular classroom teacher **between** [if B&B:16/17 respondent] **1 year after BA completion** {else} **BA completion date** and **[4 years after BA completion]**?

- 1 = Yes
- 0 = No

**BB20ESCHNAM01**

What is the name of another school where you taught between [if B&B:16/17 respondent] 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

(Please provide the name of another school where you taught. If you are unable to find a match in the results, please select the “School not listed” option located at the bottom of the listed results.)

- School name:

**BB20ESCHLEVA01**

What is the main reason you left [Previous school 1]?

- 1 = Dissatisfied with [Previous school 1]
- 2 = Found better opportunity at another school
- 3 = Laid off or involuntarily transferred
- 4 = Did not obtain or maintain license
- 5 = Completed a temporary or long term substitute position
- 6 = Personal reasons (e.g., relocation, health or disability, to care for children or other dependents, etc.)
- 7 = Another reason not listed

**BB20ESCHLEVB01**

Were you dissatisfied with...

- Salary and benefits
- Workplace conditions (e.g., class size, grade level or subject area, facilities, classroom resources, school safety, etc.)
- Student discipline and behavior
- Lack of support from students' parents
- Lack of support from school leadership
- Too many non-teaching responsibilities
- Limited opportunities to advance in career
- Other
  - 1 = Yes
  - 0 = No

**BB20ESCHMOR01**

Aside from these schools you already told [{if RESP\_MODE = CATI} me {else} us] about, have you taught as a preK–12 regular classroom teacher at any additional schools between [{if B&B:16/17 respondent} 1 year after BA completion {else} BA completion date] and [4 years after BA completion]?

[Most recent school]

[Previous school 1 - from loop 1]

[Previous school 1 - from loop x]

- 1 = Yes
- 0 = No

**BB20ESTLTCH**

Were you still employed as a preK–12 regular classroom teacher as of [4 years after BA completion]?

(If you were laid off as of [4 years after BA completion], answer "No." If you were furloughed or temporarily not working as a regular classroom teacher as of [4 years after BA completion], answer "Yes.")

- 1 = Yes
- 0 = No

**BB20ETCHSAT**

In your most recent teaching position, as of [4 years after BA completion], were you satisfied with each of the following...

[{If 4 years after BA completion was in or after January 2020} Please consider whether or not you were satisfied with each of the following areas **prior to the coronavirus pandemic** in your response.]

- Student discipline and behavior
  - Class size(s)
  - The support you received from students' parents
  - The support you received from administrators
  - School safety
  - Requirements for standardized testing
  - Non-teaching responsibilities
  - Opportunities to advance in your career
- 1 = Yes  
0 = No

**BB20ETCHLEVA**

[{If left teaching since B&B:16/17} Last time we contacted you, you said you had taught as a regular classroom teacher since completing your bachelor's degree.]

What is the main reason you were no longer teaching as a regular classroom teacher, as of [4 years after BA completion]?

- 1 = Left classroom teaching but remained in education
- 2 = Left to pursue another career or to enroll in school
- 3 = Laid off or involuntarily transferred due to coronavirus pandemic
- 4 = Laid off or involuntarily transferred for reasons other than the coronavirus pandemic
- 5 = Did not obtain or maintain license
- 6 = Dissatisfied with teaching

- 7 = Completed a temporary or long term substitute position
- 8 = Personal reasons (e.g., relocation, health or disability, to care for children or other dependents, etc.)
- 9 = Another reason not listed

**BB20ETCHLEVB**

Were you dissatisfied with...

- Salary and benefits
- Teaching as a career
- Student discipline and behavior
- Lack of support from students' parents
- Lack of support from school leadership
- Too many non-teaching responsibilities
- Limited opportunities to advance in career
- Requirements for standardized testing
- Other
  - 1 = Yes
  - 0 = No

**BB20ETCHLEVC**

You just indicated you left classroom teaching but remained in education. What type of position did you hold after leaving the classroom?

- 1 = District leader (e.g., school district administrator, chief academic officer, etc.)
- 2 = School leader (e.g., principal or school head, assistant principal, etc.)
- 3 = Academic school specialist (e.g., instructional coordinator, academic coach or specialist, etc.)
- 4 = Other school specialist (e.g., librarian, library technician, counselor or school psychologist, etc.)
- 5 = Other position

**BB20ETCHGRT**

Have you heard of the TEACH Grant Program?

- 1 = Yes
- 0 = No

**BB20ELNFRGV**

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

**BB20ELNINCT**

Did knowing about a teacher loan forgiveness program influence you to become a teacher?

- 1 = Yes
- 0 = No

**BB20ELNPRT**

Have you participated, or are you applying to participate, in a loan forgiveness program for teachers?

- 1 = Yes
- 0 = No

**BB20FINTRO**

In this last section, [ {if RESP\_MODE = CATI} I {else} we] have several questions that will help us understand the experiences of individuals from different backgrounds.

**BB20FDOB**

In what month and year were you born?

- Month:  
January–December
- Year:  
1920–2000

**BB20FUSBORN**

Were you born in the United States (including Puerto Rico or another U.S. territory)?

- 1 = Yes
- 0 = No

**BB20FORIGIN**

In what country were you born?

(Please provide the name of the country in which you were born in the textbox. If you are unable to find a match in the results, please select the “Country not listed” option located at the bottom of the listed results.)

- Country Name:

**BB20FCITZN**

Are you a U.S. citizen?

- 1 = Yes
- 2 = No - 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

**BB20FHHWHO**

Which of the following best describes your living situation when you turned 16 years old?

(If your parents or guardians lived in separate households when you turned 16, please answer this question about the parent or guardian with whom you lived most. If you did not live with one parent or guardian more than the other, answer about the parent or guardian who provided more financial support during this time.)

- 1 = Living with one parent or guardian (including stepparent or foster parent)
- 2 = Living with two parents or guardians (including stepparents or foster parents)
- 3 = Not living with parents or guardians

**BB20FENGL**

- Is English your native language?
- 1 = Yes
- 0 = No

**BB20FNATIVE**

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

**BB20FOTLANG**

Do you know any other language(s)?

- 1 = Yes
- 0 = No

**BB20FLANGS**

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 BB20FNATIVE]
- Do not have a second best language

**BB20FLNGCAR**

Have you used [if native language is English ne 1] [Native language] {else if BB20FOTLANG = 1 and BB20FLANGS ne 99 and BB20FLANGS ne -9} [BB20FLANGS] {else} your second language] in any jobs you've held since [if B&B:16/17 respondent] 1 year after BA completion {else} BA completion date]?

- 1 = Yes
- 0 = No

**BB20FMARR**

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

**BB20FMARSMY**

In what month and year were you married?

- Month:  
January–December
- Year:  
Before 1980–2021

**BB20FHCOMP**

With whom do you currently live?

(Please check all that apply.)

- Live alone
- Spouse or domestic partner
- Parents [if BB20FMARR = 2] or spouse's parents [if BB20FMARR = 6] or partner's parents]
- Other relatives (e.g., siblings or grandparents, etc.)
- Children and/or other dependents
- With someone else (e.g., one or more roommates, etc.)

**BB20FFINCON**

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

**BB20FFINWHO**

With whom in your household are you sharing financial responsibilities and decisions?

(Please check all that apply.)

- Spouse or domestic partner
- Boyfriend or girlfriend
- Parent(s)
- Sibling(s)
- Friend(s) or roommate(s)
- Different individual(s) not previously described

**BB20FSEX**

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

**BB20FGENDER**

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:

**BB20FLGBTQ**

Do you think of yourself as...

- 1 = Lesbian or gay, that is, homosexual
- 2 = Straight, that is, heterosexual
- 3 = Bisexual
- 4 = Another sexual orientation  
Please describe:
- 5 = Questioning or unsure  
Please describe:

**BB20FAWARE**

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 = All
  - 2 = Most
  - 3 = Some
  - 0 = None

**BB20FACCEP**

In general, how accepting would you say your most recent workplace is of gay, lesbian, bisexual, and transgender employees?

- 1 = Very accepting
- 2 = Somewhat accepting
- 3 = Not very accepting
- 4 = Not at all accepting

**BB20FDISCRIM**

Discrimination may happen when people are treated unfairly because they are seen as different from others based on a personal characteristic (such as race, sex, sexual orientation, gender identity, national origin, citizenship status, or some other characteristic).

Do you feel that you have ever been **treated unfairly at work** because of your...

- Race or ethnicity
  - Sex
  - Sexual orientation
  - National origin or citizenship status
  - Gender identity
  - Religion
- 1 = Yes  
0 = No

**BB20FMILIT**

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 check all that apply.)

- Veteran
- Active duty
- Reserves
- National Guard
- None of the above

**BB20FREGVT1**

Are you registered to vote?

- 1 = Yes
- 0 = No
- -1 = Don't know

**BB20FPLNREG**

Are you planning to register to vote from Election Day in November 2020?

- 1 = Yes



- 0 = No

**BB20FPLNVT**

Do you plan to vote in the 2020 presidential election [if current date on or after September 4, 2020], have you already voted by absentee ballot or early voting,] or do you not plan to vote?

- 1 = Plan to vote
  - 2 = Already voted by absentee ballot or early voting
  - 0 = Don't plan to vote
- I am not eligible to participate in presidential elections.

**BB20FVTNEL**

Did you vote in the November 2020 presidential election?

- 1 = Yes
  - 0 = No
- I am not eligible to participate in presidential elections.

**BB20FEVRVT**

Have you ever voted in a national, state, or local election?

- 1 = Yes
- 0 = No

**BB20FREGVT2**

Are you registered to vote?

- 1 = Yes
- 0 = No
- -1 = Don't know

**BB20FCOMSRV**

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

**BB20FVLHRS**

In total, about how many hours did you volunteer during the last 12 months?

- |hour(s)

**BB20FDEPS**

Do you [if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] have any dependent children?

(Dependent children need not live with you. Include any children for whom you [if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] provide 50% or more of their financial support.)

- 1 = Yes
- 0 = No

**BB20FDEP2**

How many dependent children do you support financially?

- | dependent children

**BB20FDEPDOB**

In what month and year were your dependent children born?

[Display for each BB20FDEP2]

- Month:  
January–December
- Year:  
Before 1985–2018

**BB20FDEPSAM**

Did you become financially responsible for all of your dependent children at the same time as their births?

(Answer "No" if you started to financially support any of your dependents children at a time other than their birth through adoption, foster care, etc.)

- 1 = Yes
- 0 = No

**BB20FDEPDAT**

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 BB20FDEP2]

- Same as date of birth
- Month:  
January–December
- Year:  
Before 1985–2018

**BB20FDAYCAR**

Are any of your dependent children in child care that you [{if BB20FMARR = 2} or your spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] pay for?

[{If took survey during coronavirus pandemic} If your dependent children are temporarily not in child care due to the coronavirus pandemic, but typically are in child care, answer “Yes.”]

- 1 = Yes
- 0 = No

**BB20FDAYAMT**

How much do you [if BB20FMARR = 2} or your spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] pay each month for child care?

[{If took survey during coronavirus pandemic} If you are not currently paying for child care due to the coronavirus pandemic, provide the amount you paid each month prior to the coronavirus pandemic.]

- \$.00 per month

**BB20FOTHER**

Do you [if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] have any other dependents that you support financially?

(Dependents need not live with you [if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner]. They may include siblings, parents, other relatives, or other individuals for whom you [if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] provide 50% or more of their financial support or are considered to be the primary caregiver.)

- 1 = Yes
- 0 = No

**BB20FOTDNUM**

How many **other dependents** do you support financially?

- | dependent(s)

**BB20FOTDEP**

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

**BB20FHOUSE**

Do you own a home or pay rent?

[{If took survey during coronavirus pandemic} If your mortgage or rent payment is currently suspended due to coronavirus pandemic, select the option(s) that applied prior to the coronavirus pandemic.]

(If someone makes housing payments on your behalf, please select, "None of the above.")

(Please check all that apply.)

- Pay mortgage
- Pay rent
- Own home(s) outright
- None of the above

**BB20FMTGAMT**

How much is your total monthly rent or mortgage payment?

[{If took survey during coronavirus pandemic} If your total rent or mortgage payment is currently suspended or on a revised payment plan due to the coronavirus pandemic, provide your total monthly payment prior to the coronavirus pandemic.]

(Please indicate only the amount that you [{if BB20FMARR = 2} or your spouse {else if BB20FMARR = 6 or BB20FFINSP = 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

**BB20FHOMVAL**

What is the approximate current value of your home(s)?

- \$.00

**BB20FHOMOWE**

About how much do you [{if B22FMARR = 2} or your spouse {else if B22FMARR = 6 or BB20AFINSP = 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

**BB20FCARLOAN**

Do you [{if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] make loan or lease payments for a vehicle (car, truck, motorcycle, or other vehicle)?

[{If took survey during coronavirus pandemic} If your vehicle loan or lease payments are currently suspended due to the coronavirus pandemic, answer "Yes."]

(If someone makes vehicle loan or lease payments on [{if BB20FMARR = 2} behalf of you or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} behalf of you or your partner {else} your behalf], please answer, "No".)

- 1 = Yes
- 0 = No

**BB20FCARAMT**

What is the total amount you [{if BB20FMARR = 2} or your spouse {if BB20FMARR = 6 or BB20FFINSP = 1} or your partner] pay each month for your vehicle loan(s) or lease(s)?

[{If took survey during coronavirus pandemic} If your vehicle loan or lease payments are currently suspended or on a revised payment plan due to the coronavirus pandemic, provide the total amount you paid prior to the coronavirus pandemic.]

- \$.00 per month

**BB20FCVDCOST1**

Please indicate whether or not you had to do any of the following **as a result of the coronavirus pandemic**.

- Worked more than desired

- Worked less than desired
  - Took a job outside of your field of study
  - Delayed enrolling for additional education
  - Took a less desirable job
  - Pursued additional education or training
- 1 = Yes  
0 = No

**BB20FCVDCOST2**

Did you do any of the following as a result of the coronavirus pandemic?

- Delayed buying a home
  - Delayed getting married
  - Delayed having children
  - Took on additional family or child care responsibilities
- 1 = Yes  
0 = No

**BB20FNUMCRD**

Excluding debit or ATM cards, how many credit cards do you have in your own name that are billed to you?

- | card(s)

**BB20FCARYBAL**

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

**BB20FCRDBAL**

What was the total balance on all your credit cards according to your last statements?

- \$.00

**BB20FRETIR**

Do you have a(n)...

- Employer-based retirement savings account (e.g., 401k, 403b, pension, etc.)
  - Non-employer-based retirement savings account (e.g., IRA, etc.)
- 1 = Yes  
0 = No  
-1 = Don't know

**BB20FAMTRET**

Not counting any contributions made on your behalf, in the past 12 months did you contribute to your...

- Employer-based retirement savings account (e.g., 401k, 403b, pension, etc.)
  - Non-employer-based retirement savings account (e.g., IRA, etc.)
- 1 = Yes  
0 = No  
-1 = Don't know

**BB20FFIN2000**

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

**BB20FDONATE**

Since [{if B&B:16/17 respondent} 1 year after BA completion {else} 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

**BB20FINCOM**

What was your income for **calendar year 2019**, prior to taxes and deductions?

(Calendar year 2019 includes January 1, 2019, through December 31, 2019. 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.)

- \$ |.00

**BB20FINEST**

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 2019** (January 1, 2019, through December 31, 2019).

- 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

**BB20FSPEMP**

Did your [{if BB20FMARR = 2} spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} partner] work for pay in calendar year 2019 (January 1, 2019, through December 31, 2019)?

- 1 = Yes
- 0 = No

**BB20FINCSP**

What was your [if BB20FMARR = 2} spouse's {else if BB20FMARR = 6 or BB20FFINSP = 1} partner's] income for calendar year 2019, prior to taxes and deductions?

(Calendar year 2019 includes January 1, 2019, through December 31, 2019. Include all income your [if BB20FMARR = 2} spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} partner] paid taxes on, including work, investment income, or alimony. Do not include any grants or loans your [if BB20FMARR = 2} spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} partner] may have used to pay for school or any money given to your [if BB20FMARR = 2} spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} partner] by family.)

- \$ |

Check here if you were not living with your [if living with partner or BB20AFINSP = 1} partner {else} spouse] in 2019.

**BB20FINSRA**

Please indicate the range that best estimates your [if BB20FMARR = 2} spouse's {else if BB20FMARR = 6 or BB20FFINSP = 1} partner's] income from all sources (including income from work, investments, alimony, etc.), prior to taxes and deductions, in calendar year 2019 (January 1, 2019, through December 31, 2019).

- 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

**BB20FSPLV**

What is the highest level of education that your [if B22FMARR = 2} spouse {else if B22FMARR = 6 or BB20AFINSP = 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 (e.g., Master's, Ph.D., Ed.D., or professional degree such as dentistry, law, medicine, pharmacy, divinity/theology)

**BB20FSPCOL**

Did your [{if BB20FMARR = 2} spouse {else if BB20FMARR = 6 or BB20FFINSP = 1} partner] attend college or graduate school during the 2019-20 school year?

(Answer "Yes" if he or she attended at any time between July 1, 2019, and June 30, 2020.)

- 1 = Yes, full-time
- 2 = Yes, part-time
- 0 = No

**BB20FSPLN**

Did your spouse ever take out any student loans for his or her undergraduate and/or graduate education?

- 1 = Yes
- 0 = No

**BB20FSPAMT**

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

**BB20FSPOWE**

How much of your spouse's student loans are still owed? Would you say all, some, or none?

- 1 = All
- 2 = Some
- 3 = None

**BB20FSPREPMT**

Are your [{if B22FMARR = 6 or BB20AFINSP = 1} partner's {else} spouse's] student loans currently in repayment?

- 1 = Yes
- 0 = No

**BB20FSPLNPY**

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

**BB20FACS16A**

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

**BB20FACS16B**

Are you blind or do you have serious difficulty seeing even when wearing glasses?

- 1 = Yes
- 0 = No

**BB20FACS17A**

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

**BB20FACS17B**

Do you have serious difficulty walking or climbing stairs?

- 1 = Yes
- 0 = No

**BB20FMAIN1**

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

**BB20FMAIN2**

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

**BB20FINCHO**

Next, we have a few questions about how you feel about your undergraduate education. How satisfied are you with the quality of the undergraduate education you received at [NPSAS institution]?

- 1 = Very satisfied
- 2 = Satisfied
- 3 = Neither satisfied nor dissatisfied
- 4 = Dissatisfied
- 5 = Very dissatisfied

**BB20FMAJCHO**

How satisfied are you with your choice of undergraduate major(s) or field(s) of study? [{If RESP\_MODE = CATI} Are you...]?

- 1 = Very satisfied
- 2 = Satisfied
- 3 = Neither satisfied nor dissatisfied
- 4 = Dissatisfied
- 5 = Very dissatisfied

**BB20FCOBEN**

Do you think your **undergraduate** education was worth its financial cost?

- 1 = Yes
- 0 = No

Do you think your **graduate** education was worth its financial cost?

- 1 = Yes
- 0 = No

**BB20FAFFCOST1**

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
  - Took a less desirable job
  - Delayed enrolling for additional education
  - Pursued additional education or training to improve your earning potential
- 1 = Yes  
0 = No

**BB20FAFFCOST2**

Did you do any of the following as a result of your financial cost for your undergraduate [ {if enrolled in graduate degree during survey time frame} and graduate] education?

- Delayed buying a home
  - Delayed getting married
  - Delayed having children
- 1 = Yes  
0 = No

**BB20FSELLPO**

Suppose you [ {if BB20FMARR = 2} and your spouse {if BB20FMARR = 6 or BB20FFINSP = 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

**BB20FSTRESS**

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?

- Yes, due to the coronavirus pandemic
- Yes, for reasons other than the coronavirus pandemic
- No

**BB20FFEDACT**

If a borrower is unable to repay his or her federal student loan, what steps can the government take to collect the debt?

(Please check all that apply.)

- 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

## Appendix C. Technical Review Panel (TRP) Members

Given that the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) was based on study designs and survey items from the 2016/17 Baccalaureate and Beyond Longitudinal Study (B&B:16/17) and 2008/18 Baccalaureate and Beyond Longitudinal Study (B&B:08/18), the National Center for Education Statistics (NCES) did not hold a Technical Review Panel (TRP) meeting for the design of B&B:16/20.

The following lists of TRP members are from the B&B:16/17 full-scale meeting in December 2016 and from the B&B:08/18 full-scale meeting in December 2017.

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# Appendix D. Experimental Pretesting



## Background

Pretesting was conducted by EurekaFacts, LLC on new and revised items for the full-scale 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20). The purpose of the pretesting study<sup>1</sup> was to identify comprehension and usability issues related to these items and to obtain participant feedback on the design of contacting materials. Individuals who participated in pretesting were similar to the sample for the B&B:16/20 full-scale data collection in terms of age range and education level. The pretesting sample included participants in general occupations and prekindergarten to 12th-grade teachers, which allowed testing of study materials related to teaching experiences. The goals of the pretesting study were to

- identify whether participants could provide accurate data across referenced periods (e.g., whether participants could remember their employers and employment periods over the previous 4 years);
- evaluate participants' comprehension of updated terminology in certain questions;
- examine thought processes participants used to arrive at answers to survey questions;
- determine appropriate response categories to questions;
- identify sources of burden and respondent stress;
- observe how participants interacted with the survey;
- elicit feedback on the survey design and ease of survey navigation on all tablet and mobile devices;
- evaluate the appeal of select envelopes, brochures, and infographic designs; and
- assess how likely participants were to respond during data collection based on the appeal of the contacting materials.

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<sup>1</sup> The full experimental pretesting report for this study can be found at <https://omb.report/icr/202012-1850-001/doc/106744301>.

## Study Design and Procedure

A total of 44 individuals who had graduated from college between May 1, 2013, and December 1, 2014, and who had been employed at any time since completing their bachelor's degree participated in six focus groups of 5–10 people each. Of these individuals, roughly three-fourths were female and one-fourth were male. Nearly half (45 percent) of the participants were between the ages of 18 and 29, and the remaining participants were 30 or older. Over half (52 percent) the participants were Black or African American, a quarter (25 percent) were White, five (11 percent) were Two or more races, and three (7 percent) were Asian. One participant identified as “Other” and one preferred not to answer the race and ethnicity question. Three (7 percent) reported Hispanic or Latino ethnicity, which was reported separately from race.

All focus group participants received a \$90 incentive as a token of appreciation for their efforts. EurekaFacts conducted the six 90-minute focus groups at its research facility in Rockville, Maryland, between February 2 and May 9, 2019. Each focus group consisted of two parts: (1) responding to selected questions in a Web survey and (2) a debriefing discussion. Data collection followed standardized policies and procedures to ensure privacy, security, and confidentiality. The focus group sessions were both audio and video recorded with the consent of participants. In addition, during each session, a live coder documented main themes, trends, and patterns raised during the discussion of each topic. Participants completed the survey using tablets provided to them and viewed hard copies of brochures and envelopes.

## Analysis and Coding

After each focus group, the recorded data prepared by the live coder were examined by three reviewers. Two of these reviewers watched the recordings sequentially while reading the data files to ensure all themes, trends, and patterns were captured, adding any missing data. In any situation in which the two reviewers disagreed, they further examined participants' narratives, evaluated their interpretations, and discussed and resolved any lingering discrepancies. The third reviewer conducted a spot check of the data files to ensure quality.

Once the data were cleaned and reviewed, several analysts read through the data and listened to the audio and video recordings to become familiar with the data. Analysts recorded impressions, considered the usefulness of the presented data, and evaluated any potential biases of the moderator. They reviewed the purpose

of the focus group and research questions, documented key information needs, reviewed the data for each focus group topic, and identified themes within and across groups. Next, analysts developed codes based on emerging themes to organize the data. They also discussed any differences between their codes to develop the final coding scheme.

Multiple analysts coded and analyzed the data. They summarized each category of the coding scheme and combined related categories into larger ideas and concepts. Additionally, they assessed each theme's importance based on its severity and frequency of reoccurrence. Credibility was established through analyst triangulation, as multiple analysts cooperated to identify themes and to address differences in interpretation.

## Findings

Key findings included the following:

- Overall, participants indicated that they could provide accurate information across the referenced period of 4 years. However, some participants did have difficulty with information recall related to employment history over this time span. Specifically, those with more jobs during the referenced period indicated a higher level of difficulty recalling details than those with fewer jobs.
- In general, participants did not report issues related to comprehension of terminology.
- Participants used a few strategies to arrive at their answers: memory, estimation, referencing material saved on their devices, and not answering.
- Some participants reported being unsure if gross or net pay should be reported for employment earnings.
- For the most part, participants did not report difficulty selecting the correct response option.
- Participants reported no consistent usability issues while taking the survey on their own devices. They liked that they could go back to previous sections and that the survey prompted them if they entered contradictory information.
- Participants preferred the single sheet brochure format the most, with most participants preferring the information presented as an infographic.

- Overall, participants ranked the top four topics to include in the brochure as study content, privacy and confidentiality information, information on how data will be used, and sponsor of the study.
- Teachers reported a strong likelihood of opening mailed materials with a return address from the National Center for Education Statistics, especially if they received the material at the school where they work.

## Application

Information gathered from the pretesting experiments informed the full-scale B&B:16/20 data collection. For example, to manage recall burden for respondents, the employment section was structured so that respondents could report no more than seven employers, and job-level details were only collected for up to three of those employers. Clarifying instructions were also added to employment earnings questions, indicating whether gross or net pay was indicated. Finally, the findings were considered when designing both the brochures and envelopes that were mailed to sample members.

# Appendix E. Data Elements for Full-Scale Survey

The core data elements used in the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) full-scale survey covered general topics that were organized into six key content areas: eligibility, postbaccalaureate education and training, financial aid, postbaccalaureate employment, teaching, and background. Table E-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 E-1. For example, respondents who indicated being married or living with a partner in a marriage-like relationship at the time of completing the B&B:16/20 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 E-1. Data elements, by content area: 2020**

Content area	Data element
Eligibility	<p>Confirm award of bachelor's degree between July 1, 2015, and June 30, 2017</p> <p>Confirm completion of bachelor's degree requirements between July 1, 2015, and June 30, 2016</p> <p>Confirm completion of bachelor's degree at NPSAS institution</p>
Postbaccalaureate Education and Training	<p>Attended a college, university, or trade school for additional degree or certificate</p> <ul style="list-style-type: none"> <li>• Institutions attended during survey time frame</li> <li>• Degree or certificate type</li> <li>• Date first enrolled for degree or certificate and date completed or last enrolled for degree or certificate</li> <li>• Took a temporary withdrawal or leave of absence</li> <li>• Months enrolled</li> <li>• Break in enrollment due to coronavirus pandemic</li> <li>• Enrollment intensity</li> <li>• Received master's degree en route to doctoral degree</li> <li>• Date received master's degree en route to doctoral degree</li> <li>• Online courses attended</li> <li>• Courses online due to coronavirus pandemic</li> <li>• Degree program entirely online</li> <li>• Likelihood of attendance if program not online</li> <li>• Primary major</li> <li>• Main reason for choosing field of study</li> <li>• How paid for degree or certificate</li> <li>• Attended institution for additional degree or certificate</li> </ul> <p>Nondegree coursework and reasons for enrolling in nondegree coursework</p> <p>Highest degree ever expected</p> <p>Graduate or professional school exam(s) taken</p>
Financial Aid	<p>Type of undergraduate student loans</p> <p>Private student loan amount borrowed since completing bachelor's degree</p> <p>Private student loan debt repayment status, interest rate, and monthly payment(s)</p> <p>Help from family or friends paying back student loans</p>

See notes at end of table.

**Table E-1. Data elements, by content area: 2020—Continued**

<b>Content area</b>	<b>Data element</b>
Postbaccalaureate Employment	<p>Worked for pay or held a paid internship since completing bachelor's degree</p> <p>Held an active professional certification or state or industry license</p> <p>Number of employer(s) during survey time frame</p> <p>Employer information for each employer during survey time frame:</p> <ul style="list-style-type: none"> <li>• Employer name</li> <li>• Start and end dates of employment</li> <li>• Took a break in employment</li> <li>• Months worked at employer</li> <li>• Break in work due to coronavirus pandemic</li> <li>• Starting and ending earnings</li> <li>• Starting and ending hours worked</li> </ul> <p>For each job title at up to three selected employers during survey time frame:</p> <ul style="list-style-type: none"> <li>• Job title</li> <li>• Type of company or organization</li> <li>• Primary industry of employer</li> <li>• Job responsibilities</li> <li>• Level of autonomy</li> <li>• Allowed to telecommute</li> <li>• Flexibility of schedule</li> <li>• Reasons did not work at least 30 hours per week</li> <li>• Would have preferred to work at least 30 hours per week</li> <li>• Employer offered benefits</li> <li>• Bachelor's degree required to be hired for job</li> <li>• Job related to bachelor's degree major or postbaccalaureate education field of study</li> <li>• Professional certification or license required to do job</li> <li>• Job considered part of career</li> <li>• Reasons no longer employed by employer</li> <li>• Job satisfaction</li> </ul> <p>Activities while not working</p> <p>Negotiated salary or benefits</p> <p>Months actively looked for work during survey time frame</p> <p>Job search activities (e.g., used employment agency, searched online job postings)</p> <p>Received unemployment or disability compensation</p>

See notes at end of table.

**Table E-1. Data elements, by content area: 2020—Continued**

Content area	Data element
Teaching	<p>Type of teacher</p> <p>Formal preparation to teach at preK–12 level</p> <p>Considered teaching at preK–12 level</p> <p>Applying for teaching positions / received offers</p> <p>Teacher preparation (college/university program, online program, alternate route, and student teaching)</p> <p>Participated in formal teacher induction/mentor program in first teaching job</p> <p>Factors influenced decision to become a preK–12 teacher (preK–12 teachers only)</p> <p>Felt adequately prepared / received help from school or school district</p> <p>Teaching certification and subject area(s) of certification (preK–12 teachers only)</p> <p>Most recent teaching job:</p> <ul style="list-style-type: none"> <li>• school name</li> <li>• months taught</li> <li>• subjects taught</li> <li>• school leadership information</li> <li>• level of support</li> <li>• union representation</li> </ul> <p>Previous teaching jobs:</p> <ul style="list-style-type: none"> <li>• school name</li> <li>• main reason left school</li> <li>• reasons dissatisfied with school</li> </ul> <p>Teacher satisfaction</p> <p>Main reason left teaching</p> <p>Reasons dissatisfied with teaching</p> <p>New education position type</p> <p>Teacher Education Assistance for College and Higher Education (TEACH) Grant Program awareness</p> <p>Loan forgiveness program (awareness, influence on decision to become a teacher, and participation)</p>

See notes at end of table.



**Table E-1. Data elements, by content area: 2020—Continued**

<b>Content area</b>	<b>Data element</b>
Background	Date of birth
	Citizenship and nativity status
	Language (native language, second language, and non-English language use in job[s])
	Marital status/financial responsibilities shared with another/household composition
	Biological sex, gender identity, sexual orientation, sexual orientation awareness, and workplace acceptance and discrimination of sexual orientation and gender
	Military status
	Civic and volunteer activity (voting behavior, number of hours volunteered)
	Total number of dependents, date of dependency, and age of dependent children
	Child care costs for dependent children (respondents with dependents only)
	Current housing payments and home value
	Current vehicle loan payment
	Personal and professional financial costs of coronavirus pandemic
	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 2019 from all sources
	Spouse's or partner's information (employment status, income for 2019, highest level of education completed, attended college or graduate school in 2018–19 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–12 = prekindergarten through 12th grade.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

# Appendix F. Training Topics and Agenda

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- Appendix A Frequently Asked Questions
- Appendix B Sample Members’ Rights and Confidentiality
- Appendix C Refusal Conversion Procedures
- Appendix D Data Collection Letter
- Appendix E Event, Line-Level, and Summary Status Codes

## DATA COLLECTION INTERVIEWER TRAINING AGENDA

<b>Hour</b>	<b>Training Component</b>	<b>Person Responsible</b>	<b>Time</b>
<b>Tuesday, July 7: 5:45-10:00 PM</b>			
5:45-6:00	DCIs Arrive for Meeting / Test Audio/Video	All	<b>15 minutes</b>
6:00-6:15	Welcome and Introductions— Overview of Training Objectives	Beth	<b>15 minutes</b>
6:15-6:30	CATI / Coding App Access Check	Guernardo	<b>15 minutes</b>
6:30-7:00	Introduction to CATI-CMS	Guernardo	<b>30 minutes</b>
7:00-7:30	Security Presentation/FAQ and Pronunciation Guide Highlights and Questions	Beth	<b>30 minutes</b>
7:30-9:00	Survey Basics	Survey team	<b>90 minutes</b>
9:00-9:45	Round Robin	All	<b>45 minutes</b>
9:45-10:00	Wrap-up	Beth	<b>15 minutes</b>
<b>Wednesday, July 8: 5:45-10:00 PM</b>			
5:45-6:00	DCIs Arrive for Meeting / Test Audio/Video	All	<b>15 minutes</b>
6:00-6:10	Training Objectives and Questions	Beth	<b>10 minutes</b>
6:10-7:40	Coders	Survey team	<b>90 minutes</b>
7:40-7:55	Break		<b>15 minutes</b>
7:55-9:45	Paired Mocks	All	<b>110 minutes</b>
9:45-10:00	Wrap-up	Beth	<b>15 minutes</b>

# Appendix G. Notification Materials for Survey Data Collection

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Data Collection Announcement E-mail.....	G-6
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## Brochure

### Who is conducting B&B?

The 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) is conducted by the National Center for Education Statistics (NCES), in the U.S. Department of Education's Institute of 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).

### 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 individually identifiable information supplied by individuals or institutions may be used only for statistical purposes and may not be disclosed, or used, in identifiable form for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151).

Data security procedures for B&B are reviewed and approved by NCES data security staff. Your answers are secured behind firewalls and are encrypted during internet transmission using Secure Sockets Layer (SSL) protocol. All data entry modules are password protected and require the user to log in before accessing the data. NCES employees and contractors are subject to large fines or imprisonment if individual responses are disclosed.



### B&B Help Desk

For assistance, please contact the study Help Desk or visit the website.

[800-957-6445](tel:800-957-6445)

[bandb@rti.org](mailto:bandb@rti.org)

<https://surveys.nces.ed.gov/bandb>

If you have questions or concerns about B&B:16/20, contact:

**RTI International**  
Jennifer Wine, Ph.D.  
B&B Project Director  
[jennifer@rti.org](mailto:jennifer@rti.org)  
877-225-8470

**National Center for Education Statistics (NCES)**  
Tracy Hunt-White, Ph.D.  
B&B Project Officer  
[tracy.hunt-white@ed.gov](mailto:tracy.hunt-white@ed.gov)  
202-245-6507

June 2020



Conducted by:  
U.S. Department of Education  
Institute of Education Sciences  
National Center for Education Statistics  
<https://nces.ed.gov>

OMB Control Number: 1850-0926

Learn more about our confidentiality procedures at:  
<https://surveys.nces.ed.gov/bandb/confidentiality.aspx>



NCES 2020-541



## 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20)

A Publication of The National Center for Education Statistics at IES





## What is B&B?

The 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) is a national study of approximately 25,000 graduates from U.S. colleges and universities who will be asked about their experiences in the 4 years since completing a bachelor's degree. The study collects information on graduate and other education, experiences in the labor market, earnings and expenses, and family status. In addition to survey responses, information is collected from sources such as enrollment and federal student loan databases.

## What happens to the results?

As with results from previous rounds of B&B, results from the current study will be posted on the NCES website (<https://nces.ed.gov/surveys/b&b/>) as soon as they are available. 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.

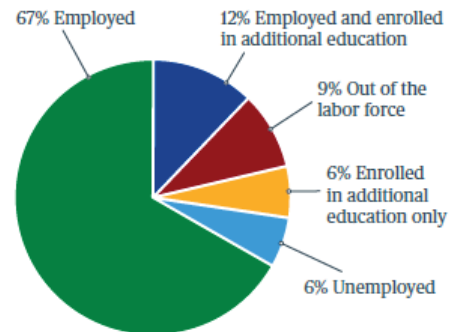
Researchers and policymakers will use B&B data to explore a wide variety of topics, including student loan debt and transition to employment and/or graduate education. B&B data are used to inform national higher education policies.

## Why am I being asked to participate?

You are being asked to participate in B&B because you completed the requirements for your bachelor's degree 4 years ago, during the 2015-16 academic year. Most study participants were first surveyed in 2016 as part of the National Postsecondary Student Aid Study (NPSAS). We also contacted sample members to participate in the B&B:16/17 study in 2017.

## Did you know?

Within 12 months of graduating, the employment and enrollment status of 2015-16 first-time bachelor's degree recipients was as follows:



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

## How do I participate?

Participation is easy! You can complete the B&B survey online or over the phone.

### Online

Log on to the study website at <https://surveys.nces.ed.gov/bandb/> using the Study ID and password provided to you in your study materials.

The survey is mobile-optimized, so it can be easily completed on a mobile device.

### Phone

Call our Help Desk at 800-957-6445 to speak to one of our professional interviewers who are happy to assist you.

Additionally, during data collection you may receive reminder communications in any of the following ways:

- Mail from NCES
- E-mails from [bandb@rti.org](mailto:bandb@rti.org)
- Text messages and phone calls from area code 202 or the U.S. Department of Education





## Data Collection Announcement Letter

«date»

«casenamemosuffixALLCAPS»

«addr1»

«addr2»

«city», «state» «zip»

Study ID: «caseid»

Dear «fname»,

Congratulations! You have been selected to participate in the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B), an important U.S. Department of Education study that will collect education, employment, and other information from recent college graduates who completed their bachelor's degree «in [major] » during the 2015-16 school year. You may recall being asked to participate in the National Postsecondary Student Aid Study (NPSAS) in 2016 and the 2017 collection for B&B. 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.

**Help shape higher education policy by sharing your education experiences.**

Here are some key pieces of information to help get you started:

- **Enclosed, please find \$2 in appreciation of your participation in B&B.**

To complete your survey:

- Go to our secure B&B website at <https://surveys.nces.ed.gov/bandb/>
- Log in using your
  - Study ID: «caseID»
  - Password: «password»
- Or use the camera on your phone to scan the QR code below:  
«QRCODE»
- If you have questions or problems completing your survey online, or prefer to complete the survey over the telephone, call the **B&B Help Desk at 800-957-6445** or e-mail us at [bandb@rti.org](mailto:bandb@rti.org)
- [IF AGGRESSIVE GROUP: <<If you complete the survey by <<early\_comp\_date>>, we will send you \$<<inc\_amount+earlybird\_inc>> payable by <<PayPal or>> check. After <<early\_comp\_date>>, we will send you \$<<inc\_amount>> once you complete the survey.>> <<IF DEFAULT GROUP: Once you complete the survey, we will send you \$<<inc\_amount>>, payable by <<PayPal or>> check. >>
- Because your participation is important, you may receive reminders via e-mail, mail, phone, and text message.


*The survey will take approximately 35 minutes to complete and can be completed on any electronic device, including your mobile device or tablet.*

We hope that you enjoy the survey and the opportunity to tell us about your experiences since receiving your bachelor's degree.

Sincerely,



Tracy Hunt-White, Ph.D.  
Project Officer, B&B  
National Center for Education Statistics  
Institute of Education Sciences  
U.S. Department of Education  
[Tracy.Hunt-White@ed.gov](mailto:Tracy.Hunt-White@ed.gov) | 202-245-6507



Jennifer Wine, Ph.D.  
Project Director, B&B  
RTI International  
[jennifer@rti.org](mailto:jennifer@rti.org) | 877-225-8470

«panelinfo»/«controlID»

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NCES is authorized to conduct the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) 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 purpose 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.

All of the information you provide may be used only for statistical purposes and may not be disclosed, or used, in identifiable form, for any other purpose except as required by law (20 U.S.C. §9573 and 6 U.S.C. §151).

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this voluntary information collection is 1850-0926. The time required to complete this information collection is estimated to average approximately 35 minutes per survey 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 2016/20 Baccalaureate and Beyond Longitudinal Study, (B&B:16/20), National Center for Education Statistics, Potomac Center Plaza, 550 12th St., SW, Room 4004, Washington, DC 20202. OMB Clearance No: 1850-0926 Expiration Date: 07/31/2022

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## Data Collection Announcement E-mail

**SUBJECT:** U.S. Department of Education's Baccalaureate and Beyond Longitudinal Study (B&B)

Congratulations, «fname»! You have been selected to participate in the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B), conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). The study 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.

You were selected to represent many other recent college graduates who were not chosen to participate. Therefore, your participation is critical to the success of the study.

Here are some key pieces of information to help get you started:

- Your survey will take about **35 minutes** to complete.
- To automatically start the survey, click the button below:



If you wish to go to our study website, you can log in with your Study ID and password below.

<https://surveys.nces.ed.gov/bandb/>

**Study ID:** «caseid»

**Password:** «password» (*password is case sensitive*)

- **[IF PREPAID AND UNSURE OF ADDRESS: «We sent you \$2 via PayPal «to [e-mailaddress] »in appreciation for your participation in B&B.»] [IF PREPAID AND GOOD ADDRESS: «We are sending you \$2 via mail in appreciation for your participation in B&B. Remember to look out for a large white envelope from the National Center for Education Statistics.»] [«IF AGGRESSIVE GROUP: If you complete the survey by «early\_comp\_date», we will send you \$«inc\_amount+earlybird\_inc» payable by «PayPal or» check. After «early\_comp\_date», we will send you \$«inc\_amount» once you complete the survey.» «IF DEFAULT GROUP: Once you complete the survey, we will send you \$«inc\_amount», payable by «PayPal or» check.»**
- Your participation in this study will not affect any aid or other benefits you receive.
- Because your participation is important, you may receive reminders via e-mail, mail, phone, and text message.

If you have questions about the study or prefer to complete your survey over the phone, please call the B&B Help Desk at **800-957-6445** or e-mail us at [bandb@rti.org](mailto:bandb@rti.org). You can also learn more by visiting the study website at <https://surveys.nces.ed.gov/bandb/>.

We hope you enjoy the opportunity to share your experiences and help inform policy decisions.

Many thanks,

Tracy Hunt-White, Ph.D.  
Project Officer, B&B  
National Center for Education Statistics  
Institute of Education Sciences  
U.S. Department of Education  
[Tracy.Hunt-White@ed.gov](mailto:Tracy.Hunt-White@ed.gov) | 202-245-6507

Jennifer Wine, Ph.D.  
Project Director, B&B  
RTI International  
[jennifer@rti.org](mailto:jennifer@rti.org) | 877-225-8470

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The National Center for Education Statistics (NCES) is authorized to conduct the 2016/20 Baccalaureate and Beyond Longitudinal Study 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 purpose 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.

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).

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«[emailID](#)»

## Reminder Postcard 1



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You can help shape U.S. higher education  
policy and help generations of students!

We recently sent you a letter asking you to complete your 2016/20  
Baccalaureate and Beyond Longitudinal Study (B&B) survey.  
If you already completed your survey, thank you very much!

If you have not yet completed your survey, please follow these  
instructions to complete your **35-minute** survey:

**Go to:** <https://surveys.nces.ed.gov/bandb/>

**Study ID:** <<CaseID>>

**Password:** <<Password>>

Or scan this QR code

<<QRCODE>>

Once you've completed your survey, we will send you  
\$<<Inc\_amount>> payable by<<PayPal>> check.

If you have any questions, please call 800-957-6445 or e-mail  
us at [bandb@rti.org](mailto:bandb@rti.org).

**Please complete your survey as soon as possible!**

OMB Control Number: 1850-0926

Learn more about our confidentiality procedures at  
<https://surveys.nces.ed.gov/bandb/confidentiality.aspx>

<<CaseNameSuffixALLCAPS>>  
<<Addr1>>  
<<Addr2>>  
<<City>>, <<State>> <<Zip>> <<Zip4>>

National Center for Education Statistics  
U.S. Department of Education  
525 Capital Boulevard  
Raleigh, NC 27616-2925  
ADDRESS SERVICE REQUESTED



## Abbreviated Announcement Postcard



---

<<fname>>, we wanted to send you a reminder that your B&B survey is now only 15 minutes, and you will get \$<<inc\_amount>> when you complete your survey today!

**Please complete in one of two ways:**

**1. Online**

Go to: <https://surveys.nces.ed.gov/bandb/>

Study ID: <<caseid>>

Password: <<password>>pn

Or scan this QR code

<<QRCODE>>

**2. Phone:** Call 800-957-6445 to complete your survey over the phone.

If you have any questions, please call 800-957-6445  
or e-mail us at [bandb@rti.org](mailto:bandb@rti.org).

*OMB Control Number: 1850-0926*

*Learn more about our confidentiality procedures at  
<https://surveys.nces.ed.gov/bandb/confidentiality.aspx>*

«casenamemosuffxALLCAPS»  
«addr1»  
«addr2»  
«city», «state», «zip» «zip4»

ADDRESS SERVICE REQUEST BD  
Raleigh, NC 27616-2925  
5265 Capital Boulevard (024099102.02.424)  
US Department of Education  
National Center for Education Statistics



**Your education  
survey now  
only takes 15  
minutes!**

Open



## Text Message Reminder Examples

### Data Collection Announcement Text

US DEPT OF EDUC: <<fname>>, you have been selected for the U.S. Department of Education's 2016/20 Baccalaureate and Beyond Longitudinal Study. You'll receive \$<<inc\_amount>> for participating. Click here to take your survey: [bitly link]. Reply STOP to opt out of future text messages.

### Text Message Reminder 1

US DEPT OF EDUC: Hi <<fname>>. Increase our understanding of the experiences of recent college graduates. Log on to take your B&B survey <<and <<now>>> you'll <<still>> receive \$<<inc\_amount>>. Take the survey at: [bitly link]. Reply STOP to opt out of future text messages.

### Text Message, Reminder 22 (Last Day)

US DEPT OF EDUC: <<fname>>, today is the LAST DAY to complete your <<time>>-minute B&B survey <<and <<now>><<still>>> receive \$<<inc\_amount>>>>! Click here to begin: [bitly link]. Reply STOP to opt out of future text messages.

### Nonresponse Follow-Up Text Message Reminder

US DEPT OF EDUC: Hi <<fname>>. Your B&B survey is still available for you to take << and <<now>>> you'll <<still>> get \$<<inc\_amount>> as a thank you>>! Take the survey by clicking here: [bitly link]. Reply STOP to opt out of future text messages.

## Reminder Letter 5

«date»

«casenamenosuffixALLCAPS»

«addr1»

«addr2»

«city», «state» «zip» «zip4»

Study ID: «caseid»

Dear «fname»:

The U.S. Department of Education’s Baccalaureate and Beyond Longitudinal Study (B&B) «only » takes about «time» minutes. [IF INCENTIVE ELIGIBLE: «Now we’re»/«We’re» «still» offering \$«inc\_amount» for your participation.】

You are being asked to participate in B&B because you were enrolled in postsecondary education at ««the »»«NPSASschool»»/«your institution» during the 2015–16 academic year. The data you provide, combined with that of other students, will help educators, researchers, and policymakers at the local, state, and national levels better understand how earning a bachelor’s degree impacts choices for additional education and employment paths.

To complete your survey:

Log on to our website at <https://surveys.nces.ed.gov/bandb/> using the credentials provided below

Study ID: «caseID»

Password: «password»

*Note: Your password is case sensitive; you will need to enter it exactly as it appears here.*

Or use the camera on your phone to scan the QR code below to take you to the «survey»/«website».

«QRCODE»

You can also e-mail us at [bandb@rti.org](mailto:bandb@rti.org) or call 855-322-2826 to get more information about B&B or to complete your survey by phone.

Sincerely,

Ted Socha  
B&B Project Officer  
National Center for Education Statistics  
[ted.socha@ed.gov](mailto:ted.socha@ed.gov) | 202-245-7071

Jennifer Wine, Ph.D.  
B&B Project Director  
RTI International  
[jennifer@rti.org](mailto:jennifer@rti.org) | 877-225-8470

«panelinfo»/«controlID»

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NCES is authorized to conduct the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) 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 purpose 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.

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).

---

## Thank You Letter

«casenamenosuffixALLCAPS»  
«addr1»  
«addr2»  
«city», «state» «zip» «zip4»

Study ID: «caseid»

Dear «fname»:

On behalf of the U.S. Department of Education and the staff of the Baccalaureate and Beyond Longitudinal Study (B&B), we would like to thank you.

Your participation in B&B will help researchers and policymakers better understand how earning a bachelor's degree impacts choices for additional education and employment paths.

Enclosed you will find a check for \$«inc\_amount» as a token of our appreciation.

If you have questions, please do not hesitate to call the B&B Help Desk at 855-322-2826 or e-mail us at [bandb@rti.org](mailto:bandb@rti.org).

Thank you for contributing to this important work about the experiences of recent college graduates!

Sincerely,

Ted Socha  
B&B Project Officer  
National Center for Education Statistics  
[ted.socha@ed.gov](mailto:ted.socha@ed.gov) | 202-245-7071

Jennifer Wine, Ph.D.  
B&B Project Director  
RTI International  
[jennifer@rti.org](mailto:jennifer@rti.org) | 877-225-8470

«panelinfo»/«controlID»

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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).

---

# Appendix H. Calibration Sample

The calibration experiment for the 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20) investigated whether an alternative form of communicating the prepaid PayPal incentive is associated with an increase in response rate, similar to the effect associated with cash prepaid incentives. Specifically, a separate index card announcing the \$2 prepaid PayPal incentive was added in the data collection announcement mailing while everything else was kept the same (including later e-mail communications).

Two approaches were used to communicate the \$2 prepaid incentive to the sample members in the aggressive protocol:

- **Control group** received a mailing with a \$2 prepaid cash incentive.
- **Treatment group** received a mailing with a \$2 prepaid PayPal incentive announced on a separate index card.

A calibration sample of 3,130 ever-nonresponding sample members (i.e., did not participate in either the National Postsecondary Student Aid Study 2016 base year or the 2016/17 Baccalaureate and Beyond Longitudinal Study [B&B:16/17] survey) or respondents who only completed the B&B:16/17 abbreviated survey was randomly selected to receive either form of the prepaid incentive.<sup>1</sup> This sample allowed for comparison of response rates among two equally sized experimental groups of 1,570 sample members, each providing enough power to detect at least a 5-percentage point difference in response rates at 80 percent power, a type I error of 5 percent, and a base response rate of 50 percent.

The experiment allowed us to test the following hypotheses:

- H1. There is no statistically significant difference in response rates between the control group and treatment group.
- H2. There are no statistically significant differences in representativeness (demographic characteristics) between the control group and treatment group.

The experimental period was 2 weeks starting in early July 2020, after which the results were analyzed to determine which approach to recommend for the main data collection. The final decision was driven by the overall difference in response rates and representativeness.

The results of the calibration experiment at the end of the experimental evaluation period follow:

**Response rates.** Comparing the B&B:16/20 calibration sample response rates for the control group (cash; AAPOR RR1<sup>2</sup> = 22.1 percent) and the treatment group (PayPal; 20.3 percent) using a two-tailed *z*-test yielded no statistically significant differences (*p* = 0.21).

---

<sup>1</sup> Ninety-six percent of these cases had at least one good e-mail address that could be used to send the PayPal prepaid incentive.

<sup>2</sup> Unless noted otherwise, all response rates reported refer to the response rate 1 (RR1) as defined by the standards of the American Association for Public Opinion Research (AAPOR 2016). The RR1 is the number of complete interviews (excluding partial interviews) divided by the number of complete and partial interviews plus all noninterviews (excluding confirmed ineligible).

**Representativeness.** In addition to monitoring response rates, nonresponse bias analyses were conducted to assess the representativeness of the responding sample for the cash and PayPal groups. Age was analyzed as a continuous variable; sex, race, ethnicity, and employment status were analyzed as dichotomous categorical variables. Table H-1 displays summary measures for the demographic distributions by group for the responding sample and the overall sample including nonresponding cases. Comparing the responding sample composition with the overall sample composition shows the magnitude of nonresponse bias. For example, the overall sample in the control group consisted of 57.4 percent females. At the end of the calibration evaluation period, the responding sample overrepresents females by 7.7 percentage points with a total of 65.1 percent females.

Table H-1 shows that the two groups did not yield samples with a different demographic composition compared to their overall sample estimates and suggests no differential nonresponse bias except for age. The PayPal incentive treatment group (mean = 29.8 years old) attracted a respondent sample that was 1.6 years younger than the cash incentive control group (mean = 31.4 years old;  $p = 0.016$ ). A formal two-sided z-test shows that sample members of all ages were equally likely to respond when given a \$2 prepaid cash incentive (control group). However, younger sample members were more likely to respond when given a \$2 prepaid incentive via PayPal (treatment group); for every 1-year decrease in age, the predicted probability of responding increased by half a percentage point ( $p < .001$ ).

**Table H-1. Calibration sample composition by demographic characteristics and experimental condition: 2020**

<b>Demographic characteristics</b>	<b>Control group: Cash</b>	<b>Treatment group: PayPal</b>	<b>Difference: Control - treatment</b>
<b>Age (mean)</b>			
Respondent sample	31.4	29.8	1.6*
Overall sample ( $n = 3,080$ )	31.6	31.3	
<b>Female (in percent)</b>			
Respondent sample	65.1	61.6	3.5
Overall sample ( $n = 3,060$ )	57.4	55.7	
<b>White (in percent)</b>			
Respondent sample	78.1	78.3	-0.2
Overall sample ( $n = 3,110$ )	73.2	74.0	
<b>Hispanic (in percent)</b>			
Respondent sample	14.1	12.4	1.7
Overall sample ( $n = 3,060$ )	15.3	13.2	
<b>Employment status (in percent)</b>			
Respondent sample	92.3	93.7	-1.4
Overall sample ( $n = 1,920$ )	89.6	92.4	

\*  $p < .05$ .

NOTE: Sample sizes for the overall sample differ because of missing data. Results exclude ineligible cases. Partial interviews are considered nonrespondents for analytic purposes.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond (B&B:16/20).

Overall, although there was no statistically significant difference in response rates between the \$2 cash prepaid incentive and the \$2 PayPal prepaid incentive, there was a statistically significant difference in the resulting sample composition related to age: the treatment group resulted in a statistically significantly younger respondent pool. Given the differential effectiveness of the PayPal incentive among the younger and older sample members, for the B&B:16/20 main data collection (aggressive protocol), the incentive design employed for the control group (\$2 cash prepaid incentive) was used for individuals aged 30 and older, and the incentive design for the treatment group (\$2 PayPal prepaid incentive) was used for individuals aged 29 and younger.



# Appendix I. Derived Variables

**Table I-1. Derived variables**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
ID	Survey sample	Analysis ID
B2CVADDED	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Pursued additional education/training
B2CVDLYHM	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed buying a home
B2CVDLYKIDS	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed having children
B2CVDLYMAR	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed getting married
B2CVFMRESP	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Took on additional family/child care
B2CVSTRESS	Coronavirus pandemic (COVID-19)	Did not meet essential expenses in past 12 months, as of the B&B:16/20 survey: Due to COVID
B2CVUNDESJB	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Took a less desirable job
B2CVUNRJB	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Took a job outside of your field
B2CVWKINST	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed additional education
B2CVWKLESS	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Worked less than desired
B2CVWKMORE	Coronavirus pandemic (COVID-19)	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Worked more than desired
B2PRIVDFRCVCUR	Coronavirus pandemic (COVID-19)	Currently in deferment on private student loans due to COVID-19, as of the B&B:16/20 survey
B2ACS16A	Demographic characteristics	Disability, as of the B&B:16/20 survey: Deaf or serious difficulty hearing
B2ACS16B	Demographic characteristics	Disability, as of the B&B:16/20 survey: Blind or serious difficulty seeing
B2ACS17A	Demographic characteristics	Disability, as of the B&B:16/20 survey: Serious difficulty remembering, concentrating, etc.
B2ACS17B	Demographic characteristics	Disability, as of the B&B:16/20 survey: Serious difficulty walking or climbing stairs
B2AGEATBA	Demographic characteristics	Age, as of BA completion
B2AWFAM	Demographic characteristics	Awareness of sexual orientation, as of the B&B:16/20 survey: Among immediate family members
B2AWSOC	Demographic characteristics	Awareness of sexual orientation, as of the B&B:16/20 survey: In social circle
B2AWWRK	Demographic characteristics	Awareness of sexual orientation, as of the B&B:16/20 survey: At work
B2CITZN	Demographic characteristics	US citizenship status, as of the B&B:16/20 survey
B2DISABLE	Demographic characteristics	Has some type of disability, as of the B&B:16/20 survey
B2GENDER	Demographic characteristics	Gender identity, as of the B&B:16/20 survey
B2GENMIN	Demographic characteristics	Gender minority status, as of the B&B:16/20 survey
B2LANGS	Demographic characteristics	Second language, as of the B&B:16/20 survey
B2LGBTQ	Demographic characteristics	Sexual orientation, as of the B&B:16/20 survey
B2LNGCAR	Demographic characteristics	Used non-English language in a job since BA completion, as of the B&B:16/20 survey
B2MAIN1	Demographic characteristics	Main disability condition/impairment, as of the B&B:16/20 survey
B2MARCHA	Demographic characteristics	Family status, as of 4 years after BA (considering only dependent children)
B2MARCHB	Demographic characteristics	Family status, as of 4 years after BA (considering all dependents)
B2MARR	Demographic characteristics	Marital status, as of the B&B:16/20 survey
B2NATIVE	Demographic characteristics	Native language, as of the B&B:16/20 survey

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2SEX	Demographic characteristics	Sex assigned at birth
B2SINGP	Demographic characteristics	Single parent, as of 4 years after BA
B2CLICENSE	Employment: Description	Ever had professional certification or state or industry license, within 4 years of BA
B2CVLVEVR	Employment: Description	Ever offered paid leave due to coronavirus pandemic, within 4 years of BA
B2DISABL	Employment: Description	Received disability benefits, within 4 years of BA
B2EMPSTAT	Employment: Description	Employment status considering all jobs, as of 4 years after BA
B2NEGOT	Employment: Description	Ever negotiated salary/benefits, within 4 years of BA
B2PCEMP	Employment: Description	Percent of months employed, within 4 years of BA
B2PCOLF	Employment: Description	Percent of months not in the labor force, within 4 years of BA
B2PCUNEM	Employment: Description	Percent of months unemployed, within 4 years of BA
B2TLCEVR	Employment: Description	Ever allowed to work remotely for any jobs due to coronavirus pandemic, within 4 years of BA
B2UNEMP	Employment: Description	Received unemployment compensation not due to coronavirus pandemic, within 4 years of BA
B2UNEMPCV	Employment: Description	Received unemployment compensation due to coronavirus pandemic, within 4 years of BA
B2WYCVEVR	Employment: Description	Ever worked less than full time in any job due to the coronavirus pandemic, within 4 years of BA
B2EDUINDRCNT	Employment: Employer	Most recent employer, within 4 years of BA: Level of education industry
B2EMPSLF	Employment: Employer	Ever self-employed, within 4 years of BA
B2EMPSLFRCNT	Employment: Employer	Most recent employer, within 4 years of BA: Self-employed
B2EMPTYPRCNT	Employment: Employer	Most recent employer, within 4 years of BA: Type of employer
B2INDURCNT	Employment: Employer	Most recent employer, within 4 years of BA: Industry
B2SAMESTATE	Employment: Employer	Ever employed in same state as bachelor's deg-granting institution, within 4 years of BA
B2SMSTATERCNT	Employment: Employer	Most recent employer, within 4 years of BA: Located in the same state as BA-granting institution
B2STCDERCNT	Employment: Employer	Most recent employer, within 4 years of BA: Employer state
B2ZIPRCNT	Employment: Employer	Most recent job, within 4 years of BA: Employer ZIP code
B2ALLHRS4YRS	Employment: History	Hours worked per week in all current jobs, as of 4 years after BA
B2ALLINC4YRS	Employment: History	Annualized total pay for all current jobs, as of 4 years after BA
B2BALRCNT	Employment: History	Most recent job, within 4 years of BA: Satisfaction with work-life balance
B2BENANYRCNT	Employment: History	Most recent job, within 4 years of BA: Employer offered benefits
B2BENRCNT	Employment: History	Most recent job, within 4 years of BA: Satisfaction with benefits
B2CARINDRCNT	Employment: History	Most recent job, within 4 years of BA: Part of a career
B2CHALRCNT	Employment: History	Most recent job, within 4 years of BA: Satisfaction with challenge of work
B2CHNGCVEVR	Employment: History	Ever laid off from any jobs due to the coronavirus pandemic, within 4 years of BA
B2CHNGCVRCNT	Employment: History	Most recent job, within 4 years of BA: Laid off or terminated due to coronavirus pandemic
B2CVBRKEVR	Employment: History	Ever had a break in work due to the coronavirus pandemic, within 4 years of BA
B2CVBRKRCNT	Employment: History	Most recent job, within 4 years of BA: Break in work due to coronavirus pandemic

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2CVLVRCNT	Employment: History	Most recent job, within 4 years of BA: Paid leave due to coronavirus pandemic offered
B2CVNEMP	Employment: History	Spent time not working for pay due to coronavirus pandemic, within 4 years of BA
B2DISTINSTE	Employment: History	Distance (in miles) between most recent job within 4 years of BA & BA degree institution
B2EEHIST	Employment: History	Employment and enrollment history, within 4 years of BA
B2EVERLK	Employment: History	Ever looked for work within 4 years of BA
B2FTPTRCNT	Employment: History	Most recent job, within 4 years of BA: Full-time/part-time status
B2HINSRCNT	Employment: History	Most recent job, within 4 years of BA: Health insurance offered
B2IMPRCNT	Employment: History	Most recent job, within 4 years of BA: Satisfaction with importance of work
B2JBGE4M	Employment: History	Ever held job for at least 4 months, within 4 years of BA
B2LFP4YR	Employment: History	Employment and enrollment status, as of 4 years after BA
B2LICREQRCNT	Employment: History	Most recent job, within 4 years of BA: License required for work
B2MONRCNT	Employment: History	Most recent employer, within 4 years of BA: Months worked
B2NEMP	Employment: History	Spent time not working for pay and not enrolled, within 4 years of BA
B2NEMPBW	Employment: History	Spent time taking a break from work during non-working & non-enrollment spans, within 4 years of BA
B2NEMPCC	Employment: History	Spent time caring for children during non-working & non-enrollment spans, within 4 years of BA
B2NEMPCF	Employment: History	Spent time caring for family during non-working & non-enrollment spans, within 4 years of BA
B2NEMPHI	Employment: History	Spent time with personal health issues during non-working & non-enrollment spans, within 4 years of BA
B2NEMPLW	Employment: History	Spent time looking for work during non-working & non-enrollment spans, within 4 years of BA
B2NEMPSE	Employment: History	Spent time doing something else during non-working & non-enrollment spans, within 4 years of BA
B2NSFARCNT	Employment: History	Most recent job, within 4 years of BA: Required a BA
B2NUMEMP	Employment: History	Number of employers, within 4 years of BA
B2OCC23RCNT	Employment: History	Most recent job, within 4 years of BA: Occupation, 23 categories
B2OCC33RCNT	Employment: History	Most recent job, within 4 years of BA: Occupation, 33 categories
B2PAYRCNT	Employment: History	Most recent job, within 4 years of BA: Satisfaction with compensation
B2PDLVRCNT	Employment: History	Most recent job, within 4 years of BA: Paid vacation/holiday/sick leave offered
B2PREFTRCNT	Employment: History	Most recent job, within 4 years of BA: Prefer to work more hours
B2RETRCNT	Employment: History	Most recent job, within 4 years of BA: Retirement plans offered
B2SECRCNT	Employment: History	Most recent job, within 4 years of BA: Satisfaction with job security
B2STEMOCCRCNT	Employment: History	Most recent job, within 4 years of BA: Occupation is in STEM
B2STHRSRCNT	Employment: History	Most recent employer, within 4 years of BA: Average starting hours per week
B2STSALRCNT	Employment: History	Most recent employer, within 4 years of BA: Starting annualized pay
B2SUPVRCNT	Employment: History	Most recent job, within 4 years of BA: Supervises others

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2TCHOCCRCNT	Employment: History	Most recent job, within 4 years of BA: Occupation is in teaching
B2TLCRCNT	Employment: History	Most recent job, within 4 years of BA: Allowed to work remotely
B2WRK4YR	Employment: History	Ever employed for pay, within 4 years of BA
B2WYCVRCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Coronavirus pandemic
B2WYFRRCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Family responsibility
B2WYMLJRCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Held more than one job
B2WYNJARCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Full-time not avail.
B2WYNOHRCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Didn't want more hours
B2WYOTHRCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Other reason
B2WYSCHRCNT	Employment: History	Most recent job within 4 years of BA: Why less than 30 hrs: Attending school
B2YR4HR SRCNT	Employment: History	Most recent employer, within 4 years of BA: Average ending/recent hours
B2YR4SALRCNT	Employment: History	Most recent employer, within 4 years of BA: Ending/recent annualized pay
B2LKCOL	Employment: Search	Job search activities, within 4 years of BA: Talked to coworkers or mentors
B2LKEMA	Employment: Search	Job search activities, within 4 years of BA: Used an employment agency
B2LKFAC	Employment: Search	Job search activities, within 4 years of BA: Talked to faculty members or alumni
B2LKFAM	Employment: Search	Job search activities, within 4 years of BA: Talked to friends or family members
B2LKINT	Employment: Search	Job search activities, within 4 years of BA: Completed an internship
B2LKNWK	Employment: Search	Job search activities, within 4 years of BA: Used a prof networking site/app
B2LKONL	Employment: Search	Job search activities, within 4 years of BA: Searched online job postings
B2LKOTH	Employment: Search	Job search activities, within 4 years of BA: Other
B2ACCEPT	Employment: Workplace Environment	Most recent employer, within 4 years of BA: LGBT acceptance
B2DISCRIM	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Overall
B2DISGEN	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Gender identity
B2DISLGBTQ	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Sexual orientation
B2DISNATION	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Nationality
B2DISRCETH	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Race/ethnicity
B2DISREL	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Religion
B2DISSEX	Employment: Workplace Environment	Employment discrimination, as of the B&B:16/20 survey: Sex
B2ALONE	Family	Household composition, as of the B&B:16/20 survey: Living alone
B2CSTDYCR	Family	Monthly child care costs, as of the B&B:16/20 survey
B2DEP2	Family	Number of dependent children, as of 4 years after BA

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2DEPAGEHIGH	Family	Age of oldest dependent child, as of 4 years after BA
B2DEPAGELOW	Family	Age of youngest dependent child, as of 4 years after BA
B2DPNTS	Family	Household composition, as of the B&B:16/20 survey: Living with children or dependents
B2HAVEDEP4Y	Family	Have any dependents, as of 4 years after BA
B2HHNOPAR	Family	Household composition at age 16: Not living with parents or guardians
B2HHONEPAR	Family	Household composition at age 16: Living with one parent or guardian
B2HHTWOPAR	Family	Household composition at age 16: Living with two parents or guardians
B2HOTH	Family	Household composition, as of the B&B:16/20 survey: Living with other types of individuals
B2INCSP	Family	Spouse or domestic partner's gross income in 2019
B2MARR4Y	Family	Marital status, as of 4 years after BA
B2NUMDEP	Family	Total number of dependents, as of 4 years after BA
B2NUMNCD	Family	Number of non-child dependents, as of 4 years after BA
B2OTREL	Family	Household composition, as of the B&B:16/20 survey: Living with other relatives
B2PARIL	Family	Household composition, as of the B&B:16/20 survey: Living with parents or in-laws
B2SPAMT	Family	Spouse or domestic partner's student loan amount borrowed, as of the B&B:16/20 survey
B2SPCOL	Family	Spouse or domestic partner attended college or grad school in 2019-20, as of the B&B:16/20 survey
B2SPEMP	Family	Spouse or domestic partner employed in 2019
B2SPLNPY	Family	Spouse or domestic partner's monthly payment on student loans, as of the B&B:16/20 survey
B2SPLV	Family	Highest education attained by spouse or domestic partner, as of the B&B:16/20 survey
B2SPODP	Family	Household composition, as of the B&B:16/20 survey: Living with spouse or domestic partner
B2SPOWE	Family	Spouse or domestic partner's student loan amount owed, as of the B&B:16/20 survey
B2AFFADDLED	Finances	Education cost, as of the B&B:16/20 survey: Pursued additional education
B2AFFCHLD	Finances	Education cost, as of the B&B:16/20 survey: Delayed having children
B2AFFDLIED	Finances	Education cost, as of the B&B:16/20 survey: Delayed enrolling for additional education
B2AFFHOME	Finances	Education cost, as of the B&B:16/20 survey: Delayed buying a home
B2AFFLESS	Finances	Education cost, as of the B&B:16/20 survey: Took a less desirable job
B2AFFMARR	Finances	Education cost, as of the B&B:16/20 survey: Delayed getting married
B2AFFUNREL	Finances	Education cost, as of the B&B:16/20 survey: Took job outside field of study
B2AFFWKMR	Finances	Education cost, as of the B&B:16/20 survey: Worked more than desired
B2CARLOAN	Finances	Monthly vehicle loan or lease payment, as of the B&B:16/20 survey
B2CONTEMP	Finances	Contributed to employer-based retirement account in past 12 months, as of the B&B:16/20 survey
B2CONTNON	Finances	Contributed to non-employer-based retirement account in past 12 months, as of the B&B:16/20 survey

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2CONTRET	Finances	Contributed to retirement account in past 12 months, as of the B&B:16/20 survey
B2CRDBAL	Finances	Credit card balance, as of the B&B:16/20 survey
B2DONATE	Finances	Donated to 2015-16 BA-granting institution, as of the B&B:16/20 survey
B2FIN2000	Finances	Respondent's confidence in ability to come up with \$2,000 within the next month, as of the B&B:16/20 survey
B2HOMOWE	Finances	Amount owed on mortgage for primary residence, as of the B&B:16/20 survey
B2HOMVAL	Finances	Value of residence, as of the B&B:16/20 survey
B2HOUSE	Finances	Housing status, as of the B&B:16/20 survey
B2INCOM	Finances	Gross income in 2019
B2LOANLIT1	Finances	Loan literacy, as of the B&B:16/20 survey: Government can report unpaid debt to credit bureaus
B2LOANLIT2	Finances	Loan literacy, as of the B&B:16/20 survey: Government can garnish wages
B2LOANLIT3	Finances	Loan literacy, as of the B&B:16/20 survey: Government can retain tax or Social Security payments
B2LOANLITALL	Finances	Loan literacy, as of the B&B:16/20 survey: Correctly answered all three items
B2LOANLITTOT	Finances	Loan literacy, as of the B&B:16/20 survey: Number of correct responses
B2MTGAMT	Finances	Monthly rent or mortgage payment amount, as of the B&B:16/20 survey
B2NUMCRD	Finances	Number of credit cards, as of the B&B:16/20 survey
B2RETEMP	Finances	Had an employer-based retirement account, as of the B&B:16/20 survey
B2RETIRE	Finances	Had retirement account, as of the B&B:16/20 survey
B2RETNON	Finances	Had a non-employer-based retirement account, as of the B&B:16/20 survey
B2SELLPO	Finances	Result of sale of all major possessions, as of the B&B:16/20 survey
B2SFRBFGF	Finances	Sharing financial responsibilities with boyfriend or girlfriend, as of the B&B:16/20 survey
B2SFRFRRM	Finances	Sharing financial responsibilities with friends or roommates, as of the B&B:16/20 survey
B2SFROTHERS	Finances	Sharing financial responsibilities with other types of individuals, as of the B&B:16/20 survey
B2SFRPARENTS	Finances	Sharing financial responsibilities with parents, as of the B&B:16/20 survey
B2SFRRELATIVES	Finances	Sharing financial responsibilities with a sibling, as of the B&B:16/20 survey
B2SFRSPOUSE	Finances	Sharing financial responsibilities with spouse or domestic partner, as of the B&B:16/20 survey
B2STRESS	Finances	Did not meet essential expenses in past 12 months, as of the B&B:16/20 survey: Not due to COVID
B2EVRFDEF	Financial aid: Debt and repayment	Ever defaulted on student loans, as of 2020
B2FAMLNHLP	Financial aid: Debt and repayment	Family or friends helping to repay loans, within the 12 months before the B&B:16/20 survey
B2LNPAY	Financial aid: Debt and repayment	Current monthly payment on student loans, as of 2020
B2PAYSTAT	Financial aid: Debt and repayment	Current repayment status for student loans, as of the B&B:16/20 survey
B2RPMTCUR	Financial aid: Debt and repayment	Currently in repayment on student loans, as of 2020
B2ALLFEDFBFB20	Financial aid: Federal loans	All federal student loans in forbearance, as of February 2020
B2ALLFEDFBJN20	Financial aid: Federal loans	All federal student loans in forbearance, as of June 2020

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2DFRFEDPAY	Financial aid: Federal loans	Current monthly payment postponed for federal student loans, as of 4 years after BA
B2DLQNUM	Financial aid: Federal loans	Total number of delinquencies, 4 years after bachelor's degree
B2EVRFEDCNS	Financial aid: Federal loans	Ever consolidated federal student loans, as of 4 years after BA
B2EVRFEDDEF	Financial aid: Federal loans	Ever defaulted on federal student loans, as of 4 years after BA
B2EVRFEDDFR	Financial aid: Federal loans	Ever deferred federal student loan payments, as of 4 years after BA
B2EVRFEDFB	Financial aid: Federal loans	Ever had a forbearance on federal student loan payments, as of 4 years after BA
B2EVRFEDPIF	Financial aid: Federal loans	Ever paid off a federal student loan, as of 4 years after BA
B2EVRFEDREHAB	Financial aid: Federal loans	Ever rehabilitated a defaulted federal student loan, as of 4 years after BA
B2FEDCNSCUM	Financial aid: Federal loans	Cumulative amount of federal student loans consolidated, 4 years after bachelor's deg
B2FEDCUM1	Financial aid: Federal loans	Cumulative amount borrowed in federal student loans for undergrad education, as of 4 years after BA
B2FEDCUM2	Financial aid: Federal loans	Cumulative amount borrowed in federal student loans for grad education, as of 4 years after BA
B2FEDCUM3	Financial aid: Federal loans	Cumulative amount borrowed in federal student loans, as of 4 years after BA
B2FEDDEF CUR	Financial aid: Federal loans	Currently in default on federal student loans, as of 4 years after BA
B2FEDDFRCUR	Financial aid: Federal loans	Currently in deferment on federal student loans, as of 4 years after BA
B2FEDDFRECON	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA: For economic difficulty
B2FEDDFRECONMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA: For economic difficulty
B2FEDDFREN R	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA: For student enrollment
B2FEDDFRENRMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA: For student enrollment
B2FEDDFRFAM	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA: For family or disability
B2FEDDFRFAMMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA: For family or disability
B2FEDDFRGOV	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA: For government program
B2FEDDFRGOVMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA: For government program
B2FEDDFRMIL	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA: For military or law enforcement
B2FEDDFRMILMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA: For military/law enforcement
B2FEDDFRNUM	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA
B2FEDDFRNUMMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA
B2FEDDFRREAS	Financial aid: Federal loans	Reason for most frequently-granted deferment on federal student loans, as of 4 years after BA
B2FEDDFRTEA	Financial aid: Federal loans	Cumulative number of deferments on federal student loans, as of 4 years after BA: For teacher/medical profession

See notes at end of table.



**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2FEDDFRTEAMTH	Financial aid: Federal loans	Cumulative number of months in deferment on federal student loans, as of 4 years after BA: For teacher/medical profession
B2FEDFBCPAYFB20	Financial aid: Federal loans	Cumulative payment on federal student loans prior to administrative forbearance, as of February 2020
B2FEDFBCPAYJN20	Financial aid: Federal loans	Cumulative payment on federal student loans during administrative forbearance, as of June 2020
B2FEDFBPAYJN20	Financial aid: Federal loans	Made payment on federal student loans during administrative forbearance, as of June 2020
B2FEDOWEPCT	Financial aid: Federal loans	Amount owed on federal student loans as percent of federal student loan amount borrowed, as of 4 years after BA
B2FEDOWEPRIN1	Financial aid: Federal loans	Amount owed on federal student loans for undergrad education in principal, as of 4 years after BA
B2FEDOWEPRIN2	Financial aid: Federal loans	Amount owed on federal student loans for grad education in principal, as of 4 years after BA
B2FEDOWEPRIN3	Financial aid: Federal loans	Amount owed on federal student loans in principal, as of 4 years after BA
B2FEDPAY	Financial aid: Federal loans	Current monthly payment on federal student loans, as of 4 years after BA
B2FEDPAYMISS	Financial aid: Federal loans	Missed payment on a federal student loan in 12 months before the B&B:16/20 survey
B2FEDPAYMORE	Financial aid: Federal loans	Made prepayment on federal student loan in 12 months before the B&B:16/20 survey
B2FEDPAYPLAN	Financial aid: Federal loans	Current repayment plan for federal student loans, as of 4 years after BA
B2FEDPAYPLAN_INC	Financial aid: Federal loans	Currently enrolled in an IDR plan for federal student loans, as of 4 years after BA
B2FEDPAYSTAT	Financial aid: Federal loans	Current owe status on federal student loans, as of 4 years after BA
B2FEDPIF	Financial aid: Federal loans	Paid off all nondischarged federal student loans, as of 4 years after BA
B2FEDPIFM	Financial aid: Federal loans	Months between entering repayment & all non-discharged federal loans paid in full, 4 years after bachelor's deg
B2FEDRPMTCUR	Financial aid: Federal loans	Currently in repayment on federal student loans, as of 4 years after BA
B2FEDRPMTDIF	Financial aid: Federal loans	Ever had a federal loan repayment difficulty, 4 years after bachelor's degree
B2FFEDDEFMNT	Financial aid: Federal loans	Months between bachelor's deg & first default for federal student loans, as of 4 years after BA
B2GPLUCUM	Financial aid: Federal loans	Cumulative amount borrowed in Graduate PLUS Loans, 4 years after bachelor's degree
B2IDRAWARE	Financial aid: Federal loans	Ever heard of IDR plans, as of the B&B:16/20 student survey
B2LFEDPIFMTH	Financial aid: Federal loans	Months between bachelor's deg award date & paid off all nondischarged federal student loans, as of 4 years after BA
B2NOPOSTPONE	Financial aid: Federal loans	Respondent has no loans in deferment or forbearance or student is in school or in a grace period, 4 years after bachelor's deg
B2NUMFEDFB	Financial aid: Federal loans	Cumulative number of forbearances on federal student loans, as of 4 years after BA
B2NUMFEDFBMTH	Financial aid: Federal loans	Cumulative number of months in forbearance on federal student loans, as of 4 years after BA
B2NUMFEDYR	Financial aid: Federal loans	Cumulative number of years borrowed federal student loans, as of 4 years after BA
B2OWEINLRP	Financial aid: Federal loans	Amount owed on federal student loans in interest, as of 4 years after BA
B2PBAFEDCUM	Financial aid: Federal loans	Cumulative amount borrowed in federal student loans since bachelor's deg completion, as of 4 years after BA

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2PERKCUM1	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans for undergrad education, 4 years after bachelor's deg
B2PERKCUM2	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans for grad education, 4 years after bachelor's deg
B2PERKCUM3	Financial aid: Federal loans	Cumulative amount borrowed in Perkins Loans, 4 years after bachelor's degree
B2STFCUM1	Financial aid: Federal loans	Cumulative amount borrowed in Direct Subsidized & Unsubsidized Loans for undergrad education, 4 years after bachelor's deg
B2STFCUM2	Financial aid: Federal loans	Cumulative amount borrowed in Direct Subsidized & Unsubsidized Loans for grad education, 4 years after bachelor's deg
B2STFCUM3	Financial aid: Federal loans	Cumulative amount borrowed in Direct Subsidized & Unsubsidized Loans for undergrad & grad education, 4 years after bachelor's deg
B2STSBCUM1	Financial aid: Federal loans	Cumulative amount borrowed in Direct Subsidized Loans for undergrad education, 4 years after bachelor's deg
B2STSBCUM2	Financial aid: Federal loans	Cumulative amount borrowed in Direct Subsidized Loans for grad education, 4 years after bachelor's deg
B2STSBCUM3	Financial aid: Federal loans	Cumulative amount borrowed in Direct Subsidized Loans, 4 years after bachelor's deg
B2STUCUM1	Financial aid: Federal loans	Cumulative amount borrowed in Direct Unsubsidized Loans for undergrad education, 4 years after bachelor's deg
B2STUCUM2	Financial aid: Federal loans	Cumulative amount borrowed in Direct Unsubsidized Loans for grad education, 4 years after bachelor's deg
B2STUCUM3	Financial aid: Federal loans	Cumulative amount borrowed in Direct Unsubsidized Loans, 4 years after bachelor's deg
B2TOTFEDOWE1	Financial aid: Federal loans	Amount owed on federal student loans for undergrad education in principal & interest, as of 4 years after BA
B2TOTFEDOWE2	Financial aid: Federal loans	Amount owed on federal student loans for grad education in principal & interest, as of 4 years after BA
B2TOTFEDOWE3	Financial aid: Federal loans	Amount owed on federal student loans in principal & interest, as of 4 years after BA
B2EVRPRIVDEF	Financial aid: Private loans	Ever defaulted on private student loans, as of the B&B:16/20 survey
B2EVRPRIVPIF	Financial aid: Private loans	Ever paid off a private student loan, as of the B&B:16/20 survey
B2NFCUM	Financial aid: Private loans	Cumulative non-federal loans borrowed, 4 years after BA completion
B2BPVAMT	Financial aid: Private loans	Cumulative amount borrowed in private student loans for postbaccalaureate education, as of 4 years after BA
B2PRIVDEFUR	Financial aid: Private loans	Currently in default on private student loans, as of the B&B:16/20 survey
B2PRIVDFRCUR	Financial aid: Private loans	Currently in deferment on private student loans for reasons other than COVID-19, as of the B&B:16/20 survey
B2PRIVLN	Financial aid: Private loans	Ever received private student loans, as of 4 years after BA
B2PRIVPAY	Financial aid: Private loans	Current monthly payment on private student loans, as of the B&B:16/20 survey
B2PRIVPAYMISS	Financial aid: Private loans	Missed payment on a private student loan in 12 months before the B&B:16/20 survey
B2PRIVPAYMORE	Financial aid: Private loans	Made prepayment on private student loan in 12 months before the B&B:16/20 survey
B2PRIVPAYPCT	Financial aid: Private loans	Current monthly payment on private student loans as percent of earnings, as of the B&B:16/20 survey
B2PRIVRPMTCUR	Financial aid: Private loans	Currently in repayment on private student loans, as of the B&B:16/20 survey
B2PRIVSTAT	Financial aid: Private loans	Current repayment status for private student loans, as of the B&B:16/20 survey

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2UGPVLN	Financial aid: Private loans	Ever had a private loan for undergraduate education, as of the B&B:16/20 survey
B2EVRASST	Financial aid: Type	Ever used assistantships or fellowships for post-BA degree, within 4 years of BA
B2EVREMPAID	Financial aid: Type	Ever used employer assistance for post-BA degree, within 4 years of BA
B2EVRGIFT	Financial aid: Type	Ever used personal loan or gift for post-BA degree, within 4 years of BA
B2EVGRANT	Financial aid: Type	Ever used grants or scholarships for post-BA degree, within 4 years of BA
B2EVROTHAID	Financial aid: Type	Ever used other financial aid for post-BA degree, within 4 years of BA
B2EVROTHLN	Financial aid: Type	Ever used other student loans for post-BA degree, within 4 years of BA
B2EVRPOCKET	Financial aid: Type	Ever used own money for post-BA degree, within 4 years of BA
B2EVRWRKSDY	Financial aid: Type	Ever had work-study for post-BA degree, within 4 years of BA
B2AAEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Associate's degree program
B2BAEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Additional bachelor's deg program
B2BATOPBA	Postbaccalaureate education	Months between BA completion & first post-bachelor's enrollment, within 4 years of BA
B2CEREVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: undergrad certificate or diploma program
B2COVBRKENR	Postbaccalaureate education	Took a break in enrollment due to coronavirus pandemic, between Jan 2020 & June 2020
B2COVONLIN	Postbaccalaureate education	Took online courses due to coronavirus pandemic, between Jan 2020 & June 2020
B2DOCEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Research doctoral degree program
B2ENRPG	Postbaccalaureate education	Enrolled in a degree/certificate program, within 4 years of BA
B2EVRENRLFP	Postbaccalaureate education	Ever enrolled at private for-profit institution, within 4 years of BA
B2EVRGRDENR	Postbaccalaureate education	Ever enrolled in a graduate degree program, within 4 years of BA
B2EVRUGENR	Postbaccalaureate education	Ever enrolled in an undergraduate degree program, within 4 years of BA
B2EXPEVR	Postbaccalaureate education	Highest level of education ever expected to complete, as of the B&B:16/20 survey
B2GMAT	Postbaccalaureate education	Took GMAT, as of 4 years after BA
B2GRDEXM	Postbaccalaureate education	Took a graduate or professional entrance exam, as of 4 years after BA
B2GRE	Postbaccalaureate education	Took GRE, as of 4 years after BA
B2HIBTMON	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Time to degree in months
B2HICDERMAJ	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Major/field of study (6-digit CIP code) - 2020 CIP
B2HICDERMAJ2010	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Major/field of study (6-digit CIP code) - 2010 CIP
B2HICDST	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Start date
B2HICMAJ	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Major/field of study (45 categories) - 2020 CIP
B2HICMAJ2010	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Major/field of study (45 categories) - 2010 CIP

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2HICMAJORS	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Major/field of study (10 categories) - 2020 CIP
B2HICMAJORS2010	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Major/field of study (10 categories) - 2010 CIP
B2HIDEG	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Degree type
B2HIDGASST	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Had assistantships or fellowships
B2HIDGEMPAID	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used employer assistance
B2HIDGENST	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Enrollment intensity
B2HIDGFED	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used federal student loans
B2HIDGGIFT	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used personal loan or gift
B2HIDGGRANT	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used grants or scholarships
B2HIDGIPDS	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: IPEDS ID
B2HIDGONLIN	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Took online courses
B2HIDGOTHAID	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used other financial aid type
B2HIDGOTHLN	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used other student loans
B2HIDGPOCKET	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used own money
B2HIDGPRIV	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Used private loans
B2HIDGSEC	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Institution sector
B2HIDGWRKSDY	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Had federal work-study
B2HIDLDATE	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Date of completion/last enrollment
B2HIERNDG	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Completed program
B2HIFACS	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Main factor in major/field of study choice
B2HIONLINPROG	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Degree program entirely online
B2HISAMEINST	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Same institution as 2015-16 bachelor's degree institution
B2HISAMEMAJ	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Same major/field of study as 2015-16 bachelor's degree major/field of study
B2HISTMON	Postbaccalaureate education	Highest degree enrollment, within 4 years of BA: Months between BA completion & start date of highest degree enrollment
B2LSAT	Postbaccalaureate education	Took LSAT, as of 4 years after BA
B2MAEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Master's degree program
B2MCAT	Postbaccalaureate education	Took MCAT, as of 4 years after BA
B2NDCWK	Postbaccalaureate education	Enrolled in non-degree coursework, within 4 years of BA
B2NUMSCH	Postbaccalaureate education	Number of colleges, universities, or trade schools enrolled, within 4 years of BA

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2PBCEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Postbaccalaureate certificate program
B2PBENM48	Postbaccalaureate education	Enrolled in a degree/certificate program, as of 4 years after BA
B2PMCEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Post-master's certificate program
B2PROEVAT	Postbaccalaureate education	Enrollment & completion, within 4 years of BA: Professional practice doctoral degree program
B2RSEMP	Postbaccalaureate education	Reason for non-degree coursework, within 4 years of BA: Needed for employment
B2RSGOAL	Postbaccalaureate education	Reason for non-degree coursework, within 4 years of BA: Career goals
B2RSLTED	Postbaccalaureate education	Reason for non-degree coursework, within 4 years of BA: Education goals
B2RSOTH	Postbaccalaureate education	Reason for non-degree coursework, within 4 years of BA: Other
B2RSPERS	Postbaccalaureate education	Reason for non-degree coursework, within 4 years of BA: Personal enrichment
B2SUBGRE	Postbaccalaureate education	Took GRE Subject Test, as of 4 years after BA
B2TOTCOMPDEG	Postbaccalaureate education	Total number of degree programs completed, within 4 years of BA
B2WORTHG	Postbaccalaureate education	Graduate education was worth the financial cost, as of the B&B:16/20 survey
B2APPLY	PreK-12 teaching: Experiences	Ever applied for a Pre-K through 12th grade teaching position, 4 years after BA completion
B2ARTTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach arts/music
B2CRTELEM	PreK-12 teaching: Experiences	Certification level, 4 years after BA completion: K through 5th grade
B2CRTHIGH	PreK-12 teaching: Experiences	Certification level, 4 years after BA completion: 9th through 12th grade
B2CRTMID	PreK-12 teaching: Experiences	Certification level, 4 years after BA completion: 6th through 8th grade
B2CRTPREK	PreK-12 teaching: Experiences	Certification level, 4 years after BA completion: Early childhood education (PreK)
B2CURCRT	PreK-12 teaching: Experiences	Certified to teach, 4 years after BA completion
B2CURREGTCH	PreK-12 teaching: Experiences	Currently working as a regular classroom teacher, 4 years after BA completion
B2EETCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach elementary education
B2ENGTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach English/language arts
B2EPREPALT	PreK-12 teaching: Experiences	Prepared to teach through an alternative entry program, as of the B&B:16/20 survey
B2EPREPCOL	PreK-12 teaching: Experiences	Prepared to teach at a college/university that provides certification, as of the B&B:16/20 survey
B2EPREPCOMP	PreK-12 teaching: Experiences	Prepared to teach through a student teaching assignment, as of the B&B:16/20 survey
B2EPREPONL	PreK-12 teaching: Experiences	Prepared to teach through an online-only certification program, as of the B&B:16/20 survey
B2ESLTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach ESL
B2ESTTCLG	PreK-12 teaching: Experiences	Length of student teaching
B2EVRCRT	PreK-12 teaching: Experiences	Ever certified to teach, 4 years after BA completion
B2EVRRGTCH	PreK-12 teaching: Experiences	Worked as a regular classroom teacher, within 4 years of BA completion

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
B2EVRTCH	PreK-12 teaching: Experiences	Ever taught at Pre-K through 12th grade level, within 4 years of BA completion
B2FLTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach foreign languages
B2FRPLRCNT	PreK-12 teaching: Experiences	Most recent school, 4 years after BA completion: Percent free or reduced price lunch eligible
B2HIGRCNT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Highest grade level taught
B2HPETCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach health/physical education
B2INFLACCT	PreK-12 teaching: Experiences	Teaching influences, 4 years after BA completion: Teacher accountability
B2INFLADV	PreK-12 teaching: Experiences	Teaching influences, 4 years after BA completion: Possibilities for career advancement
B2INFLCONT	PreK-12 teaching: Experiences	Teaching influences, 4 years after BA completion: Opportunity to contribute to society
B2INFLFIN	PreK-12 teaching: Experiences	Teaching influences, 4 years after BA completion: Financial compensation
B2INFLKIDS	PreK-12 teaching: Experiences	Teaching influences, 4 years after BA completion: Working with kids
B2INFLPRES	PreK-12 teaching: Experiences	Teaching influences, 4 years after BA completion: Prestige of occupation
B2ITNTCH	PreK-12 teaching: Experiences	Ever worked as an itinerant teacher, 4 years after BA completion
B2LEVRCNT	PreK-12 teaching: Experiences	Most recent school, 4 years after BA completion: Level
B2LOCRCNT	PreK-12 teaching: Experiences	Most recent school, 4 years after BA completion: Locale
B2LOGRCNT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Lowest grade level taught
B2LTSUB	PreK-12 teaching: Experiences	Ever worked as a long-term substitute teacher, 4 years after BA completion
B2LVMAIN	PreK-12 teaching: Experiences	Reasons left teaching, 4 years after BA completion: Main reason left teaching
B2MATTCRCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach math/computer science
B2NEWTCHPOS	PreK-12 teaching: Experiences	Type of position held in education after leaving teaching position, 4 years after BA completion
B2NMONTCHRCNT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Number of months worked per year
B2NUMSCHTCH	PreK-12 teaching: Experiences	Number of schools taught at, 4 years after BA completion
B2OHTTCH	PreK-12 teaching: Experiences	Ever worked as another teacher type, 4 years after BA completion
B2PIPLN	PreK-12 teaching: Experiences	Teacher pipeline status, 4 years after BA completion
B2PMINRCNT	PreK-12 teaching: Experiences	Most recent school, 4 years after BA completion: Percent minority
B2PRCOMMRCNT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: School leadership communicated type of school wanted
B2PRDISCIPRCNT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: School leadership enforced rules for student conduct
B2PREKTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach early childhood education (Pre-K)
B2PRSUPPRCNT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: School leadership supported & encouraged staff
B2PUPRCNT	PreK-12 teaching: Experiences	Most recent school, 4 years after BA completion: Sector (public/private)
B2REGTCHST	PreK-12 teaching: Experiences	Regular classroom teacher status within 4 years of BA completion

See notes at end of table.

**Table I-1. Derived variables—Continued**

Variable name	Subject	Variable label
B2SCITCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach natural sciences
B2SECETCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach general education (middle/secondary grades)
B2SEDTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach special education
B2SOCTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach social sciences
B2STSUB	PreK-12 teaching: Experiences	Ever worked as a short-term substitute teacher, 4 years after BA completion
B2STUTCH	PreK-12 teaching: Experiences	Ever worked as a student teacher, 4 years after BA completion
B2SUPTCH	PreK-12 teaching: Experiences	Ever worked as a support teacher, 4 years after BA completion
B2TCHCID	PreK-12 teaching: Experiences	Ever worked as a teacher's aide, 4 years after BA completion
B2TCHGRT	PreK-12 teaching: Experiences	Aware of TEACH Grant programs, as of B&B:16/20 survey
B2TCHLNFRGV	PreK-12 teaching: Experiences	Awareness & participation in teacher loan forgiveness programs, as of B&B:16/20 survey
B2TCHMO	PreK-12 teaching: Experiences	Number of months taught, 4 years after BA completion
B2TCHSTMY	PreK-12 teaching: Experiences	Date first taught, 4 years after BA completion
B2TTLIRCNT	PreK-12 teaching: Experiences	Most recent school, 4 years after BA completion: Title I eligible
B2UNIONRCT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Union representation
B2VOCTCHCRT	PreK-12 teaching: Experiences	Most recent teaching job, 4 years after BA completion: Taught & certified to teach vocational/career/technical education
B2EVRVT	Public service participation	Ever voted in any election, as of the B&B:16/20 survey
B2MILIT	Public service participation	Military status, as of the B&B:16/20 survey
B2PLNVT	Public service participation	Planned to vote in 2020 presidential election
B2REGVT	Public service participation	Registered to vote, as of the B&B:16/20 survey
B2VLNTR	Public service participation	Volunteered in past 12 months, as of the B&B:16/20 survey
B2VLNTRHRS	Public service participation	Number of hours volunteered in past 12 months, as of the B&B:16/20 survey
B2VTNEL	Public service participation	Voted in 2020 election
B2DISTINSTR	Residence	Distance (in miles) between residence & BA degree institution, as of the B&B:16/20 survey
B2REGION	Residence	Region of residence, as of the B&B:16/20 survey
B2RESZIP	Residence	ZIP code of residence, as of the B&B:16/20 survey
B2SMSTR	Residence	Residence and BA degree institution in same state, as of the B&B:16/20 survey
B2STCDR	Residence	State of residence, as of the B&B:16/20 survey
B2BADATMY	Undergraduate education	BA completion date
B2INCHO	Undergraduate education	Satisfaction with quality of undergraduate education, as of the B&B:16/20 survey
B2MAJCHO	Undergraduate education	Satisfaction with choice of undergraduate major, as of the B&B:16/20 survey
B2MAJORS4Y	Undergraduate education	Field of study: Undergraduate (10 categories)
B2SCHZIP	Undergraduate education	ZIP code of BA-granting institution
B2WORTHUG	Undergraduate education	Undergraduate education worth the financial cost, as of the B&B:16/20 survey
B2Y4DATMY	Undergraduate education	4 years after BA completion: Month/year
WTB000	Survey weights	B&B:16/20 response cross-sectional weight

See notes at end of table.

**Table I-1. Derived variables—Continued**

<b>Variable name</b>	<b>Subject</b>	<b>Variable label</b>
WTB001-WTB200	Survey weights	B&B:16/20 bootstrap replicate weight X for B&B:16/20 cross-sectional respondents
WTC000	Survey weights	B&B:16/20 and B&B:16/17 response analysis weight
WTC001-WTC200	Survey weights	B&B:16/20 bootstrap replicate weight X for B&B:16/20 and B&B:16/17 respondents

NOTE: BA = bachelor's degree; CIP = Classification of Instructional Programs; ESL = English as a second language; GMAT = Graduate Management Admission Test; GRE = Graduate Record Examination; IDR = income-driven repayment; IPEDS = Integrated Postsecondary Education Data System; LGBT = lesbian, gay, bisexual, transgender; LSAT = Law School Admission Test; MCAT = Medical College Admission Test; NPSAS = National Postsecondary Student Aid Study; PreK = prekindergarten; STEM = science, technology, engineering, and mathematics; TEACH = Teacher Education Assistance for College and Higher Education. This table includes variables and weights created for B&B:16/20 only. Variables derived for the base year, NPSAS:16, or the first follow-up, B&B:16/17, 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:16/20 derived variables begin with "B2," and 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 rederived as part of the B&B:16/17 study.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



# Appendix J. Nonresponse Bias Analysis

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**Table J-1. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled using weight B (B&B:16/20 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Control of baccalaureate-granting institution <sup>4</sup>						(Effect size = 0.03)				(Effect size = #)		
Public	6,830	3,950	63.22	62.85	63.82	-0.36	-0.58	63.22	63.22	#	#	
Private nonprofit	5,310	2,530	30.48	31.51	28.76	1.03*	3.38	30.48	30.48	#	#	
Private for-profit	5,010	2,610	6.31	5.64	7.42	-0.67*	-10.56	6.31	6.31	#	#	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.04)				(Effect size = #)		
New England	880	470	6.55	6.50	6.63	-0.05	-0.78	6.55	6.55	#	#	
Mideast	2,900	1,720	17.71	17.44	18.18	-0.28	-1.58	17.71	17.71	#	#	
Great Lakes	2,670	1,360	15.98	16.23	15.56	0.25	1.56	15.98	15.98	#	#	
Plains	1,380	670	7.66	8.00	7.11	0.33	4.33	7.66	7.66	#	#	
Southeast	4,070	2,100	22.72	23.09	22.10	0.37	1.64	22.72	22.72	#	#	
Southwest	1,960	1,020	10.27	10.12	10.53	-0.15	-1.49	10.27	10.27	#	#	
Rocky Mountains	920	360	4.16	4.57	3.47	0.41	9.93	4.16	4.16	#	#	
Far West	2,230	1,310	14.17	13.27	15.69	-0.91*	-6.40	14.17	14.17	#	#	
Outlying Areas	150	90	0.77	0.80	0.73	0.02	3.09	0.77	0.77	#	#	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>						(Effect size = 0.01)				(Effect size = #)		
1–2,907	4,530	2,070	11.38	11.60	11.02	0.22	1.89	11.38	11.38	#	#	
2,908–10,157	4,260	2,270	21.28	21.14	21.51	-0.14	-0.66	21.28	21.28	#	#	
10,158–27,396	4,140	2,420	30.97	30.86	31.15	-0.11	-0.35	30.97	30.97	#	#	
27,397 or more	4,220	2,340	36.37	36.41	36.31	0.04	0.10	36.37	36.37	#	#	
Pell Grant status in 2015–16						(Effect size = 0.07)				(Effect size = 0.01)		
Received	6,170	2,500	28.96	31.72	24.36	2.76*	9.52	28.96	28.96	#	#	
Did not receive	10,550	6,200	67.19	65.36	70.23	-1.83*	-2.72	67.19	67.07	-0.12	-0.19	
Not applicable	430	400	3.85	2.92	5.40	-0.93*	-24.21	3.85	3.97	0.12	3.24	
Pell Grant amount received in 2015–16 <sup>7</sup>						(Effect size = 0.07)				(Effect size = 0.01)		
None	10,550	6,200	67.19	65.36	70.23	-1.83*	-2.72	67.19	67.07	-0.12	-0.19	
\$1–\$2,888	2,340	930	10.00	11.01	8.31	1.01*	10.12	10.00	10.00	#	#	
\$2,889–\$5,774	2,390	980	11.63	12.78	9.73	1.14*	9.81	11.63	11.63	#	#	
\$5,775 or more	1,440	600	7.33	7.93	6.32	0.61*	8.27	7.33	7.33	#	#	
Not applicable	430	400	3.85	2.92	5.40	-0.93*	-24.21	3.85	3.97	0.12	3.24	

See notes at end of table.

**Table J-1. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.09)				(Effect size = #)		
Received	8,330	3,470	43.17	47.48	35.99	4.31*	9.99	43.17	43.17	#	#	
Did not receive	8,830	5,620	56.83	52.52	64.01	-4.31*	-7.59	56.83	56.83	#	#	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.09)				(Effect size = #)		
None	8,830	5,620	56.83	52.52	64.01	-4.31*	-7.59	56.83	56.83	#	#	
\$1–\$4,198	2,080	860	10.27	11.13	8.82	0.87*	8.44	10.27	10.27	#	#	
\$4,199–\$7,500	4,080	1,590	23.15	25.83	18.70	2.67*	11.55	23.15	23.15	#	#	
\$7,501–\$8,297	150	70	0.46	0.45	0.47	-0.01	-1.54	0.46	0.46	#	#	
\$8,298 or more	2,010	940	9.29	10.07	7.99	0.78*	8.38	9.29	9.29	#	#	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.03)				(Effect size = #)		
None	15,740	8,290	94.26	93.89	94.90	-0.38*	-0.40	94.26	94.25	-0.01	-0.01	
\$1–\$7,050	250	100	1.29	1.27	1.33	-0.02	-1.66	1.29	1.29	#	0.13	
\$7,051–\$12,752	240	110	1.42	1.36	1.52	-0.06	-4.15	1.42	1.42	#	0.13	
\$12,753–\$20,268	260	90	1.50	1.74	1.08	0.25*	16.46	1.50	1.49	-0.01	-0.77	
\$20,269 or more	240	110	1.54	1.75	1.18	0.21*	13.88	1.54	1.55	0.02	1.01	
Federal aid status in 2015–16						(Effect size = 0.11)				(Effect size = #)		
Received	11,220	4,700	55.52	60.75	46.80	5.23*	9.43	55.52	55.52	#	#	
Did not receive	5,150	3,670	37.78	33.51	44.90	-4.27*	-11.30	37.78	37.78	#	#	
Unknown	790	720	6.70	5.73	8.31	-0.96*	-14.41	6.70	6.70	#	#	
Institution aid status in 2015–16						(Effect size = 0.07)				(Effect size = #)		
Received	7,740	3,230	38.15	41.62	32.38	3.47*	9.08	38.15	38.15	#	#	
Did not receive	7,710	4,730	50.44	47.65	55.10	-2.79*	-5.54	50.44	50.44	#	#	
Unknown	1,710	1,130	11.40	10.73	12.53	-0.67*	-5.90	11.40	11.40	#	#	
State aid status in 2015–16						(Effect size = 0.05)				(Effect size = #)		
Received	3,110	1,260	18.80	20.65	15.71	1.85*	9.85	18.80	18.80	#	#	
Did not receive	12,250	6,670	69.80	68.50	71.96	-1.30*	-1.86	69.80	69.80	#	#	
Unknown	1,800	1,160	11.40	10.85	12.32	-0.55	-4.84	11.40	11.40	#	#	
Any aid status in 2015–16						(Effect size = 0.22)				(Effect size = 0.04)		
Received	14,350	6,270	74.03	79.97	64.13	5.94*	8.03	74.03	75.53	1.49*	2.02	
Did not receive	1,720	530	9.61	11.80	5.98	2.18*	22.70	9.61	9.61	#	#	
Unknown	1,090	2,290	16.35	8.23	29.89	-8.12*	-49.68	16.35	14.86	-1.49*	-9.14	

See notes at end of table.

**Table J-1. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security						(Effect size = 0.13)				(Effect size = #)		
Available	16,930	8,450	95.34	98.16	90.63	2.83*	2.96	95.34	95.34	#	#	
Not available	220	650	4.66	1.84	9.37	-2.83*	-60.59	4.66	4.66	#	#	
Veteran status in 2015–16						(Effect size = 0.03)				(Effect size = #)		
Veteran	1,400	770	4.04	3.51	4.91	-0.53*	-13.01	4.04	4.04	#	#	
Not a veteran	15,760	8,320	95.96	96.49	95.09	0.53*	0.55	95.96	95.96	#	#	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	90	40	0.54	0.54	0.53	#	0.62	0.54	0.54	#	#	
Asian, not Hispanic or Latino	1,080	780	8.23	7.00	10.27	-1.22*	-14.87	8.23	8.23	#	#	
Black, not Hispanic or Latino	2,130	1,040	9.59	9.55	9.66	-0.04	-0.44	9.59	9.59	#	#	
Hispanic or Latino, of any race	2,440	1,170	12.20	13.17	10.58	0.97*	7.96	12.20	12.20	#	#	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	10,670	5,030	62.51	65.06	58.27	2.55*	4.07	62.51	65.03	2.52*	4.04	
Two or more races, not Hispanic or Latino	590	220	3.13	3.62	2.31	0.49*	15.69	3.13	3.13	#	#	
Unknown	100	770	3.55	0.77	8.18	-2.78*	-78.29	3.55	1.03	-2.52*	-71.12	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	6,720	4,120	42.58	40.14	46.65	-2.44*	-5.73	42.58	42.58	#	#	
Female	10,430	4,960	57.33	59.86	53.12	2.53*	4.41	57.33	57.42	0.09	0.15	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.09)				(Effect size = #)		
None	4,740	3,350	37.15	33.14	43.82	-4.00*	-10.78	37.15	37.15	#	#	
\$1–\$19,500	3,080	1,470	20.18	21.08	18.67	0.91*	4.49	20.18	20.18	#	#	
\$19,501–\$29,500	3,210	1,350	19.19	21.31	15.66	2.12*	11.03	19.19	19.19	#	#	
\$29,501–\$45,000	3,090	1,470	14.97	15.85	13.51	0.88*	5.87	14.97	14.97	#	#	
\$45,001 or more	3,040	1,450	8.52	8.62	8.34	0.10	1.21	8.52	8.52	#	#	

See notes at end of table.

**Table J-1. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents		Means, base weighted			Respondents vs. eligible sample		Means			Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>						(Effect size = 0.08)				(Effect size = #)		
None	13,670	7,780	82.21	79.31	87.06	-2.91*	-3.54	82.21	82.21	#	#	
\$1–\$18,601	860	340	4.29	5.12	2.92	0.83*	19.24	4.29	4.29	#	#	
\$18,602–\$35,806	840	360	4.06	4.66	3.06	0.60*	14.72	4.06	4.06	#	#	
\$35,807–\$61,500	920	310	4.58	5.13	3.66	0.55*	12.04	4.58	4.58	#	#	
\$61,501 or more	860	300	4.85	5.78	3.29	0.93*	19.25	4.85	4.85	#	#	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>						(Effect size = 0.10)				(Effect size = #)		
None	4,210	3,160	33.74	29.19	41.32	-4.55*	-13.49	33.74	33.74	#	#	
\$1–\$22,500	3,180	1,560	20.93	21.54	19.91	0.61	2.93	20.93	20.93	#	#	
\$22,501–\$34,149	3,220	1,480	18.64	20.15	16.14	1.50*	8.06	18.64	18.64	#	#	
\$34,150–\$55,615	3,200	1,520	13.52	14.47	11.93	0.95*	7.03	13.52	13.52	#	#	
\$55,616 or more	3,350	1,370	13.17	14.66	10.70	1.49*	11.28	13.17	13.17	#	#	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>						(Effect size = 0.12)				(Effect size = #)		
None	1,830	1,020	11.78	11.59	12.09	-0.19	-1.60	11.78	11.78	#	#	
1–80	2,880	1,220	16.63	18.11	14.17	1.48*	8.89	16.63	16.63	#	#	
81–105	2,970	1,150	15.44	17.67	11.71	2.24*	14.49	15.44	15.44	#	#	
106–116	2,800	1,080	12.85	14.65	9.86	1.80*	13.97	12.85	12.85	#	#	
117 or more	2,470	1,470	9.56	8.79	10.85	-0.77*	-8.07	9.56	9.56	#	#	
Not applicable	4,210	3,160	33.74	29.19	41.32	-4.55*	-13.49	33.74	33.74	#	#	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>						(Effect size = 0.10)				(Effect size = #)		
None	1,830	1,020	11.78	11.59	12.09	-0.19	-1.60	11.78	11.78	#	#	
\$1–\$20,214	2,790	1,220	17.24	18.74	14.74	1.50*	8.70	17.24	17.24	#	#	
\$20,215–\$37,494	2,760	1,240	15.03	16.17	13.13	1.14*	7.59	15.03	15.03	#	#	
\$37,495–\$63,654	2,760	1,250	11.13	12.15	9.42	1.02*	9.19	11.13	11.13	#	#	
\$63,655 or more	2,800	1,200	11.10	12.17	9.30	1.08*	9.70	11.10	11.10	#	#	
Not applicable	4,210	3,160	33.74	29.19	41.32	-4.55*	-13.49	33.74	33.74	#	#	

See notes at end of table.

**Table J-1. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	1,840	1,050	10.67	10.07	11.68	-0.60*	-5.66	10.67	10.66	-0.01	-0.10	
Social/Behavioral sciences	1,770	740	13.44	14.64	11.37	1.22*	9.12	13.44	13.42	-0.01	-0.10	
Life sciences	1,790	760	11.74	12.97	9.61	1.26*	10.74	11.74	11.72	-0.01	-0.10	
Physical sciences/Mathematics	390	170	2.54	2.61	2.42	0.07	2.80	2.54	2.54	#	-0.10	
Computer/Information science	1,310	630	3.55	3.63	3.41	0.08	2.26	3.55	3.55	#	-0.10	
Engineering	1,040	550	7.05	7.23	6.73	0.19	2.65	7.05	7.04	-0.01	-0.10	
Education	1,780	690	5.17	5.64	4.36	0.48*	9.32	5.17	5.17	-0.01	-0.10	
Business/Management	1,990	1,370	18.98	16.86	22.63	-2.16*	-11.41	18.98	18.96	-0.02	-0.10	
Health	2,580	1,260	12.19	12.32	11.96	0.14	1.11	12.19	12.17	-0.01	-0.10	
Vocational/Technical	100	50	0.70	0.79	0.56	0.09	12.22	0.70	0.70	#	-0.10	
Other technical/professional	2,060	1,180	13.13	12.84	13.64	-0.30	-2.27	13.13	13.12	-0.01	-0.10	
Unknown	90	140	0.84	0.40	1.58	-0.44*	-53.23	0.84	0.95	0.12	13.97	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	9,210	4,520	64.44	66.86	60.41	2.42*	3.75	64.44	64.78	0.34	0.53	
24–29	3,520	2,110	19.34	18.05	21.49	-1.29*	-6.66	19.34	19.34	#	#	
30 or older	4,430	2,380	15.88	15.09	17.19	-0.79*	-4.96	15.88	15.88	#	#	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.



**Table J-1. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	370	390	2.14	1.62	2.99	-0.51*	-24.08	2.14	2.14	#	#	
No	12,570	5,540	64.13	69.19	55.69	5.06*	7.90	64.13	64.13	#	#	
Not applicable	4,210	3,160	33.74	29.19	41.32	-4.55*	-13.49	33.74	33.74	#	#	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-2. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>												
						(Effect size = ‡)				(Effect size = ‡)		
New England	230	140	3.88	3.79	4.02	-0.09	-2.20	3.88	3.66	-0.22	-5.59	
Mideast	1,000	700	14.63	14.23	15.29	-0.40	-2.74	14.63	15.15	0.52	3.53	
Great Lakes	1,200	670	16.62	17.02	15.96	0.40	2.40	16.62	16.51	-0.11	-0.65	
Plains	470	270	7.21	7.46	6.81	0.25	3.41	7.21	7.30	0.09	1.28	
Southeast	1,940	1,050	25.35	25.90	24.44	0.55	2.17	25.35	25.16	-0.19	-0.75	
Southwest	720	430	11.83	11.75	11.97	-0.08	-0.71	11.83	12.03	0.20	1.71	
Rocky Mountains	380	150	3.88	3.99	3.70	0.11	2.81	3.88	3.61	-0.27	-6.85	
Far West	880	540	16.23	15.55	17.35	-0.68	-4.22	16.23	16.27	0.04	0.27	
Outlying Areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>6</sup>						(Effect size = 0.01)				(Effect size = 0.03)		
1–11,413	1,730	960	19.93	19.68	20.33	-0.25	-1.24	19.93	20.34	0.41	2.08	
11,414–22,020	1,720	1,010	23.96	24.23	23.53	0.27	1.11	23.96	24.08	0.12	0.50	
22,021–35,263	1,670	1,010	27.19	27.02	27.48	-0.17	-0.64	27.19	26.07	-1.12	-4.13	
35,264 or more	1,710	970	28.92	29.08	28.66	0.16	0.54	28.92	29.51	0.59	2.04	
Pell Grant status in 2015–16						(Effect size = 0.08)				(Effect size = 0.01)		
Received	2,380	970	29.73	33.04	24.30	3.31*	11.13	29.73	30.07	0.34	1.14	
Did not receive	4,320	2,820	67.10	64.68	71.06	-2.42*	-3.60	67.10	66.59	-0.51	-0.76	
Not applicable	130	150	3.17	2.28	4.64	-0.89*	-28.19	3.17	3.35	0.17	5.43	
Pell Grant amount received in 2015–16 <sup>7</sup>						(Effect size = 0.08)				(Effect size = 0.01)		
None	4,320	2,820	67.10	64.68	71.06	-2.42*	-3.60	67.10	66.59	-0.51	-0.76	
\$1–\$2,887	890	350	9.89	11.06	7.97	1.17*	11.81	9.89	9.98	0.09	0.89	
\$2,888–\$5,774	930	410	12.45	13.80	10.23	1.35*	10.87	12.45	12.55	0.10	0.82	
\$5,775 or more	560	220	7.39	8.17	6.09	0.79*	10.67	7.39	7.54	0.15	2.03	
Not applicable	130	150	3.17	2.28	4.64	-0.89*	-28.19	3.17	3.35	0.17	5.43	

See notes at end of table.

**Table J-2. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.09)				(Effect size = 0.01)		
Received	3,070	1,320	40.57	45.17	33.03	4.60*	11.34	40.57	41.11	0.53	1.32	
Did not receive	3,760	2,620	59.43	54.83	66.97	-4.60*	-7.74	59.43	58.89	-0.53	-0.90	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.09)				(Effect size = 0.02)		
None	3,760	2,620	59.43	54.83	66.97	-4.60*	-7.74	59.43	58.89	-0.53	-0.90	
\$1–\$4,000	820	350	10.62	11.63	8.96	1.01*	9.49	10.62	10.69	0.08	0.72	
\$4,001–\$6,250	730	320	9.15	9.99	7.78	0.84*	9.13	9.15	9.19	0.04	0.43	
\$6,251–\$7,500	830	350	12.02	13.48	9.62	1.46*	12.17	12.02	11.90	-0.12	-0.98	
\$7,501 or more	680	300	8.78	10.08	6.66	1.29*	14.72	8.78	9.32	0.54	6.11	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.05)				(Effect size = 0.01)		
None	6,390	3,640	92.14	92.75	91.16	0.60	0.65	92.14	92.01	-0.14	-0.15	
\$1–\$6,000	90	30	1.16	1.19	1.10	0.04	3.16	1.16	1.20	0.04	3.51	
\$6,001–\$11,326	70	40	1.05	1.02	1.10	-0.03	-3.01	1.05	1.02	-0.03	-2.55	
\$11,327–\$16,800	70	40	1.10	1.19	0.96	0.09	7.95	1.10	1.06	-0.04	-3.91	
\$16,801 or more	80	40	1.38	1.58	1.05	0.20	14.57	1.38	1.37	-0.01	-0.39	
Not applicable	130	150	3.17	2.28	4.64	-0.89*	-28.19	3.17	3.35	0.17	5.43	
Federal aid status in 2015–16						(Effect size = 0.12)				(Effect size = 0.02)		
Received	4,150	1,780	53.06	58.89	43.49	5.83*	10.99	53.06	53.57	0.51	0.96	
Did not receive	2,310	1,830	39.79	34.76	48.05	-5.03*	-12.65	39.79	38.99	-0.80	-2.02	
Unknown	370	340	7.15	6.35	8.46	-0.80*	-11.18	7.15	7.44	0.29	4.11	
Institution aid status in 2015–16						(Effect size = 0.07)				(Effect size = 0.02)		
Received	2,020	870	27.80	30.69	23.07	2.88*	10.38	27.80	27.79	-0.02	-0.06	
Did not receive	4,050	2,590	59.07	56.27	63.65	-2.79*	-4.73	59.07	58.54	-0.53	-0.90	
Unknown	760	490	13.13	13.04	13.28	-0.09	-0.69	13.13	13.68	0.55	4.17	
State aid status in 2015–16						(Effect size = 0.05)				(Effect size = 0.01)		
Received	1,610	720	21.17	23.02	18.14	1.85*	8.72	21.17	20.98	-0.19	-0.88	
Did not receive	4,500	2,760	66.53	64.78	69.41	-1.76*	-2.64	66.53	66.23	-0.30	-0.45	
Unknown	710	470	12.30	12.21	12.45	-0.09	-0.73	12.30	12.78	0.48	3.94	
Any aid status in 2015–16						(Effect size = 0.24)				(Effect size = 0.05)		
Received	5,310	2,350	70.02	76.79	58.92	6.76*	9.66	70.02	72.06	2.04*	2.91	
Did not receive	940	290	11.28	13.71	7.31	2.42*	21.48	11.28	11.31	0.03	0.24	
Unknown	580	1,310	18.69	9.51	33.77	-9.19*	-49.14	18.69	16.63	-2.06*	-11.03	

See notes at end of table.

**Table J-2. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.13)				(Effect size = #)		
Available	6,740	3,600	95.28	98.08	90.68	2.80*	2.94	95.28	95.20	-0.08	-0.09	
Not available	90	350	4.72	1.92	9.32	-2.80*	-59.40	4.72	4.80	0.08	1.74	
Veteran status in 2015–16						(Effect size = 0.02)				(Effect size = #)		
Veteran	490	240	2.90	2.62	3.37	-0.29	-9.86	2.90	2.83	-0.08	-2.74	
Not a veteran	6,340	3,710	97.10	97.38	96.63	0.29	0.29	97.10	97.17	0.08	0.08	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Asian, not Hispanic or Latino	430	360	8.77	7.57	10.73	-1.20*	-13.64	8.77	8.81	0.04	0.42	
Black, not Hispanic or Latino	590	330	8.57	8.71	8.32	0.15	1.74	8.57	8.59	0.03	0.33	
Hispanic or Latino, of any race	910	400	12.58	13.71	10.72	1.13*	9.01	12.58	12.64	0.06	0.47	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	4,570	2,420	62.60	64.61	59.31	2.01*	3.20	62.60	64.95	2.34*	3.75	
Two or more races, not Hispanic or Latino	230	100	3.21	3.76	2.31	0.55*	17.04	3.21	3.29	0.08	2.59	
Unknown	40	320	3.44	0.70	7.95	-2.75*	-79.74	3.44	0.89	-2.55*	-74.09	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	2,760	1,800	43.19	41.08	46.64	-2.10*	-4.87	43.19	43.34	0.15	0.34	
Female	4,070	2,140	56.68	58.92	53.02	2.23*	3.94	56.68	56.66	-0.02	-0.04	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.09)				(Effect size = 0.02)		
None	2,340	1,770	39.06	35.03	45.68	-4.03*	-10.32	39.06	39.42	0.36	0.91	
\$1–\$14,250	1,090	580	14.75	14.75	14.75	#	0.01	14.75	13.99	-0.76	-5.13	
\$14,251–\$25,500	1,150	520	16.06	17.64	13.47	1.58*	9.83	16.06	16.20	0.14	0.89	
\$25,501–\$33,086	1,100	560	15.56	16.94	13.30	1.38*	8.86	15.56	15.54	-0.01	-0.09	
\$33,087 or more	1,150	520	14.57	15.64	12.81	1.07*	7.37	14.57	14.84	0.27	1.86	

See notes at end of table.

**Table J-2. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.09)				(Effect size = 0.02)		
None	5,420	3,410	82.75	79.64	87.87	-3.12*	-3.76	82.75	82.74	-0.01	-0.01	
\$1–\$18,985	350	140	4.31	5.31	2.68	1.00*	23.07	4.31	4.41	0.09	2.14	
\$18,986–\$38,246	350	130	4.16	4.93	2.89	0.77*	18.57	4.16	4.33	0.16	3.95	
\$38,247–\$68,981	340	140	4.35	4.65	3.86	0.30	6.81	4.35	3.99	-0.36	-8.23	
\$68,982 or more	360	120	4.42	5.47	2.70	1.05*	23.77	4.42	4.53	0.11	2.50	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = 0.02)		
None	2,030	1,650	35.21	30.41	43.10	-4.81*	-13.65	35.21	35.49	0.28	0.79	
\$1–\$17,400	1,150	630	16.06	16.01	16.13	-0.04	-0.27	16.06	15.57	-0.49	-3.04	
\$17,401–\$28,897	1,190	590	17.04	18.36	14.88	1.32*	7.72	17.04	16.92	-0.12	-0.71	
\$28,898–\$47,422	1,210	560	16.24	18.05	13.27	1.81*	11.14	16.24	16.84	0.60	3.67	
\$47,423 or more	1,250	520	15.44	17.17	12.62	1.72*	11.16	15.44	15.18	-0.26	-1.71	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.12)				(Effect size = 0.01)		
None	770	470	11.59	11.23	12.20	-0.37	-3.17	11.59	11.37	-0.22	-1.92	
1–75	1,000	490	14.21	15.20	12.57	0.99*	7.00	14.21	13.91	-0.29	-2.07	
76–101	1,080	440	14.06	16.16	10.61	2.10*	14.96	14.06	14.38	0.32	2.24	
102–113	1,090	420	13.31	15.44	9.83	2.12*	15.95	13.31	13.27	-0.04	-0.32	
114 or more	860	480	11.61	11.56	11.69	-0.05	-0.41	11.61	11.58	-0.03	-0.29	
Not applicable	2,030	1,650	35.21	30.41	43.10	-4.81*	-13.65	35.21	35.49	0.28	0.79	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = 0.02)		
None	770	470	11.59	11.23	12.20	-0.37	-3.17	11.59	11.37	-0.22	-1.92	
\$1–\$16,130	990	480	13.43	14.31	11.99	0.88*	6.52	13.43	12.98	-0.46	-3.39	
\$16,131–\$29,915	1,000	470	14.00	15.46	11.60	1.46*	10.45	14.00	14.35	0.35	2.53	
\$29,916–\$55,332	1,020	450	12.92	14.21	10.80	1.29*	9.98	12.92	13.03	0.12	0.89	
\$55,333 or more	1,030	430	12.85	14.39	10.31	1.55*	12.03	12.85	12.78	-0.07	-0.54	
Not applicable	2,030	1,650	35.21	30.41	43.10	-4.81*	-13.65	35.21	35.49	0.28	0.79	

See notes at end of table.

**Table J-2. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Humanities	540	360	9.44	8.64	10.78	-0.81*	-8.58	9.44	9.27	-0.17	-1.77	
Social/Behavioral sciences	840	400	13.68	14.72	11.90	1.07*	7.83	13.68	13.77	0.10	0.72	
Life sciences	910	430	12.59	13.82	10.51	1.25*	9.95	12.59	12.63	0.04	0.29	
Physical sciences/Mathematics	150	90	2.45	2.27	2.75	-0.18	-7.48	2.45	2.33	-0.11	-4.63	
Computer/Information science	330	150	3.32	3.55	2.93	0.23	7.05	3.32	3.48	0.17	5.01	
Engineering	520	310	8.43	8.48	8.35	0.05	0.60	8.43	8.10	-0.34	-4.00	
Education	880	350	5.51	6.23	4.28	0.74*	13.42	5.51	5.76	0.25	4.47	
Business/Management	750	530	17.50	15.38	21.09	-2.16*	-12.34	17.50	17.13	-0.37	-2.10	
Health	760	400	10.74	11.06	10.20	0.33	3.03	10.74	11.15	0.41	3.80	
Vocational/Technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other technical/professional	880	540	14.50	14.39	14.69	-0.11	-0.78	14.50	14.51	0.01	0.05	
Unknown	60	100	1.01	0.45	1.96	-0.57*	-56.51	1.01	0.99	-0.02	-1.81	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	4,250	2,420	66.81	68.37	64.24	1.57*	2.34	66.81	66.66	-0.15	-0.23	
24–29	1,470	920	20.91	20.11	22.22	-0.80	-3.83	20.91	21.38	0.47	2.25	
30 or older	1,110	570	11.84	11.52	12.37	-0.32	-2.73	11.84	11.97	0.12	1.04	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table J-2. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	90	110	1.83	1.47	2.41	-0.35*	-19.40	1.83	1.84	0.01	0.66	
No	4,710	2,190	62.96	68.12	54.49	5.16*	8.20	62.96	62.67	-0.29	-0.46	
Not applicable	2,030	1,650	35.21	30.41	43.10	-4.81*	-13.65	35.21	35.49	0.28	0.79	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-3. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.06)				(Effect size = 0.04)		
New England	640	310	13.38	13.04	13.99	-0.33	-2.50	13.38	13.88	0.50	3.75	
Mideast	1,310	720	26.21	25.65	27.24	-0.56	-2.15	26.21	25.17	-1.04	-3.95	
Great Lakes	900	400	15.23	15.24	15.23	#	0.03	15.23	15.69	0.45	2.96	
Plains	590	220	8.53	8.94	7.78	0.41	4.80	8.53	8.27	-0.26	-3.03	
Southeast	920	440	17.63	17.84	17.26	0.20	1.16	17.63	17.82	0.18	1.05	
Southwest	240	110	4.13	4.17	4.07	0.03	0.83	4.13	4.04	-0.10	-2.36	
Rocky Mountains	250	70	4.71	5.64	3.02	0.93*	19.69	4.71	4.98	0.26	5.62	
Far West	390	210	8.59	7.72	10.17	-0.87	-10.10	8.59	8.35	-0.23	-2.74	
Outlying Areas	80	40	1.59	1.77	1.25	0.18	11.65	1.59	1.81	0.23	14.19	
Total enrollment of baccalaureate-granting institution <sup>6</sup>						(Effect size = 0.04)				(Effect size = 0.02)		
1–2,395	1,380	590	22.05	22.50	21.23	0.45	2.03	22.05	22.15	0.10	0.43	
2,396–4,774	1,360	610	23.45	24.10	22.27	0.65	2.75	23.45	23.41	-0.04	-0.16	
4,775–11,971	1,270	700	25.78	24.14	28.79	-1.64*	-6.38	25.78	25.20	-0.59	-2.28	
11,972 or more	1,310	640	28.71	29.26	27.71	0.55	1.92	28.71	29.24	0.53	1.84	
Pell Grant status in 2015–16						(Effect size = 0.08)				(Effect size = 0.04)		
Received	1,620	610	26.87	29.07	22.84	2.20*	8.21	26.87	26.67	-0.20	-0.74	
Did not receive	3,560	1,780	68.90	68.12	70.33	-0.78	-1.14	68.90	69.96	1.06	1.53	
Not applicable	140	140	4.23	2.81	6.82	-1.42*	-33.61	4.23	3.37	-0.86	-20.25	
Pell Grant amount received in 2015–16 <sup>7</sup>						(Effect size = 0.08)				(Effect size = 0.04)		
None	3,560	1,780	68.90	68.12	70.33	-0.78	-1.14	68.90	69.96	1.06	1.53	
\$1–\$2,888	520	200	8.90	9.74	7.37	0.84*	9.42	8.90	8.92	0.01	0.12	
\$2,889–\$5,774	670	240	10.74	11.67	9.03	0.94*	8.71	10.74	10.62	-0.12	-1.08	
\$5,775 or more	420	180	7.23	7.66	6.44	0.43	5.96	7.23	7.13	-0.09	-1.31	
Not applicable	140	140	4.23	2.81	6.82	-1.42*	-33.61	4.23	3.37	-0.86	-20.25	

See notes at end of table.



**Table J-3. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.07)				(Effect size = 0.02)		
Received	2,880	1,130	49.01	52.51	42.61	3.50*	7.15	49.01	48.18	-0.82	-1.67	
Did not receive	2,440	1,400	50.99	47.49	57.39	-3.50*	-6.87	50.99	51.82	0.82	1.61	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.08)				(Effect size = 0.04)		
None	2,440	1,400	50.99	47.49	57.39	-3.50*	-6.87	50.99	51.82	0.82	1.61	
\$1–\$5,500	830	310	13.73	15.43	10.63	1.70*	12.38	13.73	14.23	0.50	3.66	
\$5,501–\$7,500	1,500	530	24.75	26.86	20.88	2.12*	8.55	24.75	24.42	-0.33	-1.33	
\$7,501 or more	550	300	10.53	10.22	11.10	-0.31	-2.96	10.53	9.53	-0.99*	-9.44	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.07)				(Effect size = 0.04)		
None	4,700	2,210	87.73	88.62	86.11	0.89	1.01	87.73	88.52	0.79	0.90	
\$1–\$9,000	120	50	1.85	1.84	1.86	-0.01	-0.46	1.85	1.96	0.11	6.14	
\$9,001–\$15,082	120	40	2.00	1.99	2.03	-0.01	-0.74	2.00	1.92	-0.08	-4.19	
\$15,083–\$24,196	120	40	2.05	2.34	1.52	0.29	14.23	2.05	2.08	0.03	1.47	
\$24,197 or more	120	50	2.14	2.40	1.66	0.26	12.32	2.14	2.15	0.01	0.43	
Not applicable	140	140	4.23	2.81	6.82	-1.42*	-33.61	4.23	3.37	-0.86	-20.25	
Federal aid status in 2015–16						(Effect size = 0.10)				(Effect size = 0.04)		
Received	3,530	1,370	58.75	63.41	50.24	4.66*	7.93	58.75	58.23	-0.52	-0.89	
Did not receive	1,610	980	35.40	32.24	41.17	-3.16*	-8.92	35.40	36.74	1.34	3.78	
Unknown	180	180	5.85	4.35	8.59	-1.50*	-25.67	5.85	5.03	-0.81	-13.92	
Institution aid status in 2015–16						(Effect size = 0.10)				(Effect size = 0.04)		
Received	3,560	1,360	59.14	63.55	51.11	4.40*	7.44	59.14	59.47	0.32	0.54	
Did not receive	1,450	930	32.87	30.27	37.60	-2.59*	-7.89	32.87	33.65	0.79	2.39	
Unknown	310	250	7.99	6.18	11.29	-1.81*	-22.65	7.99	6.88	-1.11	-13.86	
State aid status in 2015–16						(Effect size = 0.07)				(Effect size = 0.03)		
Received	1,110	380	16.82	18.87	13.08	2.05*	12.19	16.82	17.37	0.54	3.23	
Did not receive	3,820	1,880	73.56	72.96	74.64	-0.60	-0.81	73.56	73.98	0.43	0.58	
Unknown	390	280	9.62	8.16	12.28	-1.46*	-15.13	9.62	8.65	-0.97	-10.09	
Any aid status in 2015–16						(Effect size = 0.21)				(Effect size = 0.02)		
Received	4,680	1,920	80.98	85.79	72.20	4.81*	5.94	80.98	81.81	0.83	1.02	
Did not receive	410	90	6.84	8.57	3.68	1.73*	25.29	6.84	6.76	-0.08	-1.16	
Unknown	230	520	12.18	5.64	24.12	-6.54*	-53.70	12.18	11.43	-0.75	-6.15	

See notes at end of table.

**Table J-3. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.14)				(Effect size = 0.01)		
Available	5,250	2,360	95.50	98.37	90.26	2.87*	3.01	95.50	95.71	0.21	0.22	
Not available	70	170	4.50	1.63	9.74	-2.87*	-63.83	4.50	4.29	-0.21	-4.70	
Veteran status in 2015–16						(Effect size = 0.02)				(Effect size = 0.01)		
Veteran	340	170	3.33	2.95	4.01	-0.38	-11.30	3.33	3.48	0.16	4.72	
Not a veteran	4,970	2,360	96.67	97.05	95.99	0.38	0.39	96.67	96.52	-0.16	-0.16	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Asian, not Hispanic or Latino	330	200	7.60	6.35	9.89	-1.25*	-16.51	7.60	7.71	0.11	1.46	
Black, not Hispanic or Latino	440	250	8.97	8.42	9.97	-0.55	-6.13	8.97	8.59	-0.38	-4.24	
Hispanic or Latino, of any race	560	260	10.81	11.91	8.81	1.09*	10.13	10.81	11.09	0.28	2.61	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	3,720	1,580	65.60	68.61	60.12	3.00*	4.58	65.60	67.99	2.39*	3.64	
Two or more races, not Hispanic or Latino	200	60	3.07	3.41	2.44	0.35*	11.27	3.07	2.93	-0.14	-4.55	
Unknown	30	160	3.36	0.87	7.91	-2.49*	-74.12	3.36	1.17	-2.19*	-65.24	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	2,000	1,150	42.08	39.14	47.46	-2.95*	-7.00	42.08	41.86	-0.22	-0.53	
Female	3,310	1,380	57.92	60.86	52.54	2.95*	5.09	57.92	58.14	0.22	0.38	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.09)				(Effect size = 0.03)		
None	1,680	1,050	36.09	32.03	43.50	-4.06*	-11.25	36.09	35.56	-0.53	-1.46	
\$1–\$19,299	920	360	16.57	17.69	14.51	1.13*	6.81	16.57	17.32	0.76	4.57	
\$19,300–\$27,000	1,190	420	19.64	21.69	15.89	2.05*	10.46	19.64	19.96	0.32	1.64	
\$27,001–\$34,656	670	280	11.76	12.75	9.96	0.99*	8.40	11.76	11.75	-0.01	-0.09	
\$34,657 or more	850	430	15.95	15.83	16.15	-0.11	-0.70	15.95	15.40	-0.54	-3.40	

See notes at end of table.

**Table J-3. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.06)			(Effect size = 0.02)			
None	4,170	2,130	81.66	79.31	85.94	-2.35*	-2.87	81.66	82.08	0.42	0.51	
\$1–\$20,000	300	100	4.50	5.20	3.22	0.70*	15.60	4.50	4.50	#	-0.06	
\$20,001–\$37,659	260	130	4.76	5.08	4.19	0.31	6.60	4.76	4.40	-0.36	-7.55	
\$37,660–\$70,167	290	100	4.60	5.13	3.64	0.53*	11.51	4.60	4.51	-0.10	-2.08	
\$70,168 or more	300	90	4.47	5.27	3.01	0.80*	17.89	4.47	4.51	0.04	0.90	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.09)			(Effect size = 0.04)			
None	1,500	980	33.10	28.84	40.87	-4.25*	-12.85	33.10	32.68	-0.42	-1.28	
\$1–\$21,500	970	380	17.94	19.21	15.63	1.27*	7.05	17.94	19.09	1.15*	6.41	
\$21,501–\$30,000	1,000	380	16.89	18.31	14.29	1.42*	8.43	16.89	17.20	0.31	1.84	
\$30,001–\$49,651	890	420	16.02	16.13	15.81	0.11	0.70	16.02	15.20	-0.82*	-5.11	
\$49,652 or more	970	380	16.05	17.50	13.40	1.45*	9.05	16.05	15.83	-0.22	-1.36	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)			(Effect size = 0.02)			
None	670	300	12.72	12.99	12.22	0.27	2.16	12.72	13.22	0.51	3.98	
1–74	810	300	13.82	14.96	11.75	1.13*	8.20	13.82	13.97	0.15	1.06	
75–99	840	290	13.78	15.48	10.68	1.70*	12.32	13.78	13.78	#	#	
100–112	840	290	13.69	15.61	10.20	1.91*	13.97	13.69	13.91	0.22	1.59	
113 or more	650	380	12.89	12.12	14.29	-0.76*	-5.93	12.89	12.44	-0.45	-3.47	
Not applicable	1,500	980	33.10	28.84	40.87	-4.25*	-12.85	33.10	32.68	-0.42	-1.28	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.09)			(Effect size = 0.02)			
None	670	300	12.72	12.99	12.22	0.27	2.16	12.72	13.22	0.51	3.98	
\$1–\$18,636	810	290	13.55	14.84	11.18	1.30*	9.57	13.55	14.11	0.57	4.17	
\$18,637–\$30,377	780	320	13.87	14.80	12.17	0.93*	6.71	13.87	13.55	-0.32	-2.34	
\$30,378–\$57,552	770	330	13.60	14.22	12.47	0.62	4.54	13.60	13.45	-0.15	-1.09	
\$57,553 or more	790	310	13.17	14.30	11.09	1.14*	8.63	13.17	12.99	-0.17	-1.33	
Not applicable	1,500	980	33.10	28.84	40.87	-4.25*	-12.85	33.10	32.68	-0.42	-1.28	

See notes at end of table.

**Table J-3. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	630	330	13.63	13.28	14.29	-0.36	-2.61	13.63	13.91	0.29	2.10	
Social/Behavioral sciences	760	300	14.91	16.13	12.58	1.26*	8.42	14.91	14.48	-0.43	-2.87	
Life sciences	790	270	11.51	12.82	9.00	1.35*	11.74	11.51	11.43	-0.07	-0.64	
Physical sciences/Mathematics	230	80	3.23	3.72	2.29	0.50*	15.61	3.23	3.42	0.20	6.09	
Computer/Information science	170	90	3.03	2.92	3.25	-0.12	-3.83	3.03	2.87	-0.16	-5.33	
Engineering	310	130	4.98	5.38	4.22	0.41*	8.25	4.98	5.55	0.57*	11.35	
Education	640	240	4.90	4.84	5.03	-0.07	-1.43	4.90	4.35	-0.55*	-11.28	
Business/Management	570	370	20.15	18.25	23.78	-1.95*	-9.70	20.15	20.71	0.56	2.76	
Health	570	280	12.18	12.06	12.41	-0.12	-1.01	12.18	11.62	-0.56	-4.58	
Vocational/Technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other technical/professional	480	280	10.42	9.88	11.44	-0.55	-5.31	10.42	10.51	0.09	0.87	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	3,970	1,670	70.42	73.68	64.46	3.26*	4.63	70.42	72.07	1.65	2.35	
24–29	660	430	14.78	12.49	18.97	-2.29*	-15.52	14.78	13.64	-1.15	-7.75	
30 or older	690	410	14.60	13.83	16.01	-0.77	-5.29	14.60	14.29	-0.31	-2.14	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table J-3. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	80	90	2.23	1.57	3.42	-0.66*	-29.50	2.23	2.17	-0.05	-2.33	
No	3,740	1,460	64.68	69.59	55.71	4.91*	7.59	64.68	65.15	0.48	0.74	
Not applicable	1,500	980	33.10	28.84	40.87	-4.25*	-12.85	33.10	32.68	-0.42	-1.28	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-4. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Midwest	580	300	7.55	7.25	7.92	-0.30	-3.92	7.55	7.37	-0.18	-2.33	
Great Lakes	570	290	13.18	12.97	13.43	-0.20	-1.53	13.18	12.07	-1.11	-8.39	
Plains	320	180	8.05	8.77	7.14	0.72	8.94	8.05	8.38	0.33	4.08	
Southeast	1,210	620	20.98	21.20	20.70	0.22	1.06	20.98	22.00	1.02	4.85	
Southwest	1,000	480	24.28	25.19	23.13	0.91	3.74	24.28	22.73	-1.55	-6.39	
Rocky Mountains	300	140	4.28	5.10	3.24	0.82	19.14	4.28	5.67	1.38	32.28	
Far West	960	560	20.56	18.86	22.71	-1.70	-8.25	20.56	21.25	0.69	3.38	
Outlying Areas	60	40	0.80	0.56	1.09	-0.23	-29.11	0.80	0.45	-0.34	-42.96	
Total enrollment of baccalaureate-granting institution <sup>6</sup>						(Effect size = 0.04)				(Effect size = 0.03)		
1–1,384	1,290	620	12.25	11.56	13.14	-0.70	-5.68	12.25	11.26	-1.00	-8.12	
1,385–3,213	1,320	620	11.81	11.66	12.00	-0.15	-1.27	11.81	12.09	0.27	2.32	
3,214–16,103	1,240	650	14.14	13.02	15.56	-1.12	-7.91	14.14	14.16	0.02	0.14	
16,104 or more	1,170	710	61.79	63.76	59.31	1.96	3.18	61.79	62.49	0.70	1.13	
Pell Grant status in 2015–16						(Effect size = 0.07)				(Effect size = 0.16)		
Received	2,180	910	31.38	31.80	30.84	0.42	1.35	31.38	28.94	-2.44	-7.79	
Did not receive	2,670	1,600	59.83	57.56	62.72	-2.28	-3.80	59.83	57.89	-1.94	-3.25	
Not applicable	160	100	8.79	10.64	6.44	1.85	21.08	8.79	13.18	4.39*	49.94	
Pell Grant amount received in 2015–16 <sup>7</sup>						(Effect size = 0.07)				(Effect size = 0.16)		
None	2,670	1,600	59.83	57.56	62.72	-2.28	-3.80	59.83	57.89	-1.94	-3.25	
\$1–\$2,887	860	340	11.62	11.64	11.59	0.02	0.19	11.62	10.77	-0.84	-7.26	
\$2,888–\$5,774	860	370	12.54	13.38	11.47	0.84	6.73	12.54	11.98	-0.56	-4.43	
\$5,775 or more	460	200	7.22	6.78	7.78	-0.44	-6.12	7.22	6.18	-1.04	-14.46	
Not applicable	160	100	8.79	10.64	6.44	1.85	21.08	8.79	13.18	4.39*	49.94	

See notes at end of table.

**Table J-4. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.08)				(Effect size = 0.03)		
Received	2,380	1,010	41.01	45.16	35.76	4.14*	10.10	41.01	39.62	-1.39	-3.40	
Did not receive	2,630	1,600	58.99	54.84	64.24	-4.14*	-7.02	58.99	60.38	1.39	2.36	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.09)				(Effect size = 0.04)		
None	2,630	1,600	58.99	54.84	64.24	-4.14*	-7.02	58.99	60.38	1.39	2.36	
\$1–\$3,666	610	250	11.26	12.12	10.18	0.85	7.59	11.26	10.75	-0.51	-4.53	
\$3,667–\$6,251	590	250	10.39	11.86	8.53	1.47	14.13	10.39	10.44	0.05	0.49	
\$6,252–\$10,937	590	250	9.71	10.46	8.77	0.74	7.66	9.71	8.85	-0.86	-8.88	
\$10,938 or more	590	260	9.65	10.73	8.29	1.08	11.15	9.65	9.58	-0.07	-0.74	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = †)				(Effect size = †)		
None	4,650	2,450	89.46	87.43	92.03	-2.03	-2.27	89.46	85.05	-4.40*	-4.92	
\$1–\$5,682	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,683–\$10,241	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$10,242–\$18,258	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$18,259 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Not applicable	160	100	8.79	10.64	6.44	1.85	21.08	8.79	13.18	4.39*	49.94	
Federal aid status in 2015–15						(Effect size = 0.05)				(Effect size = 0.06)		
Received	3,540	1,550	64.55	66.64	61.90	2.09	3.24	64.55	61.98	-2.57	-3.98	
Did not receive	1,240	860	29.13	26.72	32.18	-2.41*	-8.26	29.13	30.71	1.58	5.43	
Unknown	240	200	6.32	6.63	5.92	0.31	4.97	6.32	7.31	0.99	15.65	
Institution aid status in 2015–16						(Effect size = 0.01)				(Effect size = 0.03)		
Received	2,160	1,010	40.44	40.92	39.84	0.47	1.17	40.44	39.06	-1.38	-3.42	
Did not receive	2,210	1,220	48.94	48.64	49.31	-0.30	-0.61	48.94	50.46	1.52	3.11	
Unknown	640	390	10.62	10.44	10.84	-0.18	-1.66	10.62	10.48	-0.14	-1.30	
State aid status in 2015–16						(Effect size = 0.02)				(Effect size = 0.04)		
Received	390	170	4.55	4.18	5.02	-0.37	-8.19	4.55	3.80	-0.75	-16.53	
Did not receive	3,930	2,030	84.37	85.04	83.51	0.67	0.80	84.37	85.28	0.92	1.09	
Unknown	700	420	11.09	10.79	11.47	-0.30	-2.70	11.09	10.92	-0.17	-1.50	
Any aid status in 2015–16						(Effect size = 0.16)				(Effect size = 0.02)		
Received	4,360	2,000	80.62	82.96	77.66	2.34*	2.90	80.62	79.92	-0.70	-0.87	
Did not receive	370	150	6.32	8.58	3.45	2.26*	35.80	6.32	6.43	0.11	1.77	
Unknown	280	460	13.06	8.46	18.89	-4.60*	-35.23	13.06	13.65	0.59	4.54	

See notes at end of table.

**Table J-4. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.13)				(Effect size = 0.01)		
Available	4,950	2,490	95.12	97.87	91.63	2.75*	2.89	95.12	94.92	-0.20	-0.21	
Not available	70	120	4.88	2.13	8.37	-2.75*	-56.30	4.88	5.08	0.20	4.04	
Veteran status in 2015–16						(Effect size = 0.06)				(Effect size = #)		
Veteran	570	370	18.79	16.58	21.61	-2.22	-11.80	18.79	18.83	0.04	0.21	
Not a veteran	4,440	2,250	81.21	83.42	78.39	2.22	2.73	81.21	81.17	-0.04	-0.05	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Asian, not Hispanic or Latino	320	220	5.81	4.33	7.70	-1.49*	-25.58	5.81	4.90	-0.91	-15.65	
Black, not Hispanic or Latino	1,100	460	22.92	25.20	20.03	2.28	9.95	22.92	24.47	1.55	6.76	
Hispanic or Latino, of any race	970	500	15.06	14.14	16.22	-0.92	-6.10	15.06	13.10	-1.96*	-13.00	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	2,370	1,040	46.65	50.24	42.10	3.59	7.70	46.65	51.63	4.99*	10.69	
Two or more races, not Hispanic or Latino	170	60	2.57	3.19	1.79	0.62	24.00	2.57	2.41	-0.16	-6.18	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	1,960	1,170	38.92	35.24	43.59	-3.68*	-9.46	38.92	38.50	-0.42	-1.08	
Female	3,050	1,440	60.98	64.76	56.19	3.78*	6.19	60.98	61.50	0.52	0.85	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.12)				(Effect size = 0.06)		
None	720	540	23.04	18.33	29.01	-4.71*	-20.45	23.04	22.03	-1.02	-4.41	
\$1–\$29,729	1,050	540	26.90	29.69	23.36	2.79*	10.39	26.90	27.98	1.09	4.04	
\$29,730–\$44,456	1,060	530	18.77	18.29	19.38	-0.48	-2.56	18.77	17.13	-1.63	-8.70	
\$44,457–\$55,841	1,090	500	15.24	15.98	14.31	0.74	4.85	15.24	15.13	-0.11	-0.75	
\$55,842 or more	1,090	500	16.05	17.71	13.95	1.66	10.35	16.05	17.72	1.67	10.43	

See notes at end of table.



**Table J-4. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non- respondents	Means, base weighted			Respondents vs. Eligible sample		Means		Respondents vs. Eligible sample		
			Eligible sample	Respondent	Non- respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>						(Effect size = 0.11)				(Effect size = 0.09)		
None	4,080	2,240	79.50	75.57	84.48	-3.93*	-4.94	79.50	77.57	-1.93	-2.43	
\$1–\$17,002	230	100	4.31	4.62	3.92	0.31	7.09	4.31	3.91	-0.41	-9.40	
\$17,003–\$32,395	220	100	4.69	5.27	3.94	0.59	12.50	4.69	4.42	-0.27	-5.77	
\$32,396–\$47,799	250	80	4.73	5.47	3.79	0.74	15.75	4.73	6.39	1.66	35.08	
\$47,800 or more	240	90	6.77	9.07	3.86	2.29	33.89	6.77	7.72	0.95	13.98	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>						(Effect size = 0.13)				(Effect size = 0.07)		
None	680	530	22.00	17.47	27.74	-4.53*	-20.59	22.00	21.27	-0.73	-3.32	
\$1–\$31,000	1,090	570	24.10	24.01	24.20	-0.08	-0.34	24.10	23.70	-0.39	-1.63	
\$31,001–\$48,000	1,050	510	18.40	19.02	17.62	0.62	3.35	18.40	17.90	-0.51	-2.75	
\$48,001–\$57,500	1,060	560	14.79	14.99	14.53	0.20	1.37	14.79	13.80	-0.99	-6.67	
\$57,501 or more	1,130	450	20.71	24.51	15.91	3.79*	18.31	20.71	23.33	2.62*	12.63	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>						(Effect size = 0.15)				(Effect size = 0.08)		
None	400	250	9.07	7.80	10.69	-1.28	-14.09	9.07	8.86	-0.21	-2.35	
1–94	1,020	430	18.32	19.57	16.74	1.25	6.82	18.32	16.74	-1.58	-8.61	
95–112	1,040	420	18.09	21.63	13.60	3.54*	19.59	18.09	18.19	0.11	0.59	
113–122	1,000	440	16.60	18.78	13.83	2.18*	13.15	16.60	19.25	2.65*	15.94	
123 or more	880	540	15.92	14.75	17.40	-1.17	-7.35	15.92	15.68	-0.23	-1.47	
Not applicable	680	530	22.00	17.47	27.74	-4.53*	-20.59	22.00	21.27	-0.73	-3.32	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>						(Effect size = 0.13)				(Effect size = 0.06)		
None	400	250	9.07	7.80	10.69	-1.28	-14.09	9.07	8.86	-0.21	-2.35	
\$1–\$31,859	990	460	19.12	19.61	18.50	0.49	2.56	19.12	17.78	-1.34	-7.03	
\$31,860–\$52,720	970	480	17.05	18.65	15.02	1.60	9.41	17.05	17.29	0.24	1.40	
\$52,721–\$67,828	980	470	16.06	18.57	12.88	2.51	15.61	16.06	16.32	0.26	1.63	
\$67,829 or more	1,010	430	16.70	17.91	15.17	1.21	7.23	16.70	18.49	1.79	10.70	
Not applicable	680	530	22.00	17.47	27.74	-4.53*	-20.59	22.00	21.27	-0.73	-3.32	

See notes at end of table.

**Table J-4. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Humanities	670	360	8.70	8.05	9.49	-0.64	-7.31	8.70	8.61	-0.08	-0.97	
Social/Behavioral sciences	170	50	3.43	4.50	2.13	1.04*	30.47	3.43	3.82	0.39	11.30	
Life sciences	90	70	3.78	3.52	4.10	-0.25	-6.72	3.78	3.15	-0.63	-16.66	
Physical sciences/Mathematics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer/Information science	820	380	8.62	8.92	8.27	0.29	3.31	8.62	7.86	-0.76	-8.84	
Engineering	210	120	2.84	3.21	2.39	0.36	12.72	2.84	3.30	0.45	15.98	
Education	250	90	2.94	3.36	2.43	0.41	13.94	2.94	2.97	0.03	1.02	
Business/Management	680	470	28.69	26.31	31.56	-2.32	-8.08	28.69	29.91	1.23	4.28	
Health	1,250	590	27.60	29.30	25.54	1.66	6.02	27.60	26.63	-0.97	-3.51	
Vocational/Technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other technical/professional	700	360	12.42	11.96	12.97	-0.44	-3.58	12.42	11.69	-0.73	-5.90	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	1,000	440	11.82	11.88	11.75	0.06	0.48	11.82	10.76	-1.06	-8.96	
24–29	1,390	760	25.69	26.26	24.97	0.57	2.21	25.69	26.52	0.83	3.23	
30 or older	2,620	1,400	62.44	61.87	63.16	-0.57	-0.91	62.44	62.72	0.28	0.45	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table J-4. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	200	190	4.79	3.57	6.34	-1.22*	-25.56	4.79	4.92	0.13	2.72	
No	4,130	1,890	73.21	78.97	65.92	5.75*	7.86	73.21	73.81	0.60	0.82	
Not applicable	680	530	22.00	17.47	27.74	-4.53*	-20.59	22.00	21.27	-0.73	-3.32	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-5. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Control of baccalaureate-granting institution <sup>4</sup>												
						(Effect size = 0.03)				(Effect size = #)		
Public	6,490	4,290	63.22	62.63	64.08	-0.58	-0.92	63.22	63.22	#	#	
Private nonprofit	5,100	2,750	30.48	31.71	28.66	1.23*	4.03	30.48	30.48	#	#	
Private for-profit	4,730	2,900	6.31	5.66	7.26	-0.64*	-10.21	6.31	6.31	#	#	
Region of baccalaureate-granting institution <sup>4,5</sup>												
						(Effect size = 0.04)				(Effect size = #)		
New England	840	510	6.55	6.47	6.66	-0.08	-1.20	6.55	6.55	#	#	
Mideast	2,760	1,860	17.71	17.35	18.25	-0.36	-2.06	17.71	17.71	#	#	
Great Lakes	2,550	1,480	15.98	16.41	15.34	0.43	2.69	15.98	15.98	#	#	
Plains	1,320	730	7.66	7.98	7.20	0.32	4.13	7.66	7.66	#	#	
Southeast	3,850	2,320	22.72	22.81	22.59	0.09	0.39	22.72	22.72	#	#	
Southwest	1,860	1,120	10.27	10.12	10.50	-0.15	-1.51	10.27	10.27	#	#	
Rocky Mountains	880	400	4.16	4.64	3.44	0.49*	11.73	4.16	4.16	#	#	
Far West	2,120	1,420	14.17	13.41	15.31	-0.77*	-5.41	14.17	14.17	#	#	
Outlying Areas	150	90	0.77	0.81	0.71	0.04	5.37	0.77	0.77	#	#	
Total enrollment of baccalaureate-granting institution <sup>4,6</sup>												
						(Effect size = 0.01)				(Effect size = #)		
1–2,907	4,290	2,310	11.38	11.67	10.95	0.29	2.54	11.38	11.38	#	#	
2,908–10,157	4,060	2,470	21.28	21.08	21.57	-0.20	-0.92	21.28	21.28	#	#	
10,158–27,396	3,930	2,630	30.97	30.87	31.12	-0.10	-0.32	30.97	30.97	#	#	
27,397 or more	4,030	2,520	36.37	36.38	36.36	0.01	0.02	36.37	36.37	#	#	
Pell Grant status in 2015–16												
						(Effect size = 0.07)				(Effect size = #)		
Received	5,890	2,780	28.96	31.78	24.80	2.82*	9.74	28.96	28.96	#	#	
Did not receive	10,020	6,720	67.19	65.26	70.03	-1.93*	-2.87	67.19	67.19	#	#	
Not applicable	400	430	3.85	2.95	5.17	-0.90*	-23.28	3.85	3.85	#	#	
Pell Grant amount received in 2015–16 <sup>7</sup>												
						(Effect size = 0.07)				(Effect size = #)		
None	10,020	6,720	67.19	65.26	70.03	-1.93*	-2.87	67.19	67.19	#	#	
\$1–\$2,888	2,240	1,020	10.00	11.09	8.38	1.09*	10.94	10.00	10.00	#	#	
\$2,889–\$5,774	2,280	1,090	11.63	12.81	9.90	1.17*	10.09	11.63	11.63	#	#	
\$5,775 or more	1,370	670	7.33	7.88	6.51	0.55*	7.56	7.33	7.33	#	#	
Not applicable	400	430	3.85	2.95	5.17	-0.90*	-23.28	3.85	3.85	#	#	

See notes at end of table.

**Table J-5. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.09)				(Effect size = #)		
Received	7,930	3,870	43.17	47.73	36.45	4.55*	10.55	43.17	43.17	#	#	
Did not receive	8,390	6,070	56.83	52.27	63.55	-4.55*	-8.01	56.83	56.83	#	#	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.09)				(Effect size = #)		
None	8,390	6,070	56.83	52.27	63.55	-4.55*	-8.01	56.83	56.83	#	#	
\$1–\$4,198	1,980	970	10.27	11.18	8.92	0.92*	8.93	10.27	10.27	#	#	
\$4,199–\$7,500	3,900	1,780	23.15	25.89	19.11	2.74*	11.83	23.15	23.15	#	#	
\$7,501–\$8,297	140	80	0.46	0.44	0.48	-0.01	-3.18	0.46	0.46	#	#	
\$8,298 or more	1,900	1,050	9.29	10.21	7.95	0.91*	9.83	9.29	9.29	#	#	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.03)				(Effect size = #)		
None	14,970	9,050	94.26	93.93	94.76	-0.33	-0.35	94.26	94.26	#	#	
\$1–\$7,050	240	110	1.29	1.29	1.29	#	-0.26	1.29	1.29	#	#	
\$7,051–\$12,752	230	120	1.42	1.32	1.57	-0.10	-7.39	1.42	1.42	#	#	
\$12,753–\$20,268	250	100	1.50	1.69	1.20	0.20*	13.30	1.50	1.48	-0.01	-0.90	
\$20,269 or more	230	120	1.54	1.78	1.17	0.24*	15.79	1.54	1.55	0.01	0.88	
Federal aid status in 2015–16						(Effect size = 0.11)				(Effect size = #)		
Received	10,680	5,240	55.52	61.00	47.43	5.48*	9.87	55.52	55.52	#	#	
Did not receive	4,880	3,940	37.78	33.22	44.52	-4.56*	-12.07	37.78	37.78	#	#	
Unknown	750	750	6.70	5.78	8.05	-0.92*	-13.69	6.70	6.70	#	#	
Institution aid status in 2015–16						(Effect size = 0.07)				(Effect size = #)		
Received	7,360	3,620	38.15	41.63	33.01	3.48*	9.13	38.15	38.15	#	#	
Did not receive	7,340	5,100	50.44	47.65	54.57	-2.80*	-5.54	50.44	50.44	#	#	
Unknown	1,620	1,220	11.40	10.72	12.42	-0.69*	-6.01	11.40	11.40	#	#	
State aid status in 2015–16						(Effect size = 0.05)				(Effect size = #)		
Received	2,970	1,400	18.80	20.63	16.09	1.83*	9.75	18.80	18.80	#	#	
Did not receive	11,640	7,280	69.80	68.52	71.68	-1.28*	-1.83	69.80	69.80	#	#	
Unknown	1,710	1,250	11.40	10.85	12.23	-0.56	-4.88	11.40	11.40	#	#	
Any aid status in 2015–16						(Effect size = 0.22)				(Effect size = 0.04)		
Received	13,650	6,970	74.03	79.93	65.32	5.90*	7.97	74.03	75.53	1.49*	2.02	
Did not receive	1,630	620	9.61	11.80	6.39	2.19*	22.74	9.61	9.61	#	#	
Unknown	1,030	2,350	16.35	8.26	28.30	-8.09*	-49.46	16.35	14.86	-1.49*	-9.14	

See notes at end of table.

**Table J-5. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.13)				(Effect size = #)		
Available	16,100	9,280	95.34	98.12	91.23	2.78*	2.92	95.34	95.34	#	#	
Not available	210	660	4.66	1.88	8.77	-2.78*	-59.68	4.66	4.66	#	#	
Veteran status in 2015–16						(Effect size = 0.03)				(Effect size = #)		
Veteran	1,310	860	4.04	3.43	4.93	-0.60*	-14.93	4.04	4.04	#	#	
Not a veteran	15,000	9,070	95.96	96.57	95.07	0.60*	0.63	95.96	95.96	#	#	
Race/ethnicity						(Effect size = 0.16)				(Effect size = 0.14)		
American Indian or Alaska Native, not Hispanic or Latino	90	50	0.54	0.54	0.53	#	0.07	0.54	0.54	#	#	
Asian, not Hispanic or Latino	1,030	830	8.23	6.98	10.07	-1.25*	-15.21	8.23	8.23	#	#	
Black, not Hispanic or Latino	2,020	1,140	9.59	9.64	9.52	0.05	0.52	9.59	9.59	#	#	
Hispanic or Latino, of any race	2,330	1,280	12.20	13.26	10.63	1.06*	8.69	12.20	12.20	#	#	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	60	30	0.26	0.30	0.20	0.04	14.32	0.26	0.26	#	#	
White, not Hispanic or Latino	10,130	5,570	62.51	64.93	58.93	2.42*	3.88	62.51	65.03	2.52*	4.04	
Two or more races, not Hispanic or Latino	570	250	3.13	3.57	2.47	0.45*	14.29	3.13	3.13	#	#	
Unknown	90	780	3.55	0.78	7.63	-2.77*	-77.93	3.55	1.03	-2.52*	-71.12	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	6,350	4,490	42.58	39.84	46.63	-2.74*	-6.45	42.58	42.58	#	#	
Female	9,960	5,430	57.33	60.16	53.15	2.83*	4.94	57.33	57.42	0.09	0.15	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.09)				(Effect size = #)		
None	4,520	3,580	37.15	32.90	43.42	-4.25*	-11.44	37.15	37.15	#	#	
\$1–\$19,500	2,930	1,620	20.18	21.19	18.69	1.01*	5.00	20.18	20.18	#	#	
\$19,501–\$29,500	3,070	1,490	19.19	21.42	15.90	2.23*	11.60	19.19	19.19	#	#	
\$29,501–\$45,000	2,940	1,620	14.97	15.93	13.56	0.95*	6.37	14.97	14.97	#	#	
\$45,001 or more	2,860	1,630	8.52	8.58	8.43	0.06	0.72	8.52	8.52	#	#	

See notes at end of table.

**Table J-5. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non- respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non- respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.08)				(Effect size = #)		
None	12,980	8,470	82.21	79.15	86.74	-3.06*	-3.73	82.21	82.21	#	#	
\$1–\$18,601	820	380	4.29	5.12	3.08	0.83*	19.23	4.29	4.29	#	#	
\$18,602–\$35,806	800	400	4.06	4.74	3.06	0.68*	16.70	4.06	4.06	#	#	
\$35,807–\$61,500	880	350	4.58	5.23	3.62	0.65*	14.25	4.58	4.58	#	#	
\$61,501 or more	830	340	4.85	5.76	3.51	0.91*	18.69	4.85	4.85	#	#	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.10)				(Effect size = #)		
None	4,010	3,360	33.74	28.97	40.77	-4.77*	-14.13	33.74	33.74	#	#	
\$1–\$22,500	3,030	1,720	20.93	21.63	19.90	0.70	3.33	20.93	20.93	#	#	
\$22,501–\$34,149	3,060	1,630	18.64	20.16	16.40	1.52*	8.14	18.64	18.64	#	#	
\$34,150–\$55,615	3,030	1,690	13.52	14.53	12.03	1.01*	7.47	13.52	13.52	#	#	
\$55,616 or more	3,180	1,540	13.17	14.72	10.90	1.54*	11.71	13.17	13.17	#	#	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.12)				(Effect size = #)		
None	1,750	1,100	11.78	11.60	12.03	-0.17	-1.47	11.78	11.78	#	#	
1–80	2,730	1,370	16.63	18.10	14.46	1.47*	8.85	16.63	16.63	#	#	
81–105	2,810	1,300	15.44	17.81	11.94	2.37*	15.36	15.44	15.44	#	#	
106–116	2,670	1,210	12.85	14.67	10.18	1.81*	14.11	12.85	12.85	#	#	
117 or more	2,340	1,590	9.56	8.85	10.62	-0.72*	-7.49	9.56	9.56	#	#	
Not applicable	4,010	3,360	33.74	28.97	40.77	-4.77*	-14.13	33.74	33.74	#	#	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = #)		
None	1,750	1,100	11.78	11.60	12.03	-0.17	-1.47	11.78	11.78	#	#	
\$1–\$20,214	2,650	1,360	17.24	18.86	14.84	1.62*	9.40	17.24	17.24	#	#	
\$20,215–\$37,494	2,630	1,380	15.03	16.12	13.42	1.09*	7.26	15.03	15.03	#	#	
\$37,495–\$63,654	2,610	1,400	11.13	12.33	9.35	1.20*	10.81	11.13	11.13	#	#	
\$63,655 or more	2,670	1,340	11.10	12.12	9.58	1.02*	9.23	11.10	11.10	#	#	
Not applicable	4,010	3,360	33.74	28.97	40.77	-4.77*	-14.13	33.74	33.74	#	#	

See notes at end of table.

**Table J-5. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	1,750	1,130	10.67	10.14	11.47	-0.54	-5.04	10.67	10.77	0.10	0.96	
Social/Behavioral sciences	1,710	800	13.44	14.77	11.42	1.35*	10.06	13.44	13.41	-0.03	-0.23	
Life sciences	1,710	840	11.74	13.08	9.70	1.36*	11.62	11.74	11.71	-0.03	-0.23	
Physical sciences/Mathematics	370	180	2.54	2.65	2.37	0.11	4.33	2.54	2.53	-0.01	-0.23	
Computer/Information science	1,240	690	3.55	3.60	3.47	0.05	1.52	3.55	3.54	-0.01	-0.23	
Engineering	970	620	7.05	7.17	6.87	0.12	1.73	7.05	7.03	-0.02	-0.23	
Education	1,700	760	5.17	5.63	4.48	0.46*	8.96	5.17	5.16	-0.01	-0.23	
Business/Management	1,890	1,470	18.98	16.68	22.47	-2.34*	-12.34	18.98	18.93	-0.04	-0.23	
Health	2,430	1,410	12.19	12.26	12.07	0.08	0.63	12.19	12.16	-0.03	-0.23	
Vocational/Technical	90	50	0.70	0.80	0.56	0.10	13.72	0.70	0.70	#	-0.23	
Other technical/professional	1,960	1,280	13.13	12.87	13.54	-0.27	-2.09	13.13	13.10	-0.03	-0.23	
Unknown	80	140	0.84	0.37	1.54	-0.47*	-56.15	0.84	0.95	0.12	13.83	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	8,770	4,970	64.44	66.57	61.29	2.13*	3.31	64.44	64.78	0.34	0.53	
24–29	3,380	2,260	19.34	18.32	20.86	-1.02*	-5.30	19.34	19.34	#	#	
30 or older	4,170	2,640	15.88	15.11	17.00	-0.77*	-4.82	15.88	15.88	#	#	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.



**Table J-5. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non- respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non- respondent	Esti- mated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Esti- mated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	340	420	2.14	1.60	2.93	-0.54*	-25.15	2.14	2.14	#	#	
No	11,960	6,150	64.13	69.43	56.30	5.30*	8.27	64.13	64.13	#	#	
Not applicable	4,010	3,360	33.74	28.97	40.77	-4.77*	-14.13	33.74	33.74	#	#	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-6. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>							(Effect size = ‡)					(Effect size = ‡)
New England	220	150	3.88	3.81	3.97	-0.07	-1.70	3.88	3.73	-0.15	-3.90	
Midwest	950	750	14.63	14.13	15.36	-0.51	-3.45	14.63	15.14	0.51	3.48	
Great Lakes	1,140	720	16.62	17.27	15.68	0.65	3.92	16.62	16.49	-0.13	-0.78	
Plains	450	290	7.21	7.44	6.87	0.23	3.25	7.21	7.34	0.13	1.75	
Southeast	1,820	1,170	25.35	25.50	25.13	0.15	0.60	25.35	25.04	-0.31	-1.21	
Southwest	680	460	11.83	11.72	11.99	-0.11	-0.93	11.83	11.98	0.15	1.28	
Rocky Mountains	360	160	3.88	4.10	3.56	0.22	5.74	3.88	3.70	-0.18	-4.61	
Far West	840	580	16.23	15.72	16.97	-0.51	-3.16	16.23	16.30	0.07	0.42	
Outlying Areas	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Total enrollment of baccalaureate-granting institution <sup>6</sup>							(Effect size = 0.01)					(Effect size = 0.02)
1–11,413	1,650	1,050	19.93	19.67	20.29	-0.25	-1.26	19.93	20.38	0.45	2.26	
11,414–22,020	1,620	1,100	23.96	24.13	23.72	0.17	0.71	23.96	23.92	-0.05	-0.19	
22,021–35,263	1,590	1,090	27.19	27.22	27.15	0.03	0.11	27.19	26.24	-0.95	-3.48	
35,264 or more	1,630	1,050	28.92	28.97	28.84	0.05	0.18	28.92	29.46	0.54	1.88	
Pell Grant status in 2015–16							(Effect size = 0.08)					(Effect size = 0.01)
Received	2,260	1,090	29.73	33.12	24.83	3.39*	11.41	29.73	30.02	0.29	0.97	
Did not receive	4,100	3,040	67.10	64.53	70.80	-2.56*	-3.82	67.10	66.67	-0.43	-0.64	
Not applicable	130	160	3.17	2.35	4.37	-0.83*	-26.09	3.17	3.32	0.14	4.46	
Pell Grant amount received in 2015–16 <sup>7</sup>							(Effect size = 0.08)					(Effect size = 0.01)
None	4,100	3,040	67.10	64.53	70.80	-2.56*	-3.82	67.10	66.67	-0.43	-0.64	
\$1–\$2,887	850	390	9.89	11.02	8.26	1.13*	11.45	9.89	9.86	-0.03	-0.29	
\$2,888–\$5,774	880	450	12.45	13.95	10.29	1.50*	12.04	12.45	12.61	0.16	1.31	
\$5,775 or more	530	250	7.39	8.15	6.29	0.76*	10.29	7.39	7.54	0.15	2.08	
Not applicable	130	160	3.17	2.35	4.37	-0.83*	-26.09	3.17	3.32	0.14	4.46	

See notes at end of table.

**Table J-6. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.10)				(Effect size = 0.01)		
Received	2,920	1,470	40.57	45.45	33.54	4.87*	12.01	40.57	41.18	0.60	1.48	
Did not receive	3,560	2,820	59.43	54.55	66.46	-4.87*	-8.20	59.43	58.82	-0.60	-1.01	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.10)				(Effect size = 0.02)		
None	3,560	2,820	59.43	54.55	66.46	-4.87*	-8.20	59.43	58.82	-0.60	-1.01	
\$1–\$4,000	790	390	10.62	11.64	9.14	1.02*	9.63	10.62	10.67	0.05	0.47	
\$4,001–\$6,250	700	350	9.15	10.05	7.86	0.89*	9.76	9.15	9.16	0.01	0.12	
\$6,251–\$7,500	790	400	12.02	13.50	9.89	1.48*	12.30	12.02	11.97	-0.05	-0.41	
\$7,501 or more	650	330	8.78	10.26	6.65	1.48*	16.84	8.78	9.37	0.59	6.73	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.05)				(Effect size = 0.01)		
None	6,070	3,960	92.14	92.66	91.40	0.52	0.56	92.14	92.01	-0.13	-0.14	
\$1–\$6,000	90	40	1.16	1.23	1.05	0.07	6.14	1.16	1.20	0.05	4.04	
\$6,001–\$11,326	70	40	1.05	0.93	1.21	-0.11	-10.82	1.05	0.96	-0.08	-8.05	
\$11,327–\$16,800	70	50	1.10	1.25	0.89	0.15	13.27	1.10	1.14	0.04	3.80	
\$16,801 or more	70	50	1.38	1.58	1.08	0.21	15.00	1.38	1.36	-0.01	-0.96	
Not applicable	130	160	3.17	2.35	4.37	-0.83*	-26.09	3.17	3.32	0.14	4.46	
Federal aid status in 2015–16						(Effect size = 0.12)				(Effect size = 0.02)		
Received	3,950	1,980	53.06	59.15	44.28	6.09*	11.47	53.06	53.57	0.51	0.96	
Did not receive	2,180	1,950	39.79	34.37	47.61	-5.42*	-13.62	39.79	38.86	-0.94	-2.36	
Unknown	360	360	7.15	6.48	8.11	-0.67	-9.32	7.15	7.57	0.43	5.98	
Institution aid status in 2015–16						(Effect size = 0.07)				(Effect size = 0.02)		
Received	1,920	960	27.80	30.77	23.52	2.97*	10.68	27.80	27.91	0.11	0.39	
Did not receive	3,840	2,800	59.07	56.17	63.25	-2.90*	-4.91	59.07	58.38	-0.69	-1.17	
Unknown	720	530	13.13	13.06	13.23	-0.07	-0.52	13.13	13.71	0.58	4.43	
State aid status in 2015–16						(Effect size = 0.05)				(Effect size = 0.02)		
Received	1,540	800	21.17	23.17	18.29	2.00*	9.43	21.17	21.14	-0.03	-0.16	
Did not receive	4,270	2,990	66.53	64.63	69.28	-1.90*	-2.86	66.53	66.05	-0.48	-0.72	
Unknown	680	500	12.30	12.21	12.43	-0.09	-0.74	12.30	12.81	0.51	4.16	
Any aid status in 2015–16						(Effect size = 0.24)				(Effect size = 0.05)		
Received	5,050	2,610	70.02	76.70	60.39	6.68*	9.54	70.02	72.00	1.98*	2.82	
Did not receive	890	340	11.28	13.69	7.81	2.41*	21.32	11.28	11.24	-0.04	-0.38	
Unknown	550	1,340	18.69	9.61	31.80	-9.08*	-48.59	18.69	16.76	-1.93*	-10.34	

See notes at end of table.

**Table J-6. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.13)				(Effect size = 0.01)		
Available	6,400	3,940	95.28	98.00	91.35	2.72*	2.86	95.28	95.15	-0.13	-0.13	
Not available	80	350	4.72	2.00	8.65	-2.72*	-57.69	4.72	4.85	0.13	2.70	
Veteran status in 2015–16						(Effect size = 0.02)				(Effect size = #)		
Veteran	460	270	2.90	2.55	3.41	-0.35	-12.10	2.90	2.82	-0.08	-2.86	
Not a veteran	6,030	4,020	97.10	97.45	96.59	0.35	0.36	97.10	97.18	0.08	0.09	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Asian, not Hispanic or Latino	400	380	8.77	7.50	10.60	-1.27*	-14.50	8.77	8.69	-0.07	-0.85	
Black, not Hispanic or Latino	570	350	8.57	8.84	8.16	0.28	3.25	8.57	8.69	0.13	1.48	
Hispanic or Latino, of any race	860	450	12.58	13.73	10.93	1.15*	9.12	12.58	12.53	-0.05	-0.41	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	4,340	2,650	62.60	64.60	59.72	1.99*	3.19	62.60	65.09	2.49*	3.97	
Two or more races, not Hispanic or Latino	220	110	3.21	3.68	2.53	0.47*	14.67	3.21	3.26	0.05	1.68	
Unknown	40	320	3.44	0.72	7.38	-2.73*	-79.23	3.44	0.92	-2.53*	-73.38	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	2,610	1,950	43.19	40.81	46.61	-2.37*	-5.49	43.19	43.37	0.18	0.42	
Female	3,880	2,320	56.68	59.19	53.07	2.50*	4.41	56.68	56.63	-0.05	-0.10	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.10)				(Effect size = 0.03)		
None	2,220	1,880	39.06	34.73	45.32	-4.33*	-11.10	39.06	39.30	0.24	0.62	
\$1–\$14,250	1,030	650	14.75	14.70	14.82	-0.05	-0.33	14.75	13.90	-0.85*	-5.75	
\$14,251–\$25,500	1,100	560	16.06	18.01	13.25	1.95*	12.12	16.06	16.42	0.36	2.24	
\$25,501–\$33,086	1,040	630	15.56	16.82	13.74	1.26*	8.11	15.56	15.45	-0.11	-0.71	
\$33,087 or more	1,100	570	14.57	15.74	12.88	1.17*	8.06	14.57	14.93	0.36	2.46	

See notes at end of table.

**Table J-6. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.09)				(Effect size = 0.02)		
None	5,130	3,700	82.75	79.40	87.59	-3.35*	-4.05	82.75	82.60	-0.15	-0.18	
\$1–\$18,985	330	150	4.31	5.29	2.90	0.98*	22.66	4.31	4.39	0.07	1.74	
\$18,986–\$38,246	340	140	4.16	5.06	2.86	0.90*	21.64	4.16	4.38	0.22	5.24	
\$38,247–\$68,981	330	160	4.35	4.69	3.86	0.34	7.89	4.35	4.00	-0.35	-7.99	
\$68,982 or more	350	130	4.42	5.55	2.79	1.13*	25.59	4.42	4.63	0.21	4.66	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = 0.02)		
None	1,930	1,760	35.21	30.16	42.50	-5.05*	-14.34	35.21	35.38	0.16	0.46	
\$1–\$17,400	1,080	690	16.06	15.94	16.22	-0.12	-0.72	16.06	15.46	-0.60	-3.73	
\$17,401–\$28,897	1,130	640	17.04	18.49	14.95	1.45*	8.48	17.04	17.02	-0.02	-0.12	
\$28,898–\$47,422	1,150	620	16.24	18.13	13.53	1.88*	11.58	16.24	16.82	0.58	3.55	
\$47,423 or more	1,200	580	15.44	17.28	12.79	1.84*	11.92	15.44	15.32	-0.12	-0.77	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.12)				(Effect size = 0.02)		
None	730	510	11.59	11.22	12.13	-0.38	-3.24	11.59	11.33	-0.26	-2.25	
1–75	940	550	14.21	15.14	12.86	0.93*	6.56	14.21	13.83	-0.38	-2.65	
76–101	1,030	490	14.06	16.27	10.87	2.21*	15.71	14.06	14.36	0.30	2.10	
102–113	1,040	460	13.31	15.66	9.92	2.35*	17.66	13.31	13.50	0.19	1.40	
114 or more	820	520	11.61	11.55	11.71	-0.07	-0.57	11.61	11.61	-0.01	-0.05	
Not applicable	1,930	1,760	35.21	30.16	42.50	-5.05*	-14.34	35.21	35.38	0.16	0.46	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = 0.02)		
None	730	510	11.59	11.22	12.13	-0.38	-3.24	11.59	11.33	-0.26	-2.25	
\$1–\$16,130	930	530	13.43	14.35	12.11	0.92*	6.84	13.43	12.94	-0.49	-3.68	
\$16,131–\$29,915	940	520	14.00	15.44	11.92	1.44*	10.28	14.00	14.38	0.38	2.74	
\$29,916–\$55,332	980	490	12.92	14.41	10.76	1.50*	11.59	12.92	13.12	0.21	1.61	
\$55,333 or more	980	480	12.85	14.42	10.58	1.57*	12.23	12.85	12.85	#	0.02	
Not applicable	1,930	1,760	35.21	30.16	42.50	-5.05*	-14.34	35.21	35.38	0.16	0.46	

See notes at end of table.

**Table J-6. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	510	380	9.44	8.67	10.57	-0.78	-8.26	9.44	9.30	-0.14	-1.47	
Social/Behavioral sciences	810	430	13.68	14.94	11.80	1.28*	9.37	13.68	13.84	0.16	1.18	
Life sciences	870	470	12.59	14.00	10.51	1.43*	11.33	12.59	12.67	0.08	0.63	
Physical sciences/Mathematics	150	100	2.45	2.30	2.67	-0.15	-6.19	2.45	2.28	-0.16	-6.68	
Computer/Information science	310	170	3.32	3.45	3.12	0.14	4.15	3.32	3.40	0.08	2.52	
Engineering	490	340	8.43	8.43	8.43	#	#	8.43	8.08	-0.35	-4.16	
Education	840	400	5.51	6.18	4.52	0.68*	12.32	5.51	5.72	0.20	3.71	
Business/Management	710	570	17.50	15.18	20.95	-2.36*	-13.51	17.50	17.25	-0.24	-1.40	
Health	720	440	10.74	10.97	10.39	0.24	2.22	10.74	11.09	0.35	3.28	
Vocational/Technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other technical/professional	840	590	14.50	14.44	14.60	-0.07	-0.47	14.50	14.54	0.04	0.28	
Unknown	60	110	1.01	0.44	1.86	-0.58*	-57.19	1.01	0.95	-0.06	-6.03	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	4,030	2,640	66.81	68.06	65.00	1.25*	1.87	66.81	66.65	-0.16	-0.23	
24–29	1,410	980	20.91	20.37	21.69	-0.54	-2.58	20.91	21.30	0.39	1.86	
30 or older	1,050	630	11.84	11.58	12.23	-0.27	-2.26	11.84	12.05	0.21	1.77	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table J-6. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	80	110	1.83	1.46	2.36	-0.37*	-20.29	1.83	1.89	0.06	3.18	
No	4,480	2,420	62.96	68.38	55.14	5.42*	8.61	62.96	62.74	-0.22	-0.35	
Not applicable	1,930	1,760	35.21	30.16	42.50	-5.05*	-14.34	35.21	35.38	0.16	0.46	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-7. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = 0.06)				(Effect size = 0.04)		
New England	600	350	13.38	12.86	14.22	-0.51	-3.84	13.38	13.74	0.36	2.73	
Mideast	1,250	780	26.21	25.52	27.34	-0.69	-2.65	26.21	25.12	-1.09	-4.16	
Great Lakes	870	430	15.23	15.37	15.01	0.14	0.90	15.23	15.76	0.52	3.43	
Plains	560	250	8.53	8.86	7.99	0.33	3.83	8.53	8.16	-0.36	-4.27	
Southeast	880	480	17.63	17.73	17.46	0.10	0.58	17.63	17.91	0.28	1.58	
Southwest	240	120	4.13	4.24	3.95	0.11	2.67	4.13	4.12	-0.02	-0.45	
Rocky Mountains	240	80	4.71	5.71	3.07	1.00*	21.28	4.71	4.99	0.28	5.96	
Far West	370	220	8.59	7.86	9.78	-0.73	-8.48	8.59	8.36	-0.23	-2.66	
Outlying Areas	80	40	1.59	1.84	1.16	0.26	16.31	1.59	1.84	0.25	16.06	
Total enrollment of baccalaureate-granting institution <sup>6</sup>						(Effect size = 0.04)				(Effect size = 0.01)		
1–2,395	1,320	650	22.05	22.48	21.35	0.43	1.95	22.05	22.01	-0.05	-0.21	
2,396–4,774	1,300	660	23.45	24.04	22.48	0.59	2.53	23.45	23.46	0.01	0.05	
4,775–11,971	1,220	750	25.78	24.15	28.46	-1.64*	-6.35	25.78	25.35	-0.43	-1.66	
11,972 or more	1,260	700	28.71	29.33	27.71	0.61	2.14	28.71	29.18	0.46	1.61	
Pell Grant status in 2015–16						(Effect size = 0.09)				(Effect size = 0.05)		
Received	1,570	660	26.87	29.18	23.08	2.32*	8.62	26.87	26.81	-0.06	-0.22	
Did not receive	3,410	1,930	68.90	68.09	70.23	-0.81	-1.17	68.90	70.03	1.13	1.64	
Not applicable	130	160	4.23	2.72	6.69	-1.51*	-35.64	4.23	3.16	-1.07*	-25.30	
Pell Grant amount received in 2015–16 <sup>7</sup>						(Effect size = 0.09)				(Effect size = 0.06)		
None	3,410	1,930	68.90	68.09	70.23	-0.81	-1.17	68.90	70.03	1.13	1.64	
\$1–\$2,888	510	210	8.90	10.06	7.03	1.15*	12.92	8.90	9.17	0.27	3.01	
\$2,889–\$5,774	650	260	10.74	11.59	9.35	0.85*	7.93	10.74	10.57	-0.17	-1.60	
\$5,775 or more	400	190	7.23	7.54	6.71	0.31	4.36	7.23	7.07	-0.16	-2.15	
Not applicable	130	160	4.23	2.72	6.69	-1.51*	-35.64	4.23	3.16	-1.07*	-25.30	

See notes at end of table.



**Table J-7. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment					After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample	
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>
Direct Loan status in 2015–16						(Effect size = 0.07)				(Effect size = 0.02)	
Received	2,770	1,250	49.01	52.73	42.92	3.72*	7.60	49.01	48.20	-0.80	-1.64
Did not receive	2,330	1,510	50.99	47.27	57.08	-3.72*	-7.30	50.99	51.80	0.80	1.57
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.08)				(Effect size = 0.04)	
None	2,330	1,510	50.99	47.27	57.08	-3.72*	-7.30	50.99	51.80	0.80	1.57
\$1–\$5,500	800	330	13.73	15.63	10.63	1.90*	13.83	13.73	14.33	0.60	4.39
\$5,501–\$7,500	1,440	580	24.75	26.83	21.35	2.08*	8.40	24.75	24.39	-0.35	-1.43
\$7,501 or more	520	330	10.53	10.28	10.94	-0.25	-2.40	10.53	9.48	-1.05*	-10.00
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.08)				(Effect size = 0.05)	
None	4,510	2,390	87.73	88.91	85.81	1.18*	1.34	87.73	88.80	1.07	1.22
\$1–\$9,000	110	60	1.85	1.80	1.93	-0.05	-2.58	1.85	1.95	0.10	5.37
\$9,001–\$15,082	120	50	2.00	2.02	1.98	0.02	0.80	2.00	2.00	#	-0.11
\$15,083–\$24,196	120	50	2.05	2.08	2.00	0.03	1.59	2.05	1.93	-0.12	-6.05
\$24,197 or more	110	50	2.14	2.47	1.60	0.33	15.47	2.14	2.17	0.03	1.37
Not applicable	130	160	4.23	2.72	6.69	-1.51*	-35.64	4.23	3.16	-1.07*	-25.30
Federal aid status in 2015–16						(Effect size = 0.11)				(Effect size = 0.05)	
Received	3,400	1,500	58.75	63.72	50.64	4.97*	8.46	58.75	58.36	-0.39	-0.66
Did not receive	1,530	1,060	35.40	32.03	40.92	-3.38*	-9.54	35.40	36.86	1.46	4.13
Unknown	170	190	5.85	4.26	8.45	-1.59*	-27.23	5.85	4.77	-1.07	-18.35
Institution aid status in 2015–16						(Effect size = 0.09)				(Effect size = 0.05)	
Received	3,400	1,520	59.14	63.27	52.41	4.12*	6.97	59.14	59.29	0.14	0.24
Did not receive	1,400	970	32.87	30.62	36.53	-2.25*	-6.83	32.87	33.97	1.10	3.36
Unknown	290	260	7.99	6.11	11.05	-1.88*	-23.51	7.99	6.74	-1.24*	-15.58
State aid status in 2015–16						(Effect size = 0.06)				(Effect size = 0.04)	
Received	1,060	430	16.82	18.56	13.99	1.74*	10.32	16.82	17.04	0.21	1.27
Did not receive	3,670	2,030	73.56	73.29	73.99	-0.26	-0.36	73.56	74.43	0.87	1.18
Unknown	370	300	9.62	8.15	12.03	-1.47*	-15.32	9.62	8.53	-1.09	-11.28
Any aid status in 2015–16						(Effect size = 0.21)				(Effect size = 0.03)	
Received	4,490	2,110	80.98	85.80	73.12	4.82*	5.95	80.98	81.88	0.89	1.10
Did not receive	390	110	6.84	8.63	3.91	1.79*	26.20	6.84	6.88	0.04	0.62
Unknown	220	530	12.18	5.57	22.97	-6.61*	-54.25	12.18	11.24	-0.94	-7.69

See notes at end of table.

**Table J-7. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.14)				(Effect size = 0.01)		
Available	5,030	2,570	95.50	98.41	90.76	2.91*	3.04	95.50	95.75	0.25	0.26	
Not available	60	180	4.50	1.59	9.24	-2.91*	-64.64	4.50	4.25	-0.25	-5.49	
Veteran status in 2015–16						(Effect size = 0.02)				(Effect size = 0.01)		
Veteran	330	190	3.33	2.96	3.93	-0.37	-11.15	3.33	3.59	0.26	7.88	
Not a veteran	4,770	2,570	96.67	97.04	96.07	0.37	0.38	96.67	96.41	-0.26	-0.27	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Asian, not Hispanic or Latino	320	220	7.60	6.42	9.54	-1.19*	-15.63	7.60	7.93	0.32	4.26	
Black, not Hispanic or Latino	420	270	8.97	8.40	9.89	-0.57	-6.31	8.97	8.41	-0.56	-6.28	
Hispanic or Latino, of any race	550	280	10.81	12.21	8.53	1.39*	12.90	10.81	11.33	0.52	4.83	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	3,570	1,740	65.60	68.27	61.25	2.67*	4.07	65.60	67.69	2.09*	3.19	
Two or more races, not Hispanic or Latino	190	70	3.07	3.42	2.50	0.35*	11.30	3.07	2.97	-0.10	-3.20	
Unknown	30	160	3.36	0.87	7.44	-2.50*	-74.21	3.36	1.14	-2.22*	-66.00	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	1,900	1,250	42.08	38.76	47.51	-3.32*	-7.90	42.08	41.79	-0.29	-0.70	
Female	3,190	1,500	57.92	61.24	52.49	3.32*	5.74	57.92	58.21	0.29	0.51	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.10)				(Effect size = 0.03)		
None	1,610	1,130	36.09	31.86	42.99	-4.23*	-11.72	36.09	35.68	-0.40	-1.12	
\$1–\$19,299	880	400	16.57	17.72	14.69	1.15*	6.95	16.57	17.40	0.83	5.02	
\$19,300–\$27,000	1,140	460	19.64	21.73	16.22	2.09*	10.65	19.64	19.67	0.03	0.16	
\$27,001–\$34,656	650	310	11.76	12.90	9.90	1.14*	9.72	11.76	11.91	0.15	1.23	
\$34,657 or more	820	460	15.95	15.79	16.21	-0.16	-1.00	15.95	15.34	-0.60	-3.79	

See notes at end of table.

**Table J-7. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.06)				(Effect size = 0.02)		
None	4,000	2,300	81.66	79.28	85.54	-2.38*	-2.91	81.66	82.23	0.57	0.70	
\$1–\$20,000	290	110	4.50	5.28	3.23	0.78*	17.34	4.50	4.54	0.04	0.98	
\$20,001–\$37,659	250	140	4.76	5.12	4.18	0.36	7.51	4.76	4.35	-0.41	-8.70	
\$37,660–\$70,167	280	110	4.60	5.20	3.63	0.60*	13.00	4.60	4.52	-0.08	-1.76	
\$70,168 or more	280	100	4.47	5.11	3.43	0.64*	14.32	4.47	4.36	-0.12	-2.62	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.10)				(Effect size = 0.04)		
None	1,430	1,050	33.10	28.65	40.36	-4.45*	-13.44	33.10	32.80	-0.30	-0.90	
\$1–\$21,500	930	420	17.94	19.25	15.80	1.31*	7.30	17.94	19.11	1.17*	6.51	
\$21,501–\$30,000	960	410	16.89	18.49	14.27	1.60*	9.49	16.89	17.17	0.28	1.68	
\$30,001–\$49,651	850	460	16.02	16.09	15.90	0.07	0.46	16.02	15.25	-0.77	-4.79	
\$49,652 or more	930	410	16.05	17.51	13.66	1.46*	9.11	16.05	15.66	-0.39	-2.42	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = 0.03)		
None	650	320	12.72	13.03	12.21	0.31	2.43	12.72	13.30	0.58	4.57	
1–74	790	330	13.82	15.18	11.60	1.36*	9.85	13.82	14.20	0.37	2.70	
75–99	800	320	13.78	15.45	11.04	1.67*	12.15	13.78	13.70	-0.07	-0.54	
100–112	800	330	13.69	15.57	10.62	1.88*	13.75	13.69	13.78	0.09	0.64	
113 or more	630	410	12.89	12.11	14.16	-0.78	-6.03	12.89	12.22	-0.67	-5.20	
Not applicable	1,430	1,050	33.10	28.65	40.36	-4.45*	-13.44	33.10	32.80	-0.30	-0.90	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.10)				(Effect size = 0.03)		
None	650	320	12.72	13.03	12.21	0.31	2.43	12.72	13.30	0.58	4.57	
\$1–\$18,636	780	320	13.55	14.92	11.31	1.37*	10.12	13.55	14.10	0.55	4.06	
\$18,637–\$30,377	750	350	13.87	14.82	12.32	0.95*	6.84	13.87	13.43	-0.44	-3.19	
\$30,378–\$57,552	730	370	13.60	14.32	12.42	0.72	5.31	13.60	13.59	-0.01	-0.07	
\$57,553 or more	760	340	13.17	14.27	11.37	1.10*	8.34	13.17	12.78	-0.38	-2.90	
Not applicable	1,430	1,050	33.10	28.65	40.36	-4.45*	-13.44	33.10	32.80	-0.30	-0.90	

See notes at end of table.

**Table J-7. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Humanities	610	350	13.63	13.40	14.01	-0.23	-1.70	13.63	14.22	0.59	4.35	
Social/Behavioral sciences	730	320	14.91	16.14	12.83	1.26*	8.42	14.91	14.33	-0.58	-3.90	
Life sciences	760	300	11.51	12.82	9.28	1.34*	11.67	11.51	11.31	-0.20	-1.72	
Physical sciences/Mathematics	220	80	3.23	3.77	2.31	0.55*	17.15	3.23	3.52	0.29	9.02	
Computer/Information science	160	100	3.03	2.99	3.10	-0.04	-1.41	3.03	2.95	-0.08	-2.67	
Engineering	290	150	4.98	5.30	4.44	0.33	6.55	4.98	5.53	0.55	10.98	
Education	620	260	4.90	4.89	4.93	-0.01	-0.30	4.90	4.42	-0.49*	-9.94	
Business/Management	540	390	20.15	18.14	23.59	-2.07*	-10.28	20.15	20.46	0.31	1.55	
Health	540	310	12.18	12.02	12.46	-0.17	-1.38	12.18	11.62	-0.56	-4.59	
Vocational/Technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other technical/professional	460	300	10.42	9.89	11.33	-0.55	-5.25	10.42	10.33	-0.09	-0.89	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	3,800	1,840	70.42	73.38	65.58	2.96*	4.21	70.42	72.00	1.58	2.24	
24–29	640	450	14.78	12.83	17.97	-1.95*	-13.19	14.78	13.82	-0.97	-6.55	
30 or older	660	450	14.60	13.78	15.94	-0.82	-5.61	14.60	14.19	-0.41	-2.84	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table J-7. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	70	100	2.23	1.53	3.37	-0.70*	-31.45	2.23	2.03	-0.20	-8.77	
No	3,590	1,610	64.68	69.83	56.27	5.15*	7.96	64.68	65.17	0.49	0.76	
Not applicable	1,430	1,050	33.10	28.65	40.36	-4.45*	-13.44	33.10	32.80	-0.30	-0.90	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-8. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Region of baccalaureate-granting institution <sup>4,5</sup>						(Effect size = ‡)				(Effect size = ‡)		
New England	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Mideast	550	330	7.55	7.28	7.86	-0.27	-3.57	7.55	7.71	0.16	2.09	
Great Lakes	530	330	13.18	12.71	13.71	-0.47	-3.55	13.18	11.95	-1.22	-9.28	
Plains	310	200	8.05	9.04	6.92	0.99	12.24	8.05	8.55	0.50	6.16	
Southeast	1,150	670	20.98	21.48	20.40	0.50	2.39	20.98	22.70	1.72	8.20	
Southwest	940	540	24.28	25.23	23.18	0.95	3.92	24.28	22.85	-1.43	-5.88	
Rocky Mountains	280	160	4.28	4.69	3.82	0.40	9.37	4.28	4.72	0.44	10.16	
Far West	910	610	20.56	18.91	22.46	-1.65	-8.02	20.56	20.98	0.42	2.06	
Outlying Areas	60	40	0.80	0.58	1.04	-0.21	-26.63	0.80	0.46	-0.33	-42.03	
Total enrollment of baccalaureate-granting institution <sup>6</sup>						(Effect size = 0.04)				(Effect size = 0.02)		
1–1,384	1,210	710	12.25	11.49	13.13	-0.76	-6.21	12.25	11.47	-0.78	-6.37	
1,385–3,213	1,240	700	11.81	11.60	12.06	-0.21	-1.82	11.81	12.05	0.24	2.01	
3,214–16,103	1,180	710	14.14	13.18	15.25	-0.96	-6.81	14.14	14.15	0.01	0.07	
16,104 or more	1,110	770	61.79	63.73	59.56	1.94	3.14	61.79	62.33	0.53	0.86	
Pell Grant status in 2015–16						(Effect size = 0.08)				(Effect size = 0.14)		
Received	2,060	1,030	31.38	31.52	31.22	0.14	0.45	31.38	28.78	-2.60	-8.29	
Did not receive	2,520	1,750	59.83	57.51	62.51	-2.32	-3.88	59.83	58.68	-1.15	-1.92	
Not applicable	150	110	8.79	10.97	6.27	2.18	24.83	8.79	12.54	3.75*	42.68	
Pell Grant amount received in 2015–16 <sup>7</sup>						(Effect size = 0.08)				(Effect size = 0.14)		
None	2,520	1,750	59.83	57.51	62.51	-2.32	-3.88	59.83	58.68	-1.15	-1.92	
\$1–\$2,887	820	380	11.62	11.68	11.55	0.06	0.54	11.62	10.62	-1.00	-8.62	
\$2,888–\$5,774	810	420	12.54	12.99	12.02	0.45	3.62	12.54	11.73	-0.81	-6.45	
\$5,775 or more	440	230	7.22	6.85	7.66	-0.38	-5.21	7.22	6.43	-0.79	-10.95	
Not applicable	150	110	8.79	10.97	6.27	2.18	24.83	8.79	12.54	3.75*	42.68	

See notes at end of table.

**Table J-8. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Direct Loan status in 2015–16						(Effect size = 0.08)				(Effect size = 0.04)		
Received	2,240	1,160	41.01	44.91	36.53	3.89*	9.49	41.01	38.86	-2.16	-5.25	
Did not receive	2,490	1,740	58.99	55.09	63.47	-3.89*	-6.60	58.99	61.14	2.16	3.65	
Direct Loan amount received in 2015–16 <sup>a</sup>						(Effect size = 0.08)				(Effect size = 0.05)		
None	2,490	1,740	58.99	55.09	63.47	-3.89*	-6.60	58.99	61.14	2.16	3.65	
\$1–\$3,666	570	280	11.26	12.09	10.31	0.83	7.36	11.26	10.58	-0.69	-6.10	
\$3,667–\$6,251	560	290	10.39	11.73	8.84	1.35	12.96	10.39	9.99	-0.40	-3.81	
\$6,252–\$10,937	560	290	9.71	10.33	9.00	0.62	6.37	9.71	8.85	-0.86	-8.85	
\$10,938 or more	550	300	9.65	10.75	8.38	1.10	11.39	9.65	9.44	-0.21	-2.20	
Parent PLUS Loan amount received in 2015–16 <sup>a</sup>						(Effect size = †)				(Effect size = †)		
None	4,390	2,710	89.46	87.08	92.19	-2.37	-2.65	89.46	85.63	-3.83*	-4.28	
\$1–\$5,682	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$5,683–\$10,241	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$10,242–\$18,258	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
\$18,259 or more	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Not applicable	150	110	8.79	10.97	6.27	2.18	24.83	8.79	12.54	3.75*	42.68	
Federal aid status in 2015–16						(Effect size = 0.04)				(Effect size = 0.07)		
Received	3,330	1,760	64.55	66.23	62.61	1.68	2.61	64.55	61.32	-3.23*	-5.01	
Did not receive	1,170	930	29.13	27.18	31.38	-1.95	-6.70	29.13	31.46	2.33	8.00	
Unknown	230	210	6.32	6.59	6.01	0.27	4.26	6.32	7.22	0.90	14.28	
Institution aid status in 2015–16						(Effect size = #)				(Effect size = 0.04)		
Received	2,030	1,140	40.44	40.64	40.22	0.19	0.48	40.44	38.67	-1.78	-4.39	
Did not receive	2,100	1,330	48.94	48.73	49.17	-0.20	-0.42	48.94	50.53	1.59	3.25	
Unknown	600	420	10.62	10.63	10.61	0.01	0.09	10.62	10.81	0.19	1.76	
State aid status in 2015–16						(Effect size = 0.02)				(Effect size = 0.03)		
Received	370	180	4.55	4.17	4.99	-0.38	-8.42	4.55	3.85	-0.69	-15.27	
Did not receive	3,700	2,260	84.37	84.88	83.77	0.52	0.61	84.37	84.94	0.58	0.69	
Unknown	660	460	11.09	10.95	11.24	-0.13	-1.20	11.09	11.20	0.12	1.05	
Any aid status in 2015–16						(Effect size = 0.16)				(Effect size = 0.01)		
Received	4,110	2,250	80.62	82.85	78.06	2.22	2.76	80.62	80.21	-0.42	-0.52	
Did not receive	350	170	6.32	8.70	3.57	2.38*	37.70	6.32	6.54	0.23	3.58	
Unknown	260	480	13.06	8.45	18.36	-4.60*	-35.26	13.06	13.25	0.19	1.47	

See notes at end of table.

**Table J-8. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Social Security number						(Effect size = 0.12)				(Effect size = #)		
Available	4,670	2,770	95.12	97.79	92.04	2.67*	2.81	95.12	95.20	0.08	0.09	
Not available	60	130	4.88	2.21	7.96	-2.67*	-54.74	4.88	4.80	-0.08	-1.70	
Veteran status in 2015–16						(Effect size = 0.08)				(Effect size = 0.01)		
Veteran	530	400	18.79	15.84	22.20	-2.96*	-15.74	18.79	18.36	-0.43	-2.31	
Not a veteran	4,200	2,490	81.21	84.16	77.80	2.96*	3.64	81.21	81.64	0.43	0.53	
Race/ethnicity						(Effect size = ‡)				(Effect size = ‡)		
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Asian, not Hispanic or Latino	310	230	5.81	4.34	7.50	-1.47*	-25.25	5.81	4.99	-0.82	-14.09	
Black, not Hispanic or Latino	1,040	520	22.92	25.43	20.02	2.51	10.97	22.92	24.36	1.45	6.31	
Hispanic or Latino, of any race	920	550	15.06	13.94	16.34	-1.11	-7.39	15.06	13.05	-2.00	-13.31	
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
White, not Hispanic or Latino	2,220	1,190	46.65	49.98	42.80	3.34	7.15	46.65	51.65	5.00*	10.73	
Two or more races, not Hispanic or Latino	160	70	2.57	3.27	1.76	0.70	27.30	2.57	2.50	-0.07	-2.58	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Sex						(Effect size = ‡)				(Effect size = ‡)		
Male	1,840	1,290	38.92	35.06	43.37	-3.86*	-9.93	38.92	38.51	-0.41	-1.05	
Female	2,890	1,600	60.98	64.94	56.42	3.96*	6.49	60.98	61.49	0.51	0.83	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>8</sup>						(Effect size = 0.12)				(Effect size = 0.07)		
None	690	570	23.04	18.43	28.36	-4.61*	-20.03	23.04	22.58	-0.46	-2.01	
\$1–\$29,729	1,000	600	26.90	29.76	23.60	2.86*	10.65	26.90	27.65	0.75	2.80	
\$29,730–\$44,456	1,010	590	18.77	18.18	19.44	-0.58	-3.11	18.77	16.74	-2.03	-10.81	
\$44,457–\$55,841	1,020	570	15.24	15.74	14.67	0.50	3.26	15.24	14.98	-0.27	-1.76	
\$55,842 or more	1,020	570	16.05	17.89	13.93	1.84	11.45	16.05	18.06	2.01	12.50	

See notes at end of table.



**Table J-8. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.11)				(Effect size = 0.08)		
None	3,850	2,470	79.50	75.67	83.92	-3.83*	-4.82	79.50	78.27	-1.23	-1.54	
\$1–\$17,002	220	110	4.31	4.49	4.11	0.18	4.07	4.31	3.86	-0.45	-10.45	
\$17,003–\$32,395	210	120	4.69	5.25	4.04	0.56	11.94	4.69	4.24	-0.45	-9.56	
\$32,396–\$47,799	230	100	4.73	5.49	3.85	0.76	16.15	4.73	6.14	1.41	29.83	
\$47,800 or more	230	100	6.77	9.11	4.08	2.34	34.49	6.77	7.49	0.72	10.57	
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.13)				(Effect size = 0.06)		
None	650	550	22.00	17.56	27.11	-4.44*	-20.17	22.00	21.81	-0.19	-0.85	
\$1–\$31,000	1,040	620	24.10	23.98	24.23	-0.11	-0.47	24.10	23.61	-0.49	-2.03	
\$31,001–\$48,000	990	570	18.40	19.17	17.52	0.76	4.15	18.40	17.70	-0.70	-3.81	
\$48,001–\$57,500	990	640	14.79	14.65	14.95	-0.14	-0.95	14.79	13.86	-0.93	-6.27	
\$57,501 or more	1,070	520	20.71	24.64	16.19	3.93*	18.95	20.71	23.02	2.30*	11.13	
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.14)				(Effect size = 0.07)		
None	380	270	9.07	7.91	10.42	-1.17	-12.86	9.07	8.88	-0.19	-2.13	
1–94	950	490	18.32	19.30	17.19	0.98	5.35	18.32	17.01	-1.31	-7.15	
95–112	970	490	18.09	21.45	14.21	3.37*	18.61	18.09	17.46	-0.63	-3.48	
113–122	950	490	16.60	18.78	14.09	2.18*	13.12	16.60	19.05	2.44*	14.72	
123 or more	830	590	15.92	15.00	16.98	-0.92	-5.79	15.92	15.79	-0.12	-0.77	
Not applicable	650	550	22.00	17.56	27.11	-4.44*	-20.17	22.00	21.81	-0.19	-0.85	
Amount owed on federal student loans in principal, 4 years after BA completion <sup>a</sup>												
						(Effect size = 0.13)				(Effect size = 0.05)		
None	380	270	9.07	7.91	10.42	-1.17	-12.86	9.07	8.88	-0.19	-2.13	
\$1–\$31,859	930	520	19.12	19.38	18.83	0.26	1.34	19.12	17.87	-1.25	-6.52	
\$31,860–\$52,720	910	530	17.05	18.69	15.16	1.64	9.61	17.05	16.98	-0.07	-0.43	
\$52,721–\$67,828	910	540	16.06	18.59	13.14	2.53	15.77	16.06	16.05	-0.01	-0.03	
\$67,829 or more	950	490	16.70	17.87	15.34	1.18	7.05	16.70	18.41	1.71	10.23	
Not applicable	650	550	22.00	17.56	27.11	-4.44*	-20.17	22.00	21.81	-0.19	-0.85	

See notes at end of table.

**Table J-8. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Baccalaureate major						(Effect size = ‡)				(Effect size = ‡)		
Undecided	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Humanities	630	400	8.70	7.98	9.48	-0.70	-8.01	8.70	8.62	-0.08	-0.88	
Social/Behavioral sciences	160	50	3.43	4.34	2.43	0.89*	25.97	3.43	3.69	0.26	7.62	
Life sciences	80	70	3.78	3.48	4.11	-0.29	-7.69	3.78	3.15	-0.64	-16.87	
Physical sciences/Mathematics	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Computer/Information science	780	420	8.62	9.15	8.05	0.51	5.93	8.62	8.24	-0.38	-4.42	
Engineering	190	140	2.84	3.24	2.41	0.39	13.63	2.84	3.43	0.59	20.74	
Education	240	100	2.94	3.46	2.37	0.50	17.16	2.94	2.99	0.05	1.67	
Business/Management	640	510	28.69	25.94	31.69	-2.67*	-9.30	28.69	29.35	0.66	2.31	
Health	1,170	670	27.60	29.44	25.59	1.79	6.49	27.60	26.89	-0.71	-2.56	
Vocational/Technical	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Other technical/professional	660	400	12.42	12.05	12.82	-0.36	-2.88	12.42	12.05	-0.37	-2.98	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	
Age as of December 31, 2015						(Effect size = ‡)				(Effect size = ‡)		
15–23	950	490	11.82	12.01	11.61	0.19	1.57	11.82	11.19	-0.63	-5.36	
24–29	1,330	820	25.69	26.36	24.92	0.67	2.59	25.69	26.48	0.78	3.05	
30 or older	2,460	1,570	62.44	61.64	63.35	-0.80	-1.28	62.44	62.34	-0.10	-0.16	
Unknown	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

See notes at end of table.

**Table J-8. Unit-level nonresponse bias analysis for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by selected variables: 2020—Continued**

Selected variables	Before weight adjustment						After nonresponse weight adjustment					
	Unweighted respondents	Unweighted non-respondents	Means, base weighted			Respondents vs. eligible sample		Means		Respondents vs. eligible sample		
			Eligible sample	Respondent	Non-respondent	Estimated bias <sup>1</sup>	Relative bias <sup>2</sup>	Eligible sample, base weighted	Respondents, nonresponse adjusted	Estimated bias <sup>3</sup>	Relative bias <sup>2</sup>	
Currently in default on federal student loans, 4 years after BA completion												
Yes	180	210	4.79	3.57	6.19	-1.22*	-25.37	4.79	5.15	0.36	7.53	
No	3,890	2,130	73.21	78.86	66.70	5.65*	7.72	73.21	73.04	-0.17	-0.24	
Not applicable	650	550	22.00	17.56	27.11	-4.44*	-20.17	22.00	21.81	-0.19	-0.85	

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> This value is calculated as the difference between the base-weighted respondent and the base-weighted eligible-sample mean.<sup>2</sup> Relative bias is calculated as 100 times the ratio of estimated bias to the base-weighted eligible-sample mean.<sup>3</sup> This value is calculated as the difference between the base-weighted respondent mean adjusted for nonresponse and the base-weighted eligible-sample mean.<sup>4</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>5</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>6</sup> Categories were defined by quartiles computed at the institution level.<sup>7</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>8</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight. Effect size is calculated as the square root of the sum over categories of the squared differences (respondent vs. eligible sample) over eligible-sample means. Effect sizes are not reported if any variable categories do not meet reporting standards.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-9. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>3</sup>					
Public	63.22	63.22	63.61	-0.39	-0.39
Private nonprofit	30.48	30.48	30.27	0.21	0.21
Private for-profit	6.31	6.31	6.12	0.19	0.19
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	6.55	6.55	6.58	-0.03	-0.03
Mideast	17.71	17.71	17.55	0.16	0.16
Great Lakes	15.98	15.98	16.18	-0.20	-0.20
Plains	7.66	7.66	7.45	0.21	0.21
Southeast	22.72	22.72	23.02	-0.30	-0.30
Southwest	10.27	10.27	9.97	0.30	0.30
Rocky Mountains	4.16	4.16	4.03	0.13	0.13
Far West	14.17	14.17	14.59	-0.42	-0.42
Outlying Areas	0.77	0.77	0.64	0.13	0.13
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–2,907	11.38	11.38	12.30	-0.92*	-0.92*
2,908–10,157	21.28	21.28	21.69	-0.41	-0.41
10,158–27,396	30.97	30.97	31.04	-0.07	-0.07
27,397 or more	36.37	36.37	34.97	1.40*	1.40*
Pell Grant status in 2015–16					
Received	28.96	28.96	32.31	-3.35*	-3.35*
Did not receive	67.07	67.19	64.78	2.29*	2.41*
Not applicable	3.97	3.85	2.91	1.06*	0.94*
Pell Grant amount received in 2015–16 <sup>6</sup>					
None	67.07	67.19	64.78	2.29*	2.41*
\$1–\$2,888	10.00	10.00	11.18	-1.18*	-1.18*
\$2,889–\$5,774	11.63	11.63	12.74	-1.11*	-1.11*
\$5,775 or more	7.33	7.33	8.39	-1.06*	-1.06*
Not applicable	3.97	3.85	2.91	1.06*	0.94*
Direct Loan status in 2015–16					
Received	43.17	43.17	46.67	-3.50*	-3.50*
Did not receive	56.83	56.83	53.33	3.50*	3.50*
Direct Loan amount received in 2015–16 <sup>7</sup>					
None	56.83	56.83	53.33	3.50*	3.50*
\$1–\$4,198	10.27	10.27	10.64	-0.37	-0.37
\$4,199–\$7,500	23.15	23.15	24.91	-1.76*	-1.76*
\$7,501–\$8,297	0.46	0.46	0.53	-0.07*	-0.07
\$8,298 or more	9.29	9.29	10.58	-1.29*	-1.29*
Parent PLUS Loan amount received in 2015–16 <sup>7</sup>					
None	94.25	94.26	93.98	0.27*	0.28
\$1–\$7,050	1.29	1.29	1.36	-0.07	-0.07
\$7,051–\$12,752	1.42	1.42	1.53	-0.11*	-0.11
\$12,753–\$20,268	1.49	1.50	1.52	-0.03	-0.02
\$20,269 or more	1.55	1.54	1.61	-0.06	-0.07

See notes at end of table.

**Table J-9. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	55.52	55.52	59.67	-4.15*	-4.15*
Did not receive	37.78	37.78	34.59	3.19*	3.19*
Unknown	6.70	6.70	5.75	0.95*	0.95*
Institution aid status in 2015–16					
Received	38.15	38.15	39.78	-1.63*	-1.63*
Did not receive	50.44	50.44	49.33	1.11*	1.11*
Unknown	11.40	11.40	10.89	0.51	0.51
State aid status in 2015–16					
Received	18.80	18.80	20.32	-1.52*	-1.52*
Did not receive	69.80	69.80	68.66	1.14*	1.14*
Unknown	11.40	11.40	11.02	0.38	0.38
Any aid status in 2015–16					
Received	75.53	74.03	79.09	-3.56*	-5.06*
Did not receive	9.61	9.61	9.30	0.31	0.31
Unknown	14.86	16.35	11.61	3.25*	4.74*
Social Security number					
Available	95.34	95.34	97.34	-2.00*	-2.00*
Not available	4.66	4.66	2.66	2.00*	2.00*
Veteran status in 2015–16					
Veteran	4.04	4.04	4.09	-0.05	-0.05
Not a veteran	95.96	95.96	95.91	0.05	0.05
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	0.54	0.54	0.52	0.02	0.02
Asian, not Hispanic or Latino	8.23	8.23	7.71	0.52*	0.52
Black, not Hispanic or Latino	9.59	9.59	10.08	-0.49*	-0.49
Hispanic or Latino, of any race	12.20	12.20	12.37	-0.17	-0.17
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	65.03	62.51	64.76	0.27	-2.25*
Two or more races, not Hispanic or Latino	3.13	3.13	3.30	-0.17*	-0.17
Unknown	1.03	3.55	0.98	0.05	2.57*
Sex					
Male	42.58	42.58	42.64	-0.06	-0.06
Female	57.42	57.33	57.36	0.06	-0.03
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	37.15	37.15	33.15	4.00*	4.00*
\$1–\$19,500	20.18	20.18	20.29	-0.11	-0.11
\$19,501–\$29,500	19.19	19.19	20.20	-1.01*	-1.01*
\$29,501–\$45,000	14.97	14.97	16.44	-1.47*	-1.47*
\$45,001 or more	8.52	8.52	9.92	-1.40*	-1.40*

See notes at end of table.

**Table J-9. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	82.21	82.21	81.59	0.62*	0.62*
\$1–\$18,601	4.29	4.29	4.21	0.08	0.08
\$18,602–\$35,806	4.06	4.06	4.17	-0.11	-0.11
\$35,807–\$61,500	4.58	4.58	4.79	-0.21	-0.21
\$61,501 or more	4.85	4.85	5.24	-0.39*	-0.39*
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	33.74	33.74	29.79	3.95*	3.95*
\$1–\$22,500	20.93	20.93	20.92	0.01	0.01
\$22,501–\$34,149	18.64	18.64	20.10	-1.46*	-1.46*
\$34,150–\$55,615	13.52	13.52	14.60	-1.08*	-1.08*
\$55,616 or more	13.17	13.17	14.59	-1.42*	-1.42*
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	11.78	11.78	11.96	-0.18	-0.18
1–80	16.63	16.63	17.33	-0.70*	-0.70*
81–105	15.44	15.44	16.31	-0.87*	-0.87*
106–116	12.85	12.85	13.97	-1.12*	-1.12*
117 or more	9.56	9.56	10.63	-1.07*	-1.07*
Not applicable	33.74	33.74	29.79	3.95*	3.95*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	11.78	11.78	11.96	-0.18	-0.18
\$1–\$20,214	17.24	17.24	17.64	-0.40	-0.40
\$20,215–\$37,494	15.03	15.03	16.12	-1.09*	-1.09*
\$37,495–\$63,654	11.13	11.13	12.04	-0.91*	-0.91*
\$63,655 or more	11.10	11.10	12.45	-1.35*	-1.35*
Not applicable	33.74	33.74	29.79	3.95*	3.95*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	10.66	10.67	12.42	-1.76*	-1.75*
Social/Behavioral sciences	13.42	13.44	14.09	-0.67*	-0.65*
Life sciences	11.72	11.74	12.75	-1.03*	-1.01*
Physical sciences/Mathematics	2.54	2.54	2.92	-0.38*	-0.38*
Computer/Information science	3.55	3.55	3.29	0.26	0.26*
Engineering	7.04	7.05	6.10	0.94*	0.95*
Education	5.17	5.17	4.37	0.80*	0.80*
Business/Management	18.96	18.98	19.29	-0.33	-0.31
Health	12.17	12.19	11.39	0.78*	0.80*
Vocational/Technical	0.70	0.70	0.67	0.03	0.03
Other technical/professional	13.12	13.13	12.08	1.04*	1.05*
Unknown	0.95	0.84	0.62	0.33*	0.22

See notes at end of table.

**Table J-9. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	64.78	64.44	64.66	0.12	-0.22
24–29	19.34	19.34	19.37	-0.03	-0.03
30 or older	15.88	15.88	15.96	-0.08	-0.08
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	2.14	2.14	2.22	-0.08	-0.08
No	64.13	64.13	68.00	-3.87*	-3.87*
Not applicable	33.74	33.74	29.79	3.95*	3.95*

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.

<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.

<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>5</sup> Categories were defined by quartiles computed at the institution level.

<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor’s degree. “Base weight” refers to the B&B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table J-10. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	3.66	3.88	3.91	-0.25*	-0.03
Mideast	15.15	14.63	14.60	0.55	0.03
Great Lakes	16.51	16.62	16.43	0.08	0.19
Plains	7.30	7.21	7.05	0.25	0.16
Southeast	25.16	25.35	25.63	-0.47	-0.28
Southwest	12.03	11.83	11.76	0.27	0.07
Rocky Mountains	3.61	3.88	3.66	-0.05	0.22
Far West	16.27	16.23	16.66	-0.39	-0.43
Outlying Areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–11,413	20.34	19.93	20.57	-0.23	-0.64
11,414–22,020	24.08	23.96	24.52	-0.44	-0.56
22,021–35,263	26.07	27.19	26.41	-0.34	0.78
35,264 or more	29.51	28.92	28.51	1.00	0.41
Pell Grant status in 2015–16					
Received	30.07	29.73	33.01	-2.94*	-3.28*
Did not receive	66.59	67.10	64.41	2.18*	2.69*
Not applicable	3.35	3.17	2.58	0.77*	0.59*
Pell Grant amount received 2015–16 <sup>6</sup>					
None	66.59	67.10	64.41	2.18*	2.69*
\$1–\$2,887	9.98	9.89	11.09	-1.11*	-1.20*
\$2,888–\$5,774	12.55	12.45	13.45	-0.90*	-1.00*
\$5,775 or more	7.54	7.39	8.46	-0.92*	-1.07*
Not applicable	3.35	3.17	2.58	0.77*	0.59*
Direct Loan status in 2015–16					
Received	41.11	40.57	44.01	-2.90*	-3.44*
Did not receive	58.89	59.43	55.99	2.90*	3.44*
Total Direct Loan amount received 2015–16 <sup>7</sup>					
None	58.89	59.43	55.99	2.90*	3.44*
\$1–\$4,000	10.69	10.62	11.33	-0.64*	-0.71*
\$4,001–\$6,250	9.19	9.15	9.99	-0.80*	-0.84*
\$6,251–\$7,500	11.90	12.02	12.51	-0.61*	-0.49
\$7,501 or more	9.32	8.78	10.18	-0.86*	-1.40*
Parent PLUS Loan amount received 2015–16 <sup>7</sup>					
None	92.01	92.14	92.63	-0.62*	-0.49
\$1–\$6,000	1.20	1.16	1.20	#	-0.04
\$6,001–\$11,326	1.02	1.05	1.07	-0.05	-0.02
\$11,327–\$16,800	1.06	1.10	1.08	-0.02	0.02
\$16,801 or more	1.37	1.38	1.44	-0.07	-0.06
Not applicable	3.35	3.17	2.58	0.77*	0.59*

See notes at end of table.



**Table J-10. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	53.57	53.06	57.22	-3.65*	-4.16*
Did not receive	38.99	39.79	36.20	2.79*	3.59*
Unknown	7.44	7.15	6.58	0.86*	0.57
Institution aid status in 2015–16					
Received	27.79	27.80	28.69	-0.90*	-0.89
Did not receive	58.54	59.07	58.24	0.30	0.83
Unknown	13.68	13.13	13.07	0.61*	0.06
State aid status in 2015–16					
Received	20.98	21.17	22.53	-1.55*	-1.36*
Did not receive	66.23	66.53	65.21	1.02*	1.32*
Unknown	12.78	12.30	12.27	0.51	0.03
Any aid status in 2015–16					
Received	72.06	70.02	75.32	-3.26*	-5.30*
Did not receive	11.31	11.28	11.07	0.24	0.21
Unknown	16.63	18.69	13.61	3.02*	5.08*
Social Security number					
Available	95.20	95.28	97.25	-2.05*	-1.97*
Not available	4.80	4.72	2.75	2.05*	1.97*
Veteran status in 2015–16					
Veteran	2.83	2.90	3.10	-0.27*	-0.20
Not a veteran	97.17	97.10	96.90	0.27*	0.20
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡
Asian, not Hispanic or Latino	8.81	8.77	8.17	0.64*	0.60
Black, not Hispanic or Latino	8.59	8.57	9.13	-0.54*	-0.56
Hispanic or Latino, of any race	12.64	12.58	12.72	-0.08	-0.14
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	64.95	62.60	64.73	0.22	-2.13*
Two or more races, not Hispanic or Latino	3.29	3.21	3.42	-0.13	-0.21
Unknown	0.89	3.44	0.89	#	2.55*
Sex					
Male	43.34	43.19	43.70	-0.36	-0.51
Female	56.66	56.68	56.30	0.36	0.38
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	39.42	39.06	35.15	4.27*	3.91*
\$1–\$14,250	13.99	14.75	14.74	-0.75*	0.01
\$14,251–\$25,500	16.20	16.06	16.64	-0.44	-0.58
\$25,501–\$33,086	15.54	15.56	16.67	-1.13*	-1.11*
\$33,087 or more	14.84	14.57	16.81	-1.97*	-2.24*

See notes at end of table.

**Table J-10. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	82.74	82.75	81.78	0.96*	0.97*
\$1–\$18,985	4.41	4.31	4.33	0.08	-0.02
\$18,986–\$38,246	4.33	4.16	4.54	-0.21	-0.38*
\$38,247–\$68,981	3.99	4.35	4.41	-0.42*	-0.06
\$68,982 or more	4.53	4.42	4.94	-0.41*	-0.52*
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	35.49	35.21	31.26	4.23*	3.95*
\$1–\$17,400	15.57	16.06	16.20	-0.63*	-0.14
\$17,401–\$28,897	16.92	17.04	17.61	-0.69*	-0.57
\$28,898–\$47,422	16.84	16.24	18.00	-1.16*	-1.76*
\$47,423 or more	15.18	15.44	16.94	-1.76*	-1.50*
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	11.37	11.59	11.93	-0.56*	-0.34
1–75	13.91	14.21	14.39	-0.48*	-0.18
76–101	14.38	14.06	15.13	-0.75*	-1.07*
102–113	13.27	13.31	14.44	-1.17*	-1.13*
114 or more	11.58	11.61	12.86	-1.28*	-1.25*
Not applicable	35.49	35.21	31.26	4.23*	3.95*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	11.37	11.59	11.93	-0.56*	-0.34
\$1–\$16,130	12.98	13.43	13.44	-0.46*	-0.01
\$16,131–\$29,915	14.35	14.00	15.06	-0.71*	-1.06*
\$29,916–\$55,332	13.03	12.92	14.06	-1.03*	-1.14*
\$55,333 or more	12.78	12.85	14.26	-1.48*	-1.41*
Not applicable	35.49	35.21	31.26	4.23*	3.95*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	9.27	9.44	10.51	-1.24*	-1.07*
Social/Behavioral sciences	13.77	13.68	14.59	-0.82*	-0.91*
Life sciences	12.63	12.59	13.90	-1.27*	-1.31*
Physical sciences/Mathematics	2.33	2.45	2.68	-0.35*	-0.23
Computer/Information science	3.48	3.32	3.15	0.33	0.17
Engineering	8.10	8.43	7.10	1.00*	1.33*
Education	5.76	5.51	4.85	0.91*	0.66*
Business/Management	17.13	17.50	18.03	-0.90*	-0.53
Health	11.15	10.74	10.32	0.83*	0.42
Vocational/Technical	‡	‡	‡	‡	‡
Other technical/professional	14.51	14.50	13.34	1.17*	1.16*
Unknown	0.99	1.01	0.69	0.30*	0.32

See notes at end of table.

**Table J-10. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	66.66	66.81	65.64	1.02*	1.17*
24–29	21.38	20.91	21.65	-0.27	-0.74
30 or older	11.97	11.84	12.71	-0.74*	-0.87*
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	1.84	1.83	1.91	-0.07	-0.08
No	62.67	62.96	66.83	-4.16*	-3.87*
Not applicable	35.49	35.21	31.26	4.23*	3.95*

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>5</sup> Categories were defined by quartiles computed at the institution level.<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-11. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	13.88	13.38	13.49	0.39	-0.11
Mideast	25.17	26.21	25.33	-0.16	0.88
Great Lakes	15.69	15.23	15.94	-0.25	-0.71
Plains	8.27	8.53	8.72	-0.45*	-0.19
Southeast	17.82	17.63	17.75	0.07	-0.12
Southwest	4.04	4.13	3.85	0.19	0.28
Rocky Mountains	4.98	4.71	4.78	0.20	-0.07
Far West	8.35	8.59	8.76	-0.41	-0.17
Outlying Areas	1.81	1.59	1.37	0.44	0.22
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–2,395	22.15	22.05	23.05	-0.90	-1.00
2,396–4,774	23.41	23.45	24.37	-0.96*	-0.92
4,775–11,971	25.20	25.78	24.86	0.34	0.92
11,972 or more	29.24	28.71	27.71	1.53*	1.00
Pell Grant status in 2015–16					
Received	26.67	26.87	29.22	-2.55*	-2.35*
Did not receive	69.96	68.90	68.02	1.94*	0.88
Not applicable	3.37	4.23	2.76	0.61	1.47*
Pell Grant amount received in 2015–16 <sup>6</sup>					
None	69.96	68.90	68.02	1.94*	0.88
\$1–\$2,888	8.92	8.90	9.56	-0.64*	-0.66
\$2,889–\$5,774	10.62	10.74	11.61	-0.99*	-0.87*
\$5,775 or more	7.13	7.23	8.05	-0.92*	-0.82*
Not applicable	3.37	4.23	2.76	0.61	1.47*
Direct Loan status in 2015–16					
Received	48.18	49.01	51.97	-3.79*	-2.96*
Did not receive	51.82	50.99	48.03	3.79*	2.96*
Total Direct Loan amount received 2015–16 <sup>7</sup>					
None	51.82	50.99	48.03	3.79*	2.96*
\$1–\$5,500	14.23	13.73	14.38	-0.15	-0.65
\$5,501–\$7,500	24.42	24.75	26.57	-2.15*	-1.82*
\$7,501 or more	9.53	10.53	11.02	-1.49*	-0.49
Parent PLUS Loan amount received 2015–16 <sup>7</sup>					
None	88.52	87.73	88.52	#	-0.79
\$1–\$9,000	1.96	1.85	2.20	-0.24*	-0.35*
\$9,001–\$15,082	1.92	2.00	2.13	-0.21*	-0.13
\$15,083–\$24,196	2.08	2.05	2.16	-0.08	-0.11
\$24,197 or more	2.15	2.14	2.23	-0.08	-0.09
Not applicable	3.37	4.23	2.76	0.61	1.47*

See notes at end of table.

**Table J-11. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	58.23	58.75	62.44	-4.21*	-3.69*
Did not receive	36.74	35.40	33.23	3.51*	2.17*
Unknown	5.03	5.85	4.33	0.70*	1.52*
Institution aid status in 2015–16					
Received	59.47	59.14	62.41	-2.94*	-3.27*
Did not receive	33.65	32.87	30.96	2.69*	1.91*
Unknown	6.88	7.99	6.63	0.25	1.36*
State aid status in 2015–16					
Received	17.37	16.82	18.53	-1.16*	-1.71*
Did not receive	73.98	73.56	72.89	1.09*	0.67
Unknown	8.65	9.62	8.58	0.07	1.04
Any aid status in 2015–16					
Received	81.81	80.98	85.36	-3.55*	-4.38*
Did not receive	6.76	6.84	6.27	0.49	0.57
Unknown	11.43	12.18	8.37	3.06*	3.81*
Social Security number					
Available	95.71	95.50	97.50	-1.79*	-2.00*
Not available	4.29	4.50	2.50	1.79*	2.00*
Veteran status in 2015–16					
Veteran	3.48	3.33	3.50	-0.02	-0.17
Not a veteran	96.52	96.67	96.50	0.02	0.17
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡
Asian, not Hispanic or Latino	7.71	7.60	7.18	0.53	0.42
Black, not Hispanic or Latino	8.59	8.97	9.38	-0.79*	-0.41
Hispanic or Latino, of any race	11.09	10.81	10.94	0.15	-0.13
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	67.99	65.60	67.72	0.27	-2.12*
Two or more races, not Hispanic or Latino	2.93	3.07	3.15	-0.22*	-0.08
Unknown	1.17	3.36	1.14	0.03	2.22*
Sex					
Male	41.86	42.08	41.14	0.72	0.94
Female	58.14	57.92	58.86	-0.72	-0.94
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	35.56	36.09	32.17	3.39*	3.92*
\$1–\$19,299	17.32	16.57	16.88	0.44	-0.31
\$19,300–\$27,000	19.96	19.64	21.26	-1.30*	-1.62*
\$27,001–\$34,656	11.75	11.76	12.34	-0.59	-0.58
\$34,657 or more	15.40	15.95	17.36	-1.96*	-1.41*

See notes at end of table.

**Table J-11. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	82.08	81.66	81.61	0.47	0.05
\$1–\$20,000	4.50	4.50	4.26	0.24	0.24
\$20,001–\$37,659	4.40	4.76	4.55	-0.15	0.21
\$37,660–\$70,167	4.51	4.60	5.03	-0.52*	-0.43
\$70,168 or more	4.51	4.47	4.55	-0.04	-0.08
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	32.68	33.10	29.40	3.28*	3.70*
\$1–\$21,500	19.09	17.94	18.37	0.72	-0.43
\$21,501–\$30,000	17.20	16.89	18.52	-1.32*	-1.63*
\$30,001–\$49,651	15.20	16.02	16.57	-1.37*	-0.55
\$49,652 or more	15.83	16.05	17.14	-1.31*	-1.09*
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	13.22	12.72	12.86	0.36	-0.14
1–74	13.97	13.82	14.88	-0.91*	-1.06*
75–99	13.78	13.78	14.54	-0.76*	-0.76
100–112	13.91	13.69	14.57	-0.66	-0.88*
113 or more	12.44	12.89	13.75	-1.31*	-0.86
Not applicable	32.68	33.10	29.40	3.28*	3.70*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	13.22	12.72	12.86	0.36	-0.14
\$1–\$18,636	14.11	13.55	14.72	-0.61*	-1.17*
\$18,637–\$30,377	13.55	13.87	14.29	-0.74*	-0.42
\$30,378–\$57,552	13.45	13.60	14.81	-1.36*	-1.21*
\$57,553 or more	12.99	13.17	13.91	-0.92*	-0.74
Not applicable	32.68	33.10	29.40	3.28*	3.70*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	13.91	13.63	16.27	-2.36*	-2.64*
Social/Behavioral sciences	14.48	14.91	14.91	-0.43	#
Life sciences	11.43	11.51	12.21	-0.78*	-0.70*
Physical sciences/Mathematics	3.42	3.23	3.99	-0.57*	-0.76*
Computer/Information science	2.87	3.03	2.63	0.24*	0.40*
Engineering	5.55	4.98	4.70	0.85*	0.28
Education	4.35	4.90	3.58	0.77*	1.32*
Business/Management	20.71	20.15	20.60	0.11	-0.45
Health	11.62	12.18	10.91	0.71*	1.27*
Vocational/Technical	‡	‡	‡	‡	‡
Other technical/professional	10.51	10.42	9.33	1.18*	1.09*
Unknown	‡	‡	‡	‡	‡

See notes at end of table.

**Table J-11. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	72.07	70.42	72.83	-0.76	-2.41*
24–29	13.64	14.78	13.20	0.44	1.58*
30 or older	14.29	14.60	13.97	0.32	0.63
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	2.17	2.23	2.19	-0.02	0.04
No	65.15	64.68	68.40	-3.25*	-3.72*
Not applicable	32.68	33.10	29.40	3.28*	3.70*

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.

<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.

<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>5</sup> Categories were defined by quartiles computed at the institution level.

<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor’s degree. “Base weight” refers to the B&B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table J-12. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	‡	‡	‡	‡	‡
Mideast	7.37	7.55	9.83	-2.46*	-2.28
Great Lakes	12.07	13.18	14.70	-2.63	-1.52
Plains	8.38	8.05	5.27	3.11	2.78
Southeast	22.00	20.98	21.97	0.03	-0.99
Southwest	22.73	24.28	21.62	1.11	2.66
Rocky Mountains	5.67	4.28	4.05	1.62	0.23
Far West	21.25	20.56	21.90	-0.65	-1.34
Outlying Areas	0.45	0.80	0.52	-0.07	0.28
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–1,384	11.26	12.25	16.76	-5.50*	-4.51*
1,385–3,213	12.09	11.81	16.97	-4.88*	-5.16*
3,214–16,103	14.16	14.14	18.00	-3.84*	-3.86*
16,104 or more	62.49	61.79	48.28	14.21*	13.51*
Pell Grant status in 2015–16					
Received	28.94	31.38	40.36	-11.42*	-8.98*
Did not receive	57.89	59.83	52.59	5.30*	7.24*
Not applicable	13.18	8.79	7.06	6.12	1.73
Pell Grant amount received 2015–16 <sup>6</sup>					
None	57.89	59.83	52.59	5.30*	7.24*
\$1–\$2,887	10.77	11.62	14.60	-3.83*	-2.98*
\$2,888–\$5,774	11.98	12.54	16.46	-4.48*	-3.92*
\$5,775 or more	6.18	7.22	9.30	-3.12*	-2.08*
Not applicable	13.18	8.79	7.06	6.12	1.73
Direct Loan status in 2015–16					
Received	39.62	41.01	48.02	-8.40*	-7.01*
Did not receive	60.38	58.99	51.98	8.40*	7.01*
Total Direct Loan amount received 2015–16 <sup>7</sup>					
None	60.38	58.99	51.98	8.40*	7.01*
\$1–\$3,666	10.75	11.26	10.04	0.71	1.22
\$3,667–\$6,251	10.44	10.39	12.13	-1.69	-1.74
\$6,252–\$10,937	8.85	9.71	12.46	-3.61*	-2.75*
\$10,938 or more	9.58	9.65	13.39	-3.81*	-3.74*
Parent PLUS Loan amount received 2015–16 <sup>7</sup>					
None	85.05	89.46	90.31	-5.26	-0.85
\$1–\$5,682	‡	‡	‡	‡	‡
\$5,683–\$10,241	‡	‡	‡	‡	‡
\$10,242–\$18,258	‡	‡	‡	‡	‡
\$18,259 or more	‡	‡	‡	‡	‡
Not applicable	13.18	8.79	7.06	6.12	1.73

See notes at end of table.



**Table J-12. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	61.98	64.55	71.38	-9.40*	-6.83*
Did not receive	30.71	29.13	24.56	6.15*	4.57*
Unknown	7.31	6.32	4.06	3.25	2.26
Institution aid status in 2015–16					
Received	39.06	40.44	43.17	-4.11	-2.73
Did not receive	50.46	48.94	47.60	2.86	1.34
Unknown	10.48	10.62	9.22	1.26	1.40
State aid status in 2015–16					
Received	3.80	4.55	6.22	-2.42*	-1.67*
Did not receive	85.28	84.37	83.69	1.59	0.68
Unknown	10.92	11.09	10.09	0.83	1.00
Any aid status in 2015–16					
Received	79.92	80.62	87.23	-7.31*	-6.61*
Did not receive	6.43	6.32	5.95	0.48	0.37
Unknown	13.65	13.06	6.82	6.83*	6.24*
Social Security number					
Available	94.92	95.12	97.59	-2.67	-2.47
Not available	5.08	4.88	2.41	2.67	2.47
Veteran status in 2015–16					
Veteran	18.83	18.79	17.20	1.63	1.59
Not a veteran	81.17	81.21	82.80	-1.63	-1.59
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡
Asian, not Hispanic or Latino	4.90	5.81	5.44	-0.54	0.37
Black, not Hispanic or Latino	24.47	22.92	23.51	0.96	-0.59
Hispanic or Latino, of any race	13.10	15.06	15.73	-2.63*	-0.67
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	51.63	46.65	50.48	1.15	-3.83*
Two or more races, not Hispanic or Latino	2.41	2.57	2.88	-0.47	-0.31
Unknown	‡	‡	‡	‡	‡
Sex					
Male	38.50	38.92	39.15	-0.65	-0.23
Female	61.50	60.98	60.85	0.65	0.13
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	22.03	23.04	17.16	4.87*	5.88*
\$1–\$29,729	27.98	26.90	21.73	6.25*	5.17*
\$29,730–\$44,456	17.13	18.77	19.38	-2.25	-0.61
\$44,457–\$55,841	15.13	15.24	19.74	-4.61*	-4.50*
\$55,842 or more	17.72	16.05	21.99	-4.27*	-5.94*

See notes at end of table.

**Table J-12. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	77.57	79.50	79.47	-1.90	0.03
\$1–\$17,002	3.91	4.31	4.37	-0.46	-0.06
\$17,003–\$32,395	4.42	4.69	4.55	-0.13	0.14
\$32,396–\$47,799	6.39	4.73	5.58	0.81	-0.85*
\$47,800 or more	7.72	6.77	6.02	1.70	0.75
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	21.27	22.00	16.38	4.89*	5.62*
\$1–\$31,000	23.70	24.10	20.99	2.71	3.11*
\$31,001–\$48,000	17.90	18.40	20.05	-2.15	-1.65
\$48,001–\$57,500	13.80	14.79	18.85	-5.05*	-4.06*
\$57,501 or more	23.33	20.71	23.74	-0.41	-3.03
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	8.86	9.07	7.86	1.00	1.21
1–94	16.74	18.32	17.83	-1.09	0.49
95–112	18.19	18.09	18.45	-0.26	-0.36
113–122	19.25	16.60	21.20	-1.95	-4.60*
123 or more	15.68	15.92	18.29	-2.61*	-2.37*
Not applicable	21.27	22.00	16.38	4.89*	5.62*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	8.86	9.07	7.86	1.00	1.21
\$1–\$31,859	17.78	19.12	18.05	-0.27	1.07
\$31,860–\$52,720	17.29	17.05	18.48	-1.19	-1.43
\$52,721–\$67,828	16.32	16.06	17.50	-1.18	-1.44
\$67,829 or more	18.49	16.70	21.74	-3.25*	-5.04*
Not applicable	21.27	22.00	16.38	4.89*	5.62*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	8.61	8.70	13.32	-4.71*	-4.62*
Social/Behavioral sciences	3.82	3.43	4.44	-0.62	-1.01
Life sciences	3.15	3.78	2.93	0.22	0.85
Physical sciences/Mathematics	‡	‡	‡	‡	‡
Computer/Information science	7.86	8.62	8.38	-0.52	0.24
Engineering	3.30	2.84	2.39	0.91	0.45
Education	2.97	2.94	3.33	-0.36	-0.39
Business/Management	29.91	28.69	26.18	3.73	2.51
Health	26.63	27.60	25.66	0.97	1.94
Vocational/Technical	‡	‡	‡	‡	‡
Other technical/professional	11.69	12.42	12.53	-0.84	-0.11
Unknown	‡	‡	‡	‡	‡

See notes at end of table.

**Table J-12. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight B (B&B:16/20 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	10.76	11.82	14.10	-3.34*	-2.28*
24–29	26.52	25.69	26.31	0.21	-0.62
30 or older	62.72	62.44	59.59	3.13	2.85
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	4.92	4.79	5.55	-0.63	-0.76
No	73.81	73.21	78.08	-4.27*	-4.87*
Not applicable	21.27	22.00	16.38	4.89*	5.62*

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.

<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.

<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>5</sup> Categories were defined by quartiles computed at the institution level.

<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor’s degree. “Base weight” refers to the B&B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table J-13. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Control of baccalaureate-granting institution <sup>3</sup>					
Public	63.22	63.22	63.61	-0.39	-0.39
Private nonprofit	30.48	30.48	30.27	0.21	0.21
Private for-profit	6.31	6.31	6.12	0.19	0.19
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	6.55	6.55	6.55	#	#
Mideast	17.71	17.71	17.55	0.16	0.16
Great Lakes	15.98	15.98	16.21	-0.23	-0.23
Plains	7.66	7.66	7.43	0.23	0.23
Southeast	22.72	22.72	22.96	-0.24	-0.24
Southwest	10.27	10.27	9.98	0.29	0.29
Rocky Mountains	4.16	4.16	4.06	0.10	0.10
Far West	14.17	14.17	14.63	-0.46	-0.46
Outlying Areas	0.77	0.77	0.63	0.14	0.14
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–2,907	11.38	11.38	12.24	-0.86*	-0.86*
2,908–10,157	21.28	21.28	21.66	-0.38	-0.38
10,158–27,396	30.97	30.97	31.10	-0.13	-0.13
27,397 or more	36.37	36.37	35.01	1.36*	1.36*
Pell Grant status in 2015–16					
Received	28.96	28.96	32.36	-3.40*	-3.40*
Did not receive	67.19	67.19	64.80	2.39*	2.39*
Not applicable	3.85	3.85	2.84	1.01*	1.01*
Pell Grant amount received in 2015–16 <sup>6</sup>					
None	67.19	67.19	64.80	2.39*	2.39*
\$1–\$2,888	10.00	10.00	11.21	-1.21*	-1.21*
\$2,889–\$5,774	11.63	11.63	12.75	-1.12*	-1.12*
\$5,775 or more	7.33	7.33	8.40	-1.07*	-1.07*
Not applicable	3.85	3.85	2.84	1.01*	1.01*
Direct Loan status in 2015–16					
Received	43.17	43.17	46.67	-3.50*	-3.50*
Did not receive	56.83	56.83	53.33	3.50*	3.50*
Direct Loan amount received in 2015–16 <sup>7</sup>					
None	56.83	56.83	53.33	3.50*	3.50*
\$1–\$4,198	10.27	10.27	10.63	-0.36	-0.36
\$4,199–\$7,500	23.15	23.15	24.89	-1.74*	-1.74*
\$7,501–\$8,297	0.46	0.46	0.54	-0.08*	-0.08
\$8,298 or more	9.29	9.29	10.61	-1.32*	-1.32*
Parent PLUS Loan amount received in 2015–16 <sup>7</sup>					
None	94.26	94.26	93.96	0.30*	0.30*
\$1–\$7,050	1.29	1.29	1.34	-0.05	-0.05
\$7,051–\$12,752	1.42	1.42	1.57	-0.15*	-0.15
\$12,753–\$20,268	1.48	1.50	1.52	-0.04	-0.02
\$20,269 or more	1.55	1.54	1.60	-0.05	-0.06

See notes at end of table.

**Table J-13. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	55.52	55.52	59.66	-4.14*	-4.14*
Did not receive	37.78	37.78	34.58	3.20*	3.20*
Unknown	6.70	6.70	5.75	0.95*	0.95*
Institution aid status in 2015–16					
Received	38.15	38.15	39.80	-1.65*	-1.65*
Did not receive	50.44	50.44	49.28	1.16*	1.16*
Unknown	11.40	11.40	10.92	0.48	0.48
State aid status in 2015–16					
Received	18.80	18.80	20.31	-1.51*	-1.51*
Did not receive	69.80	69.80	68.64	1.16*	1.16*
Unknown	11.40	11.40	11.05	0.35	0.35
Any aid status in 2015–16					
Received	75.53	74.03	79.09	-3.56*	-5.06*
Did not receive	9.61	9.61	9.27	0.34	0.34
Unknown	14.86	16.35	11.65	3.21*	4.70*
Social Security number					
Available	95.34	95.34	97.31	-1.97*	-1.97*
Not available	4.66	4.66	2.69	1.97*	1.97*
Veteran status in 2015–16					
Veteran	4.04	4.04	4.10	-0.06	-0.06
Not a veteran	95.96	95.96	95.90	0.06	0.06
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	0.54	0.54	0.50	0.04	0.04
Asian, not Hispanic or Latino	8.23	8.23	7.74	0.49*	0.49
Black, not Hispanic or Latino	9.59	9.59	10.14	-0.55*	-0.55
Hispanic or Latino, of any race	12.20	12.20	12.35	-0.15	-0.15
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	0.26	0.26	0.29	-0.03	-0.03
White, not Hispanic or Latino	65.03	62.51	64.69	0.34	-2.18*
Two or more races, not Hispanic or Latino	3.13	3.13	3.30	-0.17*	-0.17
Unknown	1.03	3.55	0.99	0.04	2.56*
Sex					
Male	42.58	42.58	42.64	-0.06	-0.06
Female	57.42	57.33	57.36	0.06	-0.03
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	37.15	37.15	33.15	4.00*	4.00*
\$1–\$19,500	20.18	20.18	20.28	-0.10	-0.10
\$19,501–\$29,500	19.19	19.19	20.23	-1.04*	-1.04*
\$29,501–\$45,000	14.97	14.97	16.40	-1.43*	-1.43*
\$45,001 or more	8.52	8.52	9.95	-1.43*	-1.43*

See notes at end of table.

**Table J-13. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	82.21	82.21	81.47	0.74*	0.74*
\$1–\$18,601	4.29	4.29	4.23	0.06	0.06
\$18,602–\$35,806	4.06	4.06	4.19	-0.13	-0.13
\$35,807–\$61,500	4.58	4.58	4.82	-0.24	-0.24
\$61,501 or more	4.85	4.85	5.29	-0.44*	-0.44*
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	33.74	33.74	29.73	4.01*	4.01*
\$1–\$22,500	20.93	20.93	20.93	#	#
\$22,501–\$34,149	18.64	18.64	20.06	-1.42*	-1.42*
\$34,150–\$55,615	13.52	13.52	14.64	-1.12*	-1.12*
\$55,616 or more	13.17	13.17	14.64	-1.47*	-1.47*
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	11.78	11.78	11.93	-0.15	-0.15
1–80	16.63	16.63	17.33	-0.70*	-0.70*
81–105	15.44	15.44	16.32	-0.88*	-0.88*
106–116	12.85	12.85	14.02	-1.17*	-1.17*
117 or more	9.56	9.56	10.67	-1.11*	-1.11*
Not applicable	33.74	33.74	29.73	4.01*	4.01*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	11.78	11.78	11.93	-0.15	-0.15
\$1–\$20,214	17.24	17.24	17.64	-0.40	-0.40
\$20,215–\$37,494	15.03	15.03	16.14	-1.11*	-1.11*
\$37,495–\$63,654	11.13	11.13	12.03	-0.90*	-0.90*
\$63,655 or more	11.10	11.10	12.53	-1.43*	-1.43*
Not applicable	33.74	33.74	29.73	4.01*	4.01*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	10.77	10.67	12.41	-1.64*	-1.74*
Social/Behavioral sciences	13.41	13.44	14.10	-0.69*	-0.66*
Life sciences	11.71	11.74	12.73	-1.02*	-0.99*
Physical sciences/Mathematics	2.53	2.54	2.92	-0.39*	-0.38*
Computer/Information science	3.54	3.55	3.29	0.25	0.26
Engineering	7.03	7.05	6.12	0.91*	0.93*
Education	5.16	5.17	4.37	0.79*	0.80*
Business/Management	18.93	18.98	19.28	-0.35	-0.30
Health	12.16	12.19	11.39	0.77*	0.80*
Vocational/Technical	0.70	0.70	0.68	0.02	0.02
Other technical/professional	13.10	13.13	12.03	1.07*	1.10*
Unknown	0.95	0.84	0.68	0.27*	0.16

See notes at end of table.

**Table J-13. Unit-level mean and difference of means for eligible B&B:16/20 sample members using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	64.78	64.44	64.64	0.14	-0.20
24–29	19.34	19.34	19.45	-0.11	-0.11
30 or older	15.88	15.88	15.91	-0.03	-0.03
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	2.14	2.14	2.20	-0.06	-0.06
No	64.13	64.13	68.07	-3.94*	-3.94*
Not applicable	33.74	33.74	29.73	4.01*	4.01*

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>5</sup> Categories were defined by quartiles computed at the institution level.<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-14. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	3.73	3.88	3.96	-0.23*	-0.08
Mideast	15.14	14.63	14.60	0.54	0.03
Great Lakes	16.49	16.62	16.46	0.03	0.16
Plains	7.34	7.21	7.05	0.29	0.16
Southeast	25.04	25.35	25.49	-0.45	-0.14
Southwest	11.98	11.83	11.73	0.25	0.10
Rocky Mountains	3.70	3.88	3.73	-0.03	0.15
Far West	16.30	16.23	16.70	-0.40	-0.47
Outlying Areas	‡	‡	‡	‡	‡
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–11,413	20.38	19.93	20.51	-0.13	-0.58
11,414–22,020	23.92	23.96	24.41	-0.49	-0.45
22,021–35,263	26.24	27.19	26.61	-0.37	0.58
35,264 or more	29.46	28.92	28.47	0.99	0.45
Pell Grant status in 2015–16					
Received	30.02	29.73	33.00	-2.98*	-3.27*
Did not receive	66.67	67.10	64.42	2.25*	2.68*
Not applicable	3.32	3.17	2.58	0.74*	0.59
Pell Grant amount received 2015–16 <sup>6</sup>					
None	66.67	67.10	64.42	2.25*	2.68*
\$1–\$2,887	9.86	9.89	11.01	-1.15*	-1.12*
\$2,888–\$5,774	12.61	12.45	13.52	-0.91*	-1.07*
\$5,775 or more	7.54	7.39	8.48	-0.94*	-1.09*
Not applicable	3.32	3.17	2.58	0.74*	0.59
Direct Loan status in 2015–16					
Received	41.18	40.57	44.01	-2.83*	-3.44*
Did not receive	58.82	59.43	55.99	2.83*	3.44*
Total Direct Loan amount received 2015–16 <sup>7</sup>					
None	58.82	59.43	55.99	2.83*	3.44*
\$1–\$4,000	10.67	10.62	11.30	-0.63*	-0.68*
\$4,001–\$6,250	9.16	9.15	9.93	-0.77*	-0.78*
\$6,251–\$7,500	11.97	12.02	12.55	-0.58*	-0.53
\$7,501 or more	9.37	8.78	10.24	-0.87*	-1.46*
Parent PLUS Loan amount received 2015–16 <sup>7</sup>					
None	92.01	92.14	92.60	-0.59*	-0.46
\$1–\$6,000	1.20	1.16	1.20	#	-0.04
\$6,001–\$11,326	0.96	1.05	1.07	-0.11*	-0.02
\$11,327–\$16,800	1.14	1.10	1.14	#	-0.04
\$16,801 or more	1.36	1.38	1.41	-0.05	-0.03
Not applicable	3.32	3.17	2.58	0.74*	0.59

See notes at end of table.



**Table J-14. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	53.57	53.06	57.19	-3.62*	-4.13*
Did not receive	38.86	39.79	36.13	2.73*	3.66*
Unknown	7.57	7.15	6.69	0.88*	0.46
Institution aid status in 2015–16					
Received	27.91	27.80	28.83	-0.92*	-1.03*
Did not receive	58.38	59.07	58.03	0.35	1.04
Unknown	13.71	13.13	13.14	0.57*	-0.01
State aid status in 2015–16					
Received	21.14	21.17	22.62	-1.48*	-1.45*
Did not receive	66.05	66.53	65.06	0.99*	1.47*
Unknown	12.81	12.30	12.32	0.49	-0.02
Any aid status in 2015–16					
Received	72.00	70.02	75.25	-3.25*	-5.23*
Did not receive	11.24	11.28	10.99	0.25	0.29
Unknown	16.76	18.69	13.76	3.00*	4.93*
Social Security number					
Available	95.15	95.28	97.17	-2.02*	-1.89*
Not available	4.85	4.72	2.83	2.02*	1.89*
Veteran status in 2015–16					
Veteran	2.82	2.90	3.11	-0.29*	-0.21
Not a veteran	97.18	97.10	96.89	0.29*	0.21
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡
Asian, not Hispanic or Latino	8.69	8.77	8.12	0.57*	0.65
Black, not Hispanic or Latino	8.69	8.57	9.30	-0.61*	-0.73*
Hispanic or Latino, of any race	12.53	12.58	12.61	-0.08	-0.03
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	65.09	62.60	64.74	0.35	-2.14*
Two or more races, not Hispanic or Latino	3.26	3.21	3.38	-0.12	-0.17
Unknown	0.92	3.44	0.92	#	2.52*
Sex					
Male	43.37	43.19	43.73	-0.36	-0.54
Female	56.63	56.68	56.27	0.36	0.41
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	39.30	39.06	35.14	4.16*	3.92*
\$1–\$14,250	13.90	14.75	14.63	-0.73*	0.12
\$14,251–\$25,500	16.42	16.06	16.85	-0.43	-0.79*
\$25,501–\$33,086	15.45	15.56	16.49	-1.04*	-0.93*
\$33,087 or more	14.93	14.57	16.89	-1.96*	-2.32*

See notes at end of table.

**Table J-14. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	82.60	82.75	81.59	1.01*	1.16*
\$1–\$18,985	4.39	4.31	4.34	0.05	-0.03
\$18,986–\$38,246	4.38	4.16	4.60	-0.22	-0.44*
\$38,247–\$68,981	4.00	4.35	4.41	-0.41*	-0.06
\$68,982 or more	4.63	4.42	5.06	-0.43*	-0.64*
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	35.38	35.21	31.19	4.19*	4.02*
\$1–\$17,400	15.46	16.06	16.13	-0.67*	-0.07
\$17,401–\$28,897	17.02	17.04	17.66	-0.64*	-0.62
\$28,898–\$47,422	16.82	16.24	17.93	-1.11*	-1.69*
\$47,423 or more	15.32	15.44	17.10	-1.78*	-1.66*
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	11.33	11.59	11.89	-0.56*	-0.30
1–75	13.83	14.21	14.34	-0.51*	-0.13
76–101	14.36	14.06	15.08	-0.72*	-1.02*
102–113	13.50	13.31	14.67	-1.17*	-1.36*
114 or more	11.61	11.61	12.84	-1.23*	-1.23*
Not applicable	35.38	35.21	31.19	4.19*	4.02*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	11.33	11.59	11.89	-0.56*	-0.30
\$1–\$16,130	12.94	13.43	13.40	-0.46*	0.03
\$16,131–\$29,915	14.38	14.00	15.03	-0.65*	-1.03*
\$29,916–\$55,332	13.12	12.92	14.13	-1.01*	-1.21*
\$55,333 or more	12.85	12.85	14.37	-1.52*	-1.52*
Not applicable	35.38	35.21	31.19	4.19*	4.02*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	9.30	9.44	10.47	-1.17*	-1.03*
Social/Behavioral sciences	13.84	13.68	14.64	-0.80*	-0.96*
Life sciences	12.67	12.59	13.94	-1.27*	-1.35*
Physical sciences/Mathematics	2.28	2.45	2.65	-0.37*	-0.20
Computer/Information science	3.40	3.32	3.08	0.32	0.24
Engineering	8.08	8.43	7.13	0.95*	1.30*
Education	5.72	5.51	4.82	0.90*	0.69*
Business/Management	17.25	17.50	18.04	-0.79*	-0.54
Health	11.09	10.74	10.32	0.77*	0.42
Vocational/Technical	‡	‡	‡	‡	‡
Other technical/professional	14.54	14.50	13.31	1.23*	1.19*
Unknown	0.95	1.01	0.74	0.21*	0.27

See notes at end of table.

**Table J-14. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from public institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	66.65	66.81	65.60	1.05*	1.21*
24–29	21.30	20.91	21.65	-0.35	-0.74
30 or older	12.05	11.84	12.75	-0.70*	-0.91*
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	1.89	1.83	1.91	-0.02	-0.08
No	62.74	62.96	66.90	-4.16*	-3.94*
Not applicable	35.38	35.21	31.19	4.19*	4.02*

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>5</sup> Categories were defined by quartiles computed at the institution level.<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-15. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	13.74	13.38	13.31	0.43	0.07
Mideast	25.12	26.21	25.32	-0.20	0.89
Great Lakes	15.76	15.23	16.01	-0.25	-0.78
Plains	8.16	8.53	8.63	-0.47*	-0.10
Southeast	17.91	17.63	17.77	0.14	-0.14
Southwest	4.12	4.13	3.92	0.20	0.21
Rocky Mountains	4.99	4.71	4.79	0.20	-0.08
Far West	8.36	8.59	8.86	-0.50*	-0.27
Outlying Areas	1.84	1.59	1.38	0.46	0.21
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–2,395	22.01	22.05	22.93	-0.92	-0.88
2,396–4,774	23.46	23.45	24.24	-0.78	-0.79
4,775–11,971	25.35	25.78	25.16	0.19	0.62
11,972 or more	29.18	28.71	27.67	1.51*	1.04
Pell Grant status in 2015–16					
Received	26.81	26.87	29.41	-2.60*	-2.54*
Did not receive	70.03	68.90	68.05	1.98*	0.85
Not applicable	3.16	4.23	2.54	0.62	1.69*
Pell Grant amount received in 2015–16 <sup>6</sup>					
None	70.03	68.90	68.05	1.98*	0.85
\$1–\$2,888	9.17	8.90	9.84	-0.67*	-0.94*
\$2,889–\$5,774	10.57	10.74	11.57	-1.00*	-0.83*
\$5,775 or more	7.07	7.23	8.01	-0.94*	-0.78*
Not applicable	3.16	4.23	2.54	0.62	1.69*
Direct Loan status in 2015–16					
Received	48.20	49.01	51.97	-3.77*	-2.96*
Did not receive	51.80	50.99	48.03	3.77*	2.96*
Total Direct Loan amount received 2015–16 <sup>7</sup>					
None	51.80	50.99	48.03	3.77*	2.96*
\$1–\$5,500	14.33	13.73	14.40	-0.07	-0.67
\$5,501–\$7,500	24.39	24.75	26.59	-2.20*	-1.84*
\$7,501 or more	9.48	10.53	10.98	-1.50*	-0.45
Parent PLUS Loan amount received 2015–16 <sup>7</sup>					
None	88.80	87.73	88.76	0.04	-1.03
\$1–\$9,000	1.95	1.85	2.15	-0.20*	-0.30
\$9,001–\$15,082	2.00	2.00	2.22	-0.22*	-0.22
\$15,083–\$24,196	1.93	2.05	2.07	-0.14*	-0.02
\$24,197 or more	2.17	2.14	2.26	-0.09	-0.12
Not applicable	3.16	4.23	2.54	0.62	1.69*

See notes at end of table.

**Table J-15. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	58.36	58.75	62.53	-4.17*	-3.78*
Did not receive	36.86	35.40	33.33	3.53*	2.07*
Unknown	4.77	5.85	4.15	0.62	1.70*
Institution aid status in 2015–16					
Received	59.29	59.14	62.27	-2.98*	-3.13*
Did not receive	33.97	32.87	31.16	2.81*	1.71*
Unknown	6.74	7.99	6.57	0.17	1.42*
State aid status in 2015–16					
Received	17.04	16.82	18.31	-1.27*	-1.49*
Did not receive	74.43	73.56	73.14	1.29*	0.42
Unknown	8.53	9.62	8.55	-0.02	1.07*
Any aid status in 2015–16					
Received	81.88	80.98	85.48	-3.60*	-4.50*
Did not receive	6.88	6.84	6.33	0.55	0.51
Unknown	11.24	12.18	8.19	3.05*	3.99*
Social Security number					
Available	95.75	95.50	97.58	-1.83*	-2.08*
Not available	4.25	4.50	2.42	1.83*	2.08*
Veteran status in 2015–16					
Veteran	3.59	3.33	3.59	#	-0.26
Not a veteran	96.41	96.67	96.41	#	0.26
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡
Asian, not Hispanic or Latino	7.93	7.60	7.35	0.58	0.25
Black, not Hispanic or Latino	8.41	8.97	9.19	-0.78*	-0.22
Hispanic or Latino, of any race	11.33	10.81	11.13	0.20	-0.32
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	67.69	65.60	67.55	0.14	-1.95*
Two or more races, not Hispanic or Latino	2.97	3.07	3.19	-0.22*	-0.12
Unknown	1.14	3.36	1.12	0.02	2.24*
Sex					
Male	41.79	42.08	41.04	0.75	1.04
Female	58.21	57.92	58.96	-0.75	-1.04
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	35.68	36.09	32.19	3.49*	3.90*
\$1–\$19,299	17.40	16.57	16.78	0.62	-0.21
\$19,300–\$27,000	19.67	19.64	21.12	-1.45*	-1.48*
\$27,001–\$34,656	11.91	11.76	12.51	-0.60	-0.75
\$34,657 or more	15.34	15.95	17.41	-2.07*	-1.46*

See notes at end of table.

**Table J-15. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	82.23	81.66	81.60	0.63	0.06
\$1–\$20,000	4.54	4.50	4.31	0.23	0.19
\$20,001–\$37,659	4.35	4.76	4.50	-0.15	0.26
\$37,660–\$70,167	4.52	4.60	5.06	-0.54*	-0.46
\$70,168 or more	4.36	4.47	4.52	-0.16	-0.05
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	32.80	33.10	29.36	3.44*	3.74*
\$1–\$21,500	19.11	17.94	18.26	0.85	-0.32
\$21,501–\$30,000	17.17	16.89	18.57	-1.40*	-1.68*
\$30,001–\$49,651	15.25	16.02	16.65	-1.40*	-0.63
\$49,652 or more	15.66	16.05	17.17	-1.51*	-1.12*
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	13.30	12.72	12.80	0.50	-0.08
1–74	14.20	13.82	15.08	-0.88*	-1.26*
75–99	13.70	13.78	14.44	-0.74*	-0.66
100–112	13.78	13.69	14.50	-0.72*	-0.81
113 or more	12.22	12.89	13.82	-1.60*	-0.93
Not applicable	32.80	33.10	29.36	3.44*	3.74*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	13.30	12.72	12.80	0.50	-0.08
\$1–\$18,636	14.10	13.55	14.66	-0.56*	-1.11*
\$18,637–\$30,377	13.43	13.87	14.31	-0.88*	-0.44
\$30,378–\$57,552	13.59	13.60	14.96	-1.37*	-1.36*
\$57,553 or more	12.78	13.17	13.92	-1.14*	-0.75
Not applicable	32.80	33.10	29.36	3.44*	3.74*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	14.22	13.63	16.36	-2.14*	-2.73*
Social/Behavioral sciences	14.33	14.91	14.84	-0.51*	0.07
Life sciences	11.31	11.51	12.10	-0.79*	-0.59*
Physical sciences/Mathematics	3.52	3.23	4.04	-0.52*	-0.81*
Computer/Information science	2.95	3.03	2.71	0.24	0.32
Engineering	5.53	4.98	4.71	0.82*	0.27
Education	4.42	4.90	3.63	0.79*	1.27*
Business/Management	20.46	20.15	20.45	0.01	-0.30
Health	11.62	12.18	10.94	0.68*	1.24*
Vocational/Technical	‡	‡	‡	‡	‡
Other technical/professional	10.33	10.42	9.25	1.08*	1.17*
Unknown	‡	‡	‡	‡	‡

See notes at end of table.

**Table J-15. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private nonprofit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	72.00	70.42	72.77	-0.77	-2.35*
24–29	13.82	14.78	13.46	0.36	1.32*
30 or older	14.19	14.60	13.77	0.42	0.83
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	2.03	2.23	2.17	-0.14	0.06
No	65.17	64.68	68.48	-3.31*	-3.80*
Not applicable	32.80	33.10	29.36	3.44*	3.74*

# Rounds to zero.

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.<sup>5</sup> Categories were defined by quartiles computed at the institution level.<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor's degree. "Base weight" refers to the B&amp;B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table J-16. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Region of baccalaureate-granting institution <sup>3,4</sup>					
New England	‡	‡	‡	‡	‡
Mideast	7.71	7.55	9.85	-2.14	-2.30
Great Lakes	11.95	13.18	14.59	-2.64	-1.41
Plains	8.55	8.05	5.40	3.15	2.65
Southeast	22.70	20.98	22.26	0.44	-1.28
Southwest	22.85	24.28	21.74	1.11	2.54
Rocky Mountains	4.72	4.28	3.79	0.93	0.49
Far West	20.98	20.56	21.72	-0.74	-1.16
Outlying Areas	0.46	0.80	0.51	-0.05	0.29
Total enrollment of baccalaureate-granting institution <sup>3,5</sup>					
1–1,384	11.47	12.25	16.52	-5.05*	-4.27*
1,385–3,213	12.05	11.81	16.76	-4.71*	-4.95*
3,214–16,103	14.15	14.14	18.29	-4.14*	-4.15*
16,104 or more	62.33	61.79	48.43	13.90*	13.36*
Pell Grant status in 2015–16					
Received	28.78	31.38	40.21	-11.43*	-8.83*
Did not receive	58.68	59.83	52.75	5.93*	7.08*
Not applicable	12.54	8.79	7.04	5.50	1.75
Pell Grant amount received in 2015–16 <sup>6</sup>					
None	58.68	59.83	52.75	5.93*	7.08*
\$1–\$2,887	10.62	11.62	14.53	-3.91*	-2.91*
\$2,888–\$5,774	11.73	12.54	16.10	-4.37*	-3.56*
\$5,775 or more	6.43	7.22	9.58	-3.15*	-2.36*
Not applicable	12.54	8.79	7.04	5.50	1.75
Direct Loan status in 2015–16					
Received	38.86	41.01	48.02	-9.16*	-7.01*
Did not receive	61.14	58.99	51.98	9.16*	7.01*
Total Direct Loan amount received 2015–16 <sup>7</sup>					
None	61.14	58.99	51.98	9.16*	7.01*
\$1–\$3,666	10.58	11.26	10.07	0.51	1.19
\$3,667–\$6,251	9.99	10.39	11.82	-1.83	-1.43
\$6,252–\$10,937	8.85	9.71	12.57	-3.72*	-2.86*
\$10,938 or more	9.44	9.65	13.57	-4.13*	-3.92*
Parent PLUS Loan amount received 2015–16 <sup>7</sup>					
None	85.63	89.46	90.26	-4.63	-0.80
\$1–\$5,682	‡	‡	‡	‡	‡
\$5,683–\$10,241	‡	‡	‡	‡	‡
\$10,242–\$18,258	‡	‡	‡	‡	‡
\$18,259 or more	‡	‡	‡	‡	‡
Not applicable	12.54	8.79	7.04	5.50	1.75

See notes at end of table.



**Table J-16. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Federal aid status in 2015–16					
Received	61.32	64.55	71.18	-9.86*	-6.63*
Did not receive	31.46	29.13	24.79	6.67*	4.34*
Unknown	7.22	6.32	4.02	3.20	2.30
Institution aid status in 2015–16					
Received	38.67	40.44	42.70	-4.03	-2.26
Did not receive	50.53	48.94	47.85	2.68	1.09
Unknown	10.81	10.62	9.45	1.36	1.17
State aid status in 2015–16					
Received	3.85	4.55	6.26	-2.41*	-1.71*
Did not receive	84.94	84.37	83.50	1.44	0.87
Unknown	11.20	11.09	10.24	0.96	0.85
Any aid status in 2015–16					
Received	80.21	80.62	87.36	-7.15*	-6.74*
Did not receive	6.54	6.32	5.89	0.65	0.43
Unknown	13.25	13.06	6.75	6.50*	6.31*
Social Security number					
Available	95.20	95.12	97.52	-2.32	-2.40
Not available	4.80	4.88	2.48	2.32	2.40
Veteran status in 2015–16					
Veteran	18.36	18.79	17.00	1.36	1.79
Not a veteran	81.64	81.21	83.00	-1.36	-1.79
Race/ethnicity					
American Indian or Alaska Native, not Hispanic or Latino	‡	‡	‡	‡	‡
Asian, not Hispanic or Latino	4.99	5.81	5.66	-0.67	0.15
Black, not Hispanic or Latino	24.36	22.92	23.50	0.86	-0.58
Hispanic or Latino, of any race	13.05	15.06	15.69	-2.64*	-0.63
Native Hawaiian or Other Pacific Islander, not Hispanic or Latino	‡	‡	‡	‡	‡
White, not Hispanic or Latino	51.65	46.65	50.08	1.57	-3.43*
Two or more races, not Hispanic or Latino	2.50	2.57	3.02	-0.52	-0.45
Unknown	‡	‡	‡	‡	‡
Sex					
Male	38.51	38.92	39.35	-0.84	-0.43
Female	61.49	60.98	60.65	0.84	0.33
Unknown	‡	‡	‡	‡	‡
Cumulative amount borrowed in federal student loans for undergraduate education, 4 years after BA completion <sup>7</sup>					
None	22.58	23.04	17.15	5.43*	5.89*
\$1–\$29,729	27.65	26.90	21.99	5.66*	4.91*
\$29,730–\$44,456	16.74	18.77	19.23	-2.49	-0.46
\$44,457–\$55,841	14.98	15.24	19.57	-4.59*	-4.33*
\$55,842 or more	18.06	16.05	22.06	-4.00*	-6.01*

See notes at end of table.

**Table J-16. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Cumulative amount borrowed in federal student loans for graduate education, 4 years after BA completion <sup>7</sup>					
None	78.27	79.50	79.63	-1.36	-0.13
\$1–\$17,002	3.86	4.31	4.37	-0.51	-0.06
\$17,003–\$32,395	4.24	4.69	4.53	-0.29	0.16
\$32,396–\$47,799	6.14	4.73	5.52	0.62	-0.79*
\$47,800 or more	7.49	6.77	5.95	1.54	0.82
Cumulative amount borrowed in federal student loans, 4 years after BA completion <sup>7</sup>					
None	21.81	22.00	16.41	5.40*	5.59*
\$1–\$31,000	23.61	24.10	21.33	2.28	2.77
\$31,001–\$48,000	17.70	18.40	20.13	-2.43	-1.73
\$48,001–\$57,500	13.86	14.79	18.38	-4.52*	-3.59*
\$57,501 or more	23.02	20.71	23.75	-0.73	-3.04
Amount owed on federal student loans as percent of federal student loan amount borrowed, 4 years after BA completion <sup>7</sup>					
None	8.88	9.07	8.05	0.83	1.02
1–94	17.01	18.32	18.17	-1.16	0.15
95–112	17.46	18.09	18.10	-0.64	-0.01
113–122	19.05	16.60	20.79	-1.74	-4.19*
123 or more	15.79	15.92	18.47	-2.68*	-2.55*
Not applicable	21.81	22.00	16.41	5.40*	5.59*
Amount owed on federal student loans in principal, 4 years after BA completion <sup>7</sup>					
None	8.88	9.07	8.05	0.83	1.02
\$1–\$31,859	17.87	19.12	18.25	-0.38	0.87
\$31,860–\$52,720	16.98	17.05	18.54	-1.56	-1.49
\$52,721–\$67,828	16.05	16.06	17.02	-0.97	-0.96
\$67,829 or more	18.41	16.70	21.72	-3.31*	-5.02*
Not applicable	21.81	22.00	16.41	5.40*	5.59*
Baccalaureate major					
Undecided	‡	‡	‡	‡	‡
Humanities	8.62	8.70	13.13	-4.51*	-4.43*
Social/Behavioral sciences	3.69	3.43	4.40	-0.71	-0.97
Life sciences	3.15	3.78	2.76	0.39	1.02
Physical sciences/Mathematics	‡	‡	‡	‡	‡
Computer/Information science	8.24	8.62	8.58	-0.34	0.04
Engineering	3.43	2.84	2.39	1.04	0.45
Education	2.99	2.94	3.34	-0.35	-0.40
Business/Management	29.35	28.69	26.74	2.61	1.95
Health	26.89	27.60	25.45	1.44	2.15
Vocational/Technical	‡	‡	‡	‡	‡
Other technical/professional	12.05	12.42	12.39	-0.34	0.03
Unknown	‡	‡	‡	‡	‡

See notes at end of table.

**Table J-16. Unit-level mean and difference of means for eligible B&B:16/20 sample members sampled from private for-profit institutions using weight C (B&B:16/20 and B&B:16/17 respondents), by weight adjustment and selected variables: 2020—Continued**

Selected variables	Unit-level mean <sup>1</sup>			Difference <sup>2</sup>	
	Respondents, adjusted for nonresponse (1)	Eligible sample (2)	Respondents, adjusted for nonresponse and poststratification (3)	Mean (1) - Mean (3)	Mean (2) - Mean (3)
Age as of December 31, 2015					
15–23	11.19	11.82	14.40	-3.21*	-2.58*
24–29	26.48	25.69	26.15	0.33	-0.46
30 or older	62.34	62.44	59.45	2.89	2.99
Unknown	‡	‡	‡	‡	‡
Federal loan default status, 4 years after BA completion					
Yes	5.15	4.79	5.40	-0.25	-0.61
No	73.04	73.21	78.18	-5.14*	-4.97*
Not applicable	21.81	22.00	16.41	5.40*	5.59*

‡ Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ .

<sup>1</sup> Means are calculated using the B&B:16/20 base weight with additional adjustments for the analysis weight WTB000 by column as specified in the column header.

<sup>2</sup> The first column represents the difference between respondent mean adjusted for nonresponse and adjusted for nonresponse and poststratification; the second column represents the difference between the eligible sample mean and the respondent mean adjusted for nonresponse and poststratification.

<sup>3</sup> Refers to the sampled, baccalaureate-granting institution identified in the base year.

<sup>4</sup> New England = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; Mideast = Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania; Great Lakes = Illinois, Indiana, Michigan, Ohio, Wisconsin; Plains = Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; Southeast = Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia; Southwest = Arizona, New Mexico, Oklahoma, Texas; Rocky Mountains = Colorado, Idaho, Montana, Utah, Wyoming; Far West = Alaska, California, Hawaii, Nevada, Oregon, Washington; Outlying Areas = Puerto Rico.

<sup>5</sup> Categories were defined by quartiles computed at the institution level.

<sup>6</sup> In the 2015–16 academic year, the maximum Pell Grant award allowed was \$5,775. Pell Grant categories were divided into those who did not receive Pell Grants and those who received the maximum allowance. Then, those receiving less than \$5,775 were divided into two categories based on the median award amount, \$2,888.

<sup>7</sup> Categories were defined by quartiles.

NOTE: BA = bachelor’s degree. “Base weight” refers to the B&B:16/20 base weight.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2ALLHRS4YRS (Hours worked per week in all current jobs, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.59	1.71	1.70	1.81
Median percent relative bias across characteristics <sup>2</sup>	0.90	1.15	1.10	1.45
Percentage of characteristics with significant bias	64.49	56.86	52.00	22.92
Median effect size <sup>3</sup>	0.10	0.10	0.10	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.23*	0.12	0.44*	0.34
Effect size for difference <sup>5</sup>	0.01	#	0.02	0.01
<b>B2ALLINC4YRS (Annualized total pay for all current jobs, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.59	1.68	1.74	1.83
Median percent relative bias across characteristics <sup>2</sup>	0.89	1.10	1.14	1.47
Percentage of characteristics with significant bias	62.62	56.31	51.00	21.88
Median effect size <sup>3</sup>	0.10	0.10	0.10	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.46	0.39	0.81	0.37
Effect size for difference <sup>5</sup>	0.01	0.01	0.01	#
<b>B2APPLY (Ever applied for a Pre-K through 12th grade teaching position, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.57	1.73	1.71	1.93
Median percent relative bias across characteristics <sup>2</sup>	0.96	1.00	1.21	1.23
Percentage of characteristics with significant bias	65.42	60.78	56.44	28.42
Median effect size <sup>3</sup>	0.09	0.10	0.10	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.61*	3.00*	2.65*	1.97*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2ARTTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach arts/music)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.12	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.21	3.18	4.90	7.32
Percentage of characteristics with significant bias	56.60	48.51	52.53	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.31	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.65*	3.95*	2.97*	2.54
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2BORAMT3 (Cumulative amount borrowed for undergraduate and graduate education, as of 2020)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.43	1.53	1.77	1.71
Median percent relative bias across characteristics <sup>2</sup>	0.75	0.94	1.66	1.09
Percentage of characteristics with significant bias	53.27	54.37	56.44	17.53
Median effect size <sup>3</sup>	0.08	0.08	0.10	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	10.16*	10.26*	10.26*	9.27*
Effect size for difference <sup>5</sup>	0.08	0.08	0.08	0.11

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2CLICENSE (Ever had professional certification or state or industry license, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.59	1.68	1.74	1.97
Median percent relative bias across characteristics <sup>2</sup>	0.98	1.17	1.23	1.36
Percentage of characteristics with significant bias	70.09	59.80	58.00	23.96
Median effect size <sup>3</sup>	0.09	0.09	0.10	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	7.58*	8.15*	7.12*	4.32*
Effect size for difference <sup>5</sup>	0.08	0.08	0.07	0.04
<b>B2CONTEMP (Contributed to employer-based retirement account in past 12 months, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.66	1.75	1.83	1.81
Median percent relative bias across characteristics <sup>2</sup>	0.92	1.00	1.47	1.39
Percentage of characteristics with significant bias	56.07	50.98	47.00	20.83
Median effect size <sup>3</sup>	0.09	0.10	0.09	0.09
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.27*	1.45*	1.18	0.33
Effect size for difference <sup>5</sup>	0.02	0.02	0.02	#
<b>B2CONTNON (Contributed to non-employer-based retirement account in past 12 months, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.98	2.04	2.25	2.75
Median percent relative bias across characteristics <sup>2</sup>	1.41	1.33	1.66	1.85
Percentage of characteristics with significant bias	50.47	38.24	38.00	16.67
Median effect size <sup>3</sup>	0.11	0.09	0.14	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.44*	3.45*	1.43	5.01*
Effect size for difference <sup>5</sup>	0.03	0.04	0.02	0.05
<b>B2CONTRET (Contributed to retirement account in past 12 months, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.57	1.65	1.72	1.68
Median percent relative bias across characteristics <sup>2</sup>	0.98	0.95	1.43	1.20
Percentage of characteristics with significant bias	57.01	48.04	50.00	21.88
Median effect size <sup>3</sup>	0.08	0.09	0.10	0.08
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.79*	2.63*	2.99*	2.89*
Effect size for difference <sup>5</sup>	0.04	0.04	0.04	0.04
<b>B2CRTELEM (Certification level, 4 years after BA completion: Pre-K through 5th grade)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.46	6.47	7.81	11.88
Median percent relative bias across characteristics <sup>2</sup>	4.63	4.82	5.75	9.32
Percentage of characteristics with significant bias	64.15	51.00	55.10	37.78
Median effect size <sup>3</sup>	0.28	0.28	0.34	0.57
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.95	2.18	9.80*	‡
Effect size for difference <sup>5</sup>	0.01	0.02	0.10	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2CRTHIGH (Certification level, 4 years after BA completion: 9th through 12th grade)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.46	6.47	7.81	11.88
Median percent relative bias across characteristics <sup>2</sup>	4.63	4.82	5.75	9.32
Percentage of characteristics with significant bias	64.15	51.00	55.10	37.78
Median effect size <sup>3</sup>	0.28	0.28	0.34	0.57
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.20	0.21	4.64	‡
Effect size for difference <sup>5</sup>	0.01	#	0.05	‡
<b>B2CRTMID (Certification level, 4 years after BA completion: 6th through 8th grade)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.46	6.47	7.81	11.88
Median percent relative bias across characteristics <sup>2</sup>	4.63	4.82	5.75	9.32
Percentage of characteristics with significant bias	64.15	51.00	55.10	37.78
Median effect size <sup>3</sup>	0.28	0.28	0.34	0.57
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.40	1.83	0.81	‡
Effect size for difference <sup>5</sup>	0.01	0.02	0.01	‡
<b>B2CRTPREK (Certification level, 4 years after BA completion: Early childhood education [preK])</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.46	6.47	7.81	11.88
Median percent relative bias across characteristics <sup>2</sup>	4.63	4.82	5.75	9.32
Percentage of characteristics with significant bias	64.15	51.00	55.10	37.78
Median effect size <sup>3</sup>	0.28	0.28	0.34	0.57
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.47	2.45	1.14	‡
Effect size for difference <sup>5</sup>	0.02	0.03	0.01	‡
<b>B2CSTDYCR (Monthly child care costs, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.95	5.48	5.48	5.12
Median percent relative bias across characteristics <sup>2</sup>	3.04	3.58	4.30	3.36
Percentage of characteristics with significant bias	66.36	61.39	53.00	40.00
Median effect size <sup>3</sup>	0.32	0.34	0.29	0.28
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.85	2.99*	1.60	1.38
Effect size for difference <sup>5</sup>	0.01	0.02	0.01	0.01
<b>B2CURCRT (Certified to teach, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.08	6.18	7.05	10.47
Median percent relative bias across characteristics <sup>2</sup>	4.27	4.53	4.94	7.88
Percentage of characteristics with significant bias	63.21	50.00	48.98	40.22
Median effect size <sup>3</sup>	0.27	0.27	0.31	0.48
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	92.52*	89.91*	96.51*	108.68*
Effect size for difference <sup>5</sup>	0.90	0.88	0.88	1.02

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2CURREGTCH (Currently working as a regular classroom teacher, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.63	5.99	6.29	10.07
Median percent relative bias across characteristics <sup>2</sup>	3.77	4.28	3.69	7.14
Percentage of characteristics with significant bias	55.66	48.00	50.51	35.87
Median effect size <sup>3</sup>	0.24	0.24	0.29	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	15.27*	14.35*	18.50*	6.48
Effect size for difference <sup>5</sup>	0.23	0.23	0.27	0.09
<b>B2EETCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach elementary education)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	37.92*	32.84*	41.84*	24.36*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2ENGCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach English/language arts)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	25.45*	19.73*	16.20*	5.01
Effect size for difference <sup>5</sup>	0.39	‡	‡	‡
<b>B2EPREPALT (Prepared to teach through an alternative entry program, as of the B&amp;B:16/20 survey)</b>				
Before imputation				
Mean percent relative bias across characteristics	1.45	1.64	1.46	1.75
Median percent relative bias across characteristics	0.83	1.01	1.01	1.53
Percentage of characteristics with significant bias	61.68	57.28	43.56	14.43
Median effect size	0.08	0.09	0.08	0.11
After imputation				
Difference between pre- and postimputation means <sup>1</sup>	1.62*	1.72*	1.62*	1.33*
Effect size for difference <sup>2</sup>	0.05	0.05	0.05	0.04
<b>B2EPREPCOL (Prepared to teach at a college or university that provides certification, as of the B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.47	1.64	1.58	1.81
Median percent relative bias across characteristics <sup>2</sup>	0.77	0.92	1.09	1.29
Percentage of characteristics with significant bias	60.75	58.82	53.47	24.21
Median effect size <sup>3</sup>	0.08	0.10	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.74	1.10	0.31	0.43
Effect size for difference <sup>5</sup>	0.01	0.01	#	0.01

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2EPREPCOMP (Prepared to teach through a student teaching assignment, as of the B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.61	1.75	1.74	1.93
Median percent relative bias across characteristics <sup>2</sup>	0.93	0.90	1.26	1.43
Percentage of characteristics with significant bias	63.55	55.88	56.44	26.32
Median effect size <sup>3</sup>	0.09	0.10	0.10	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.18	0.12	0.34	0.29
Effect size for difference <sup>5</sup>	#	#	#	0.01
<b>B2EPREPNL (Prepared to teach through an online-only certification program, as of the B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.44	1.64	1.44	1.81
Median percent relative bias across characteristics <sup>2</sup>	0.82	1.10	0.97	1.54
Percentage of characteristics with significant bias	60.75	57.28	42.57	15.63
Median effect size <sup>3</sup>	0.08	0.09	0.08	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.86*	1.82*	2.12*	1.09
Effect size for difference <sup>5</sup>	0.05	0.04	0.06	0.03
<b>B2ESLTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach ESL)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.12	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.21	3.18	4.90	7.32
Percentage of characteristics with significant bias	56.60	48.51	52.53	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.31	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.41*	1.24	1.94	#
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2ESTCLG (Length of student teaching)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.02	5.54	5.47	12.65
Median percent relative bias across characteristics <sup>2</sup>	3.29	3.27	4.04	9.06
Percentage of characteristics with significant bias	56.07	51.49	40.00	51.61
Median effect size <sup>3</sup>	0.21	0.23	0.25	0.60
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.27*	3.19*	1.00	7.79*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2EVERLK (Ever looked for work within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.54	1.67	1.67	1.93
Median percent relative bias across characteristics <sup>2</sup>	0.94	0.93	1.13	1.38
Percentage of characteristics with significant bias	62.62	57.84	56.44	24.21
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.45*	1.63*	0.91	2.28*
Effect size for difference <sup>5</sup>	0.02	0.02	0.01	0.03

See notes at end of table.



**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2EVRASST (Ever used assistantships or fellowships for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.09	3.45	2.85	5.80
Median percent relative bias across characteristics <sup>2</sup>	1.94	1.85	1.84	4.65
Percentage of characteristics with significant bias	57.94	53.92	52.00	27.66
Median effect size <sup>3</sup>	0.12	0.14	0.12	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	5.63*	4.83*	8.84*	4.05
Effect size for difference <sup>5</sup>	0.08	0.06	0.11	0.08
<b>B2EVRDEF (Ever defaulted on student loans, as of 2020)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.49	4.84	4.80	3.66
Median percent relative bias across characteristics <sup>2</sup>	2.06	2.61	2.53	2.59
Percentage of characteristics with significant bias	70.09	69.90	60.40	28.42
Median effect size <sup>3</sup>	0.19	0.28	0.20	0.19
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.02	0.46	0.80	0.44
Effect size for difference <sup>5</sup>	#	0.01	0.02	0.01
<b>B2EVREMPAID (Ever used employer assistance for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.18	3.54	3.03	5.65
Median percent relative bias across characteristics <sup>2</sup>	2.11	2.17	1.74	4.28
Percentage of characteristics with significant bias	59.81	54.90	50.00	27.66
Median effect size <sup>3</sup>	0.14	0.15	0.14	0.24
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.95*	4.21*	3.96*	1.30
Effect size for difference <sup>5</sup>	0.05	0.06	0.05	0.02
<b>B2EVRGIFT (Ever used personal loan or gift for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.06	3.40	2.94	5.76
Median percent relative bias across characteristics <sup>2</sup>	1.96	2.11	1.65	4.55
Percentage of characteristics with significant bias	57.01	57.84	53.00	28.72
Median effect size <sup>3</sup>	0.12	0.14	0.11	0.25
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.09*	2.46	4.62*	0.31
Effect size for difference <sup>5</sup>	0.05	0.03	0.06	0.01
<b>B2EVRGRANT (Ever used grants or scholarships for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.40	3.79	3.15	5.95
Median percent relative bias across characteristics <sup>2</sup>	1.94	2.30	2.16	4.54
Percentage of characteristics with significant bias	61.68	55.88	54.00	31.58
Median effect size <sup>3</sup>	0.14	0.16	0.14	0.25
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.09	2.36	0.96	8.55*
Effect size for difference <sup>5</sup>	0.02	0.02	0.01	0.09

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2EVROTHAID (Ever used other financial aid for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.10	3.49	2.94	5.46
Median percent relative bias across characteristics <sup>2</sup>	2.25	2.30	1.78	3.98
Percentage of characteristics with significant bias	55.14	54.90	49.00	22.34
Median effect size <sup>3</sup>	0.12	0.14	0.11	0.24
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.28	0.20	0.35	1.82
Effect size for difference <sup>5</sup>	#	#	0.01	0.02
<b>B2EVROTHLN (Ever used other student loans for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.26	3.51	3.20	5.88
Median percent relative bias across characteristics <sup>2</sup>	1.79	2.18	2.00	4.77
Percentage of characteristics with significant bias	61.68	64.71	50.00	34.74
Median effect size <sup>3</sup>	0.12	0.14	0.14	0.23
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.28	0.34	#	1.37
Effect size for difference <sup>5</sup>	0.01	0.01	#	0.03
<b>B2EVRPOCKET (Ever used own money for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.04	3.28	2.99	5.56
Median percent relative bias across characteristics <sup>2</sup>	1.53	1.72	1.53	4.43
Percentage of characteristics with significant bias	62.62	55.88	51.00	28.72
Median effect size <sup>3</sup>	0.12	0.13	0.13	0.25
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.22	1.86	0.39	5.63
Effect size for difference <sup>5</sup>	0.01	0.02	#	0.06
<b>B2EVRPRIVDEF (Ever defaulted on private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.40	6.09	7.30	6.92
Median percent relative bias across characteristics <sup>2</sup>	3.18	2.75	3.23	5.37
Percentage of characteristics with significant bias	64.49	48.54	54.46	42.55
Median effect size <sup>3</sup>	0.29	0.30	0.36	0.35
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.69	0.27	1.36	1.46
Effect size for difference <sup>5</sup>	0.01	0.01	‡	0.02
<b>B2EVRPRIVPIF (Ever paid off a private student loan, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.33	6.00	7.28	6.70
Median percent relative bias across characteristics <sup>2</sup>	2.98	2.66	3.14	4.94
Percentage of characteristics with significant bias	66.36	48.54	54.46	44.21
Median effect size <sup>3</sup>	0.29	0.30	0.37	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.60	1.19	5.38*	0.46
Effect size for difference <sup>5</sup>	0.03	0.01	0.07	0.01

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2EVRREGTCH (Worked as a regular classroom teacher, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.42	1.58	1.51	1.89
Median percent relative bias across characteristics <sup>2</sup>	0.81	0.87	1.15	1.34
Percentage of characteristics with significant bias	55.14	51.46	45.54	21.05
Median effect size <sup>3</sup>	0.08	0.10	0.08	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	24.99*	27.90*	27.54*	11.94*
Effect size for difference <sup>5</sup>	0.31	0.32	0.32	0.20
<b>B2EVRTCH (Ever taught at Pre-K through 12th grade level, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.55	1.68	1.70	1.94
Median percent relative bias across characteristics <sup>2</sup>	0.95	0.91	1.15	1.34
Percentage of characteristics with significant bias	66.36	57.84	57.43	25.26
Median effect size <sup>3</sup>	0.09	0.10	0.09	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.76*	2.19*	1.25	1.02
Effect size for difference <sup>5</sup>	0.02	0.02	0.01	0.01
<b>B2EVRWRKSDY (Ever had work-study for post-BA degree, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.64	3.17	5.82
Median percent relative bias across characteristics <sup>2</sup>	2.05	2.18	2.00	4.45
Percentage of characteristics with significant bias	57.94	57.84	50.00	28.72
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.25
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.12	0.19	0.22	1.56*
Effect size for difference <sup>5</sup>	#	‡	#	‡
<b>B2FAMLNHLP (Family or friends helping to repay loans, within the 12 months before the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.78	5.16	5.17	4.21
Median percent relative bias across characteristics <sup>2</sup>	2.32	2.88	2.46	3.10
Percentage of characteristics with significant bias	73.83	73.79	77.00	45.26
Median effect size <sup>3</sup>	0.21	0.32	0.22	0.19
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.63*	0.71	0.79	0.63
Effect size for difference <sup>5</sup>	0.01	0.01	0.02	‡
<b>B2FEDPAY (Current monthly payment on federal student loans, 4 years after bachelor's degree)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.35	6.25	5.79	3.53
Median percent relative bias across characteristics <sup>2</sup>	2.55	3.52	3.48	2.22
Percentage of characteristics with significant bias	62.38	53.68	51.61	30.34
Median effect size <sup>3</sup>	0.25	0.28	0.25	0.13
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	5.66*	5.45*	4.59	6.34*
Effect size for difference <sup>5</sup>	0.06	0.06	0.06	0.06

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2FEDPAYMISS (Missed payment on a federal student loan in 12 months before the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.60	6.58	5.90	3.66
Median percent relative bias across characteristics <sup>2</sup>	2.59	3.69	2.90	2.37
Percentage of characteristics with significant bias	63.37	60.00	48.39	30.34
Median effect size <sup>3</sup>	0.27	0.32	0.26	0.15
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.91	0.84	0.33	0.93
Effect size for difference <sup>5</sup>	0.02	‡	‡	‡
<b>B2FEDPAYMORE (Made prepayment on federal student loan in 12 months before the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.50	6.48	5.67	3.81
Median percent relative bias across characteristics <sup>2</sup>	2.34	3.11	3.18	2.09
Percentage of characteristics with significant bias	67.33	57.89	46.24	26.97
Median effect size <sup>3</sup>	0.27	0.31	0.25	0.13
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.60	1.43	1.39	1.66
Effect size for difference <sup>5</sup>	0.02	0.01	‡	0.02
<b>B2FLTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach foreign languages)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.12	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.21	3.18	4.90	7.32
Percentage of characteristics with significant bias	56.60	48.51	52.53	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.31	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.19*	0.79	2.40	0.06
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2FRPLRCNT (Most recent school, 4 years after BA completion: Percent free or reduced-price lunch eligible)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.59	5.91	6.68	12.47
Median percent relative bias across characteristics <sup>2</sup>	3.69	4.00	4.37	9.84
Percentage of characteristics with significant bias	45.63	40.40	24.21	27.59
Median effect size <sup>3</sup>	0.24	0.25	0.31	0.52
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.31	0.08	5.03	0.13
Effect size for difference <sup>5</sup>	0.02	#	0.07	#
<b>B2GMAT (Took GMAT, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.55	1.70	1.64	1.93
Median percent relative bias across characteristics <sup>2</sup>	0.87	0.95	1.06	1.51
Percentage of characteristics with significant bias	62.62	58.82	49.50	27.37
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.15	0.04	0.39*	0.01
Effect size for difference <sup>5</sup>	0.01	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2GRDEXM (Took a graduate or professional entrance exam, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.53	1.66	1.64	1.97
Median percent relative bias across characteristics <sup>2</sup>	0.86	0.92	1.10	1.61
Percentage of characteristics with significant bias	63.55	58.82	53.47	26.32
Median effect size <sup>3</sup>	0.08	0.09	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.00*	2.24*	2.46*	1.55*
Effect size for difference <sup>5</sup>	0.02	0.03	0.03	0.03
<b>B2GRE (Took GRE, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.53	1.66	1.67	1.89
Median percent relative bias across characteristics <sup>2</sup>	0.83	0.93	1.09	1.47
Percentage of characteristics with significant bias	63.55	59.80	50.50	29.47
Median effect size <sup>3</sup>	0.08	0.09	0.09	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.80*	1.02	1.03	2.05*
Effect size for difference <sup>5</sup>	0.01	0.01	0.01	0.07
<b>B2HIDGASST (Highest degree enrollment, within 4 years of BA completion: had assistantships or fellowships)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.11	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.79	2.11	1.75	4.42
Percentage of characteristics with significant bias	68.22	60.40	53.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.68	1.15	0.06	1.71*
Effect size for difference <sup>5</sup>	0.01	0.02	#	‡
<b>B2HIDGEMPAID (Highest degree enrollment, within 4 years of BA completion: used employer assistance)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.13	5.86
Median percent relative bias across characteristics <sup>2</sup>	1.81	2.11	1.78	4.52
Percentage of characteristics with significant bias	68.22	60.40	54.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.14	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.69	0.61	0.90	0.70
Effect size for difference <sup>5</sup>	0.01	0.01	0.01	0.01
<b>B2HIDGGIFT (Highest degree enrollment, within 4 years of BA completion: used personal loan or gift)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.12	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.80	2.11	1.76	4.42
Percentage of characteristics with significant bias	68.22	60.40	53.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.28*	0.80	1.46*	0.21
Effect size for difference <sup>5</sup>	0.02	0.01	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Overall	Control of baccalaureate-granting institution		
		Public	Private nonprofit	Private for-profit
<b>B2HIDGGRANT (Highest degree enrollment, within 4 years of BA completion: used grants or scholarships)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.32	3.65	3.12	5.86
Median percent relative bias across characteristics <sup>2</sup>	1.80	2.10	1.79	4.54
Percentage of characteristics with significant bias	68.22	60.40	53.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.49*	3.59*	0.53	2.00
Effect size for difference <sup>5</sup>	0.03	0.04	0.01	0.02
<b>B2HIDGONLIN (Highest degree enrollment, within 4 years of BA completion: took online courses)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.32	3.65	3.11	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.93	2.19	1.83	4.56
Percentage of characteristics with significant bias	68.22	63.37	52.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.83*	4.10*	3.59*	7.28*
Effect size for difference <sup>5</sup>	0.04	0.04	0.04	0.09
<b>B2HIDGOTHAID (Highest degree enrollment, within 4 years of BA completion: used other financial aid type)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.12	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.83	2.15	1.80	4.44
Percentage of characteristics with significant bias	68.22	60.40	54.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.44	0.24	0.11	2.57
Effect size for difference <sup>5</sup>	0.01	#	‡	0.04
<b>B2HIDGOTHLN (Highest degree enrollment, within 4 years of BA completion: used other student loans)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.28	3.49	3.35	6.08
Median percent relative bias across characteristics <sup>2</sup>	1.80	2.16	2.22	4.93
Percentage of characteristics with significant bias	62.62	64.71	53.00	35.79
Median effect size <sup>3</sup>	0.12	0.14	0.16	0.25
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.30	0.83	0.41	1.70
Effect size for difference <sup>5</sup>	0.01	0.02	0.01	0.04
<b>B2HIDGPOCKET (Highest degree enrollment, within 4 years of BA completion: used own money)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.12	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.89	2.13	1.84	4.43
Percentage of characteristics with significant bias	68.22	61.39	52.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.72*	2.80*	2.53*	6.42*
Effect size for difference <sup>5</sup>	0.03	0.03	0.03	0.07

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2HIDGPRIV (Highest degree enrollment, within 4 years of BA completion: used private loans)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.12	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.80	2.11	1.75	4.42
Percentage of characteristics with significant bias	68.22	60.40	53.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.01*	1.64*	2.97*	1.16
Effect size for difference <sup>5</sup>	0.04	0.03	0.05	0.02
<b>B2HIDGWRKSDY (Highest degree enrollment, within 4 years of BA completion: had federal work-study)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.13	5.87
Median percent relative bias across characteristics <sup>2</sup>	1.81	2.11	1.78	4.42
Percentage of characteristics with significant bias	68.22	60.40	54.00	40.00
Median effect size <sup>3</sup>	0.14	0.15	0.14	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.10	0.10	0.08	0.12
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2HIERNDG (Highest degree enrollment, within 4 years of BA completion: completed program)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.31	3.63	3.10	5.67
Median percent relative bias across characteristics <sup>2</sup>	1.81	2.08	1.95	4.23
Percentage of characteristics with significant bias	68.22	62.38	56.00	41.05
Median effect size <sup>3</sup>	0.13	0.14	0.14	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	5.59*	5.58*	4.37*	14.31*
Effect size for difference <sup>5</sup>	0.06	0.06	0.04	0.15
<b>B2HIFACS (Highest degree enrollment, within 4 years of BA completion: main factor in major or field of study choice)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.29	3.59	3.12	5.86
Median percent relative bias across characteristics <sup>2</sup>	1.76	2.10	1.81	4.32
Percentage of characteristics with significant bias	68.22	64.36	53.00	43.16
Median effect size <sup>3</sup>	0.13	0.14	0.13	0.26
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.30*	2.71*	1.33	2.42
Effect size for difference <sup>5</sup>	0.03	‡	‡	‡
<b>B2HIGRCNT (Most recent teaching job, 4 years after BA completion: Highest grade level taught)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.58	5.45	6.93	10.74
Median percent relative bias across characteristics <sup>2</sup>	3.72	3.84	4.37	8.84
Percentage of characteristics with significant bias	51.89	42.00	53.54	37.36
Median effect size <sup>3</sup>	0.25	0.23	0.34	0.48
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	24.61*	30.90*	22.18*	78.07*
Effect size for difference <sup>5</sup>	0.26	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2HIONLINPROG (Highest degree enrollment, within 4 years of BA completion: degree program entirely online)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.07	3.33	2.94	5.57
Median percent relative bias across characteristics <sup>2</sup>	1.73	1.93	2.05	4.63
Percentage of characteristics with significant bias	66.36	59.41	58.00	33.68
Median effect size <sup>3</sup>	0.12	0.12	0.12	0.25
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	5.61*	6.50*	3.00*	0.45
Effect size for difference <sup>5</sup>	0.06	0.07	0.03	#
<b>B2HOMOWE (Amount owed on mortgage for primary residence, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.79	2.98	3.57	2.18
Median percent relative bias across characteristics <sup>2</sup>	1.91	1.88	2.71	1.97
Percentage of characteristics with significant bias	66.36	56.44	57.00	28.42
Median effect size <sup>3</sup>	0.15	0.16	0.16	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.34*	1.19	1.71*	1.28
Effect size for difference <sup>5</sup>	0.02	0.02	0.02	0.02
<b>B2HOMVAL (Value of residence, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.81	3.02	3.56	2.11
Median percent relative bias across characteristics <sup>2</sup>	1.92	2.08	2.83	1.84
Percentage of characteristics with significant bias	66.36	60.40	60.00	20.00
Median effect size <sup>3</sup>	0.15	0.16	0.16	0.09
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.17	0.25	0.07	0.21
Effect size for difference <sup>5</sup>	#	#	#	#
<b>B2HPETCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach health/physical education)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.12	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.21	3.18	4.90	7.32
Percentage of characteristics with significant bias	56.60	48.51	52.53	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.31	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.11*	1.98	2.31*	1.58
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2IDRAWARE (Ever heard of IDR plans, as of the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.90	4.19	4.07	5.02
Median percent relative bias across characteristics <sup>2</sup>	1.76	1.76	1.91	3.07
Percentage of characteristics with significant bias	56.44	57.73	52.69	29.35
Median effect size <sup>3</sup>	0.15	0.18	0.14	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.96	1.50	1.55	8.16*
Effect size for difference <sup>5</sup>	0.02	0.02	0.02	0.08

See notes at end of table.



**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2INCSP (Spouse or domestic partner's gross income in 2019)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.49	2.65	2.83	2.88
Median percent relative bias across characteristics <sup>2</sup>	1.68	1.76	2.25	2.55
Percentage of characteristics with significant bias	62.62	57.84	46.00	27.37
Median effect size <sup>3</sup>	0.13	0.15	0.12	0.17
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.92	0.92	1.60	1.57
Effect size for difference <sup>5</sup>	0.01	0.01	0.02	0.02
<b>B2INFLACCT (Teaching influences, 4 years after BA completion: Teacher accountability)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.98	6.24	6.78	11.22
Median percent relative bias across characteristics <sup>2</sup>	4.26	4.46	4.18	7.51
Percentage of characteristics with significant bias	54.72	45.00	44.9	33.71
Median effect size <sup>3</sup>	0.29	0.32	0.29	0.58
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.73	4.32	14.05*	15.33
Effect size for difference <sup>5</sup>	0.05	0.05	0.19	‡
<b>B2INFLADV (Teaching influences, 4 years after BA completion: Possibilities for career advancement)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.98	6.24	6.77	11.22
Median percent relative bias across characteristics <sup>2</sup>	4.27	4.46	4.19	7.51
Percentage of characteristics with significant bias	54.72	45.00	44.90	33.71
Median effect size <sup>3</sup>	0.29	0.33	0.30	0.58
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.96	1.93	6.81	8.44
Effect size for difference <sup>5</sup>	0.02	‡	0.10	‡
<b>B2INFLCONT (Teaching influences, 4 years after BA completion: Opportunity to contribute to society)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.97	6.24	6.74	11.22
Median percent relative bias across characteristics <sup>2</sup>	4.30	4.45	4.49	7.51
Percentage of characteristics with significant bias	52.83	45.00	41.84	33.71
Median effect size <sup>3</sup>	0.28	0.33	0.30	0.58
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.86	0.18	2.05	2.96
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2INFLFIN (Teaching influences, 4 years after BA completion: Financial compensation)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.97	6.24	6.77	11.20
Median percent relative bias across characteristics <sup>2</sup>	4.25	4.45	4.19	7.58
Percentage of characteristics with significant bias	54.72	45.00	44.9	34.83
Median effect size <sup>3</sup>	0.29	0.32	0.30	0.58
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.54	8.09	7.63	1.46
Effect size for difference <sup>5</sup>	0.05	0.10	0.08	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2INFLKIDS (Teaching influences, 4 years after BA completion: Working with kids)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.98	6.24	6.77	11.22
Median percent relative bias across characteristics <sup>2</sup>	4.27	4.46	4.19	7.51
Percentage of characteristics with significant bias	54.72	45.00	44.9	33.71
Median effect size <sup>3</sup>	0.29	0.33	0.30	0.58
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.33	0.66	2.69	6.16
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2INFLPRES (Teaching influences, 4 years after BA completion: Prestige of occupation)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.98	6.24	6.76	11.22
Median percent relative bias across characteristics <sup>2</sup>	4.28	4.46	4.16	7.51
Percentage of characteristics with significant bias	54.72	45.00	43.88	33.71
Median effect size <sup>3</sup>	0.29	0.33	0.30	0.58
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.55	2.76	11.47	5.15
Effect size for difference <sup>5</sup>	0.05	0.03	0.12	‡
<b>B2LEVRCNT (Most recent school, 4 years after BA completion: Level)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.54	5.74	6.55	11.38
Median percent relative bias across characteristics <sup>2</sup>	3.79	3.60	4.05	8.38
Percentage of characteristics with significant bias	53.85	39.39	29.47	25.00
Median effect size <sup>3</sup>	0.24	0.24	0.29	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	42.53*	41.53*	39.42*	92.44*
Effect size for difference <sup>5</sup>	0.45	0.47	0.39	0.95
<b>B2LNGCAR (Used non-English language in a job since BA completion, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.43	2.89	2.50	3.13
Median percent relative bias across characteristics <sup>2</sup>	1.82	2.04	1.65	1.97
Percentage of characteristics with significant bias	54.21	46.08	44.00	15.79
Median effect size <sup>3</sup>	0.13	0.15	0.12	0.13
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.81*	3.81	4.16*	2.30
Effect size for difference <sup>5</sup>	0.04	0.04	0.04	0.02
<b>B2LNPAY (Current monthly payment on student loans, as of 2020)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.96	6.56	6.46	4.45
Median percent relative bias across characteristics <sup>2</sup>	2.41	2.68	2.61	2.39
Percentage of characteristics with significant bias	57.94	50.49	49.00	31.58
Median effect size <sup>3</sup>	0.28	0.39	0.30	0.16
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.13	2.38	1.40	3.21
Effect size for difference <sup>5</sup>	#	0.02	0.02	0.03

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2LOCRCNT (Most recent school, 4 years after BA completion: Locale)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.40	5.53	6.54	11.38
Median percent relative bias across characteristics <sup>2</sup>	3.58	3.80	4.02	8.38
Percentage of characteristics with significant bias	52.88	38.38	29.47	25.00
Median effect size <sup>3</sup>	0.23	0.23	0.29	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	18.90	17.66	23.99	56.06*
Effect size for difference <sup>5</sup>	0.24	‡	‡	‡
<b>B2LOGRCNT (Most recent teaching job, 4 years after BA completion: Lowest grade level taught)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.37	5.38	6.43	10.82
Median percent relative bias across characteristics <sup>2</sup>	3.55	3.39	3.72	7.31
Percentage of characteristics with significant bias	51.89	42.00	49.49	36.26
Median effect size <sup>3</sup>	0.24	0.22	0.28	0.52
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	30.58*	36.18*	31.58*	50.41*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2LSAT (Took LSAT, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.55	1.69	1.68	1.89
Median percent relative bias across characteristics <sup>2</sup>	0.85	0.97	1.08	1.48
Percentage of characteristics with significant bias	63.55	58.82	51.49	28.42
Median effect size <sup>3</sup>	0.08	0.09	0.09	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.19	0.06	0.33	0.27
Effect size for difference <sup>5</sup>	0.01	‡	0.01	‡
<b>B2LVMAIN (Reasons left teaching, 4 years after BA completion: Main reason left teaching)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.80	4.55	7.52	10.51
Median percent relative bias across characteristics <sup>2</sup>	3.75	3.27	5.49	7.86
Percentage of characteristics with significant bias	30.48	21.43	43.88	26.14
Median effect size <sup>3</sup>	0.21	0.19	0.38	0.46
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	‡	‡	‡	‡
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2MATTCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach math/computer science)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	21.43*	22.07*	10.32*	6.54*
Effect size for difference <sup>5</sup>	0.34	0.33	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2MCAT (Took MCAT, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.55	1.70	1.67	1.89
Median percent relative bias across characteristics <sup>2</sup>	0.87	0.96	1.03	1.45
Percentage of characteristics with significant bias	62.62	58.82	50.50	28.42
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.13	0.02	0.29	0.43*
Effect size for difference <sup>5</sup>	#	‡	‡	‡
<b>B2NDCWK (Enrolled in nondegree coursework, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.53	1.67	1.68	1.86
Median percent relative bias across characteristics <sup>2</sup>	0.87	0.94	1.11	1.52
Percentage of characteristics with significant bias	62.62	58.82	51.00	24.21
Median effect size <sup>3</sup>	0.08	0.09	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.63*	1.58*	2.09*	0.43
Effect size for difference <sup>5</sup>	0.03	0.02	0.03	0.01
<b>B2NEMPBW (Spent time taking a break from work during nonworking and non-enrollment spans, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.14	2.29	2.74	2.50
Median percent relative bias across characteristics <sup>2</sup>	0.88	1.29	2.47	1.84
Percentage of characteristics with significant bias	49.53	42.16	58.00	24.21
Median effect size <sup>3</sup>	0.13	0.12	0.16	0.15
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.01	0.63	1.84	2.03*
Effect size for difference <sup>5</sup>	#	0.01	0.02	0.02
<b>B2NEMPCC (Spent time caring for children during nonworking and non-enrollment spans, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.15	2.28	2.77	2.50
Median percent relative bias across characteristics <sup>2</sup>	0.98	1.32	2.40	1.74
Percentage of characteristics with significant bias	50.47	39.22	57.00	24.21
Median effect size <sup>3</sup>	0.13	0.12	0.16	0.15
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.86*	1.48*	1.13*	1.88
Effect size for difference <sup>5</sup>	0.02	0.02	‡	0.02
<b>B2NEMPCF (Spent time caring for family during nonworking and non-enrollment spans, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.16	2.30	2.77	2.50
Median percent relative bias across characteristics <sup>2</sup>	0.94	1.26	2.48	1.81
Percentage of characteristics with significant bias	51.40	40.20	57.00	24.21
Median effect size <sup>3</sup>	0.13	0.12	0.16	0.15
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.21	0.14	0.27	0.59
Effect size for difference <sup>5</sup>	#	#	#	0.01

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2NEMPHI (Spent time with personal health issues during nonworking and non-enrollment spans, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.16	2.30	2.80	2.51
Median percent relative bias across characteristics <sup>2</sup>	0.97	1.31	2.39	1.87
Percentage of characteristics with significant bias	50.47	42.16	58.00	24.21
Median effect size <sup>3</sup>	0.13	0.12	0.16	0.15
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.01	0.85	0.71	2.48*
Effect size for difference <sup>5</sup>	#	0.01	‡	0.03
<b>B2NEMPLW (Spent time looking for work during nonworking and non-enrollment spans, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.14	2.34	2.73	2.53
Median percent relative bias across characteristics <sup>2</sup>	0.94	1.35	2.45	2.20
Percentage of characteristics with significant bias	53.27	43.56	57.00	24.21
Median effect size <sup>3</sup>	0.13	0.12	0.16	0.16
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.54	1.11	0.82	0.82
Effect size for difference <sup>5</sup>	0.01	0.01	0.01	0.01
<b>B2NEMPSE (Spent time doing something else during nonworking and non-enrollment spans, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.13	2.29	2.71	2.48
Median percent relative bias across characteristics <sup>2</sup>	0.98	1.46	2.34	1.83
Percentage of characteristics with significant bias	51.40	42.16	57.00	23.16
Median effect size <sup>3</sup>	0.13	0.12	0.16	0.14
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.04	1.30	1.30	2.45
Effect size for difference <sup>5</sup>	0.01	0.01	0.01	0.03
<b>B2NEWTCHPOS (Type of position held in education after leaving teaching position, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.80	4.55	7.52	10.51
Median percent relative bias across characteristics <sup>2</sup>	3.75	3.27	5.49	7.86
Percentage of characteristics with significant bias	30.48	21.43	43.88	26.14
Median effect size <sup>3</sup>	0.21	0.19	0.38	0.46
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.30	2.32	1.53	‡
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2NFCUM (Cumulative nonfederal loans borrowed, as of B&amp;B:16/20)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.43	1.53	1.77	1.71
Median percent relative bias across characteristics <sup>2</sup>	0.75	0.94	1.66	1.09
Percentage of characteristics with significant bias	53.27	54.37	56.44	17.53
Median effect size <sup>3</sup>	0.08	0.08	0.10	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	22.85*	26.43*	17.27*	33.03*
Effect size for difference <sup>5</sup>	0.07	0.07	0.06	0.10

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2NMONTCHRCNT (Most recent teaching job, 4 years after BA completion: Number of months worked per year)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.67	6.00	6.26	10.40
Median percent relative bias across characteristics <sup>2</sup>	4.16	4.61	3.72	7.04
Percentage of characteristics with significant bias	52.83	45.00	45.45	36.26
Median effect size <sup>3</sup>	0.25	0.23	0.29	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.17	0.35	3.02	1.30
Effect size for difference <sup>5</sup>	0.06	0.02	0.17	0.06
<b>B2NUMSCHTCH (Number of schools taught at, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.66	5.98	6.29	10.33
Median percent relative bias across characteristics <sup>2</sup>	3.96	4.41	3.58	7.16
Percentage of characteristics with significant bias	54.72	46.00	49.49	35.87
Median effect size <sup>3</sup>	0.25	0.24	0.28	0.51
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	33.81*	33.53*	33.55*	42.32*
Effect size for difference <sup>5</sup>	0.85	0.85	0.83	1.17
<b>B2PAYSTAT (Current repayment status for student loans, as of 2020)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.48	4.83	4.80	3.68
Median percent relative bias across characteristics <sup>2</sup>	2.06	2.39	2.42	2.59
Percentage of characteristics with significant bias	70.09	67.96	59.41	26.32
Median effect size <sup>3</sup>	0.19	0.28	0.20	0.17
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.79	1.40	0.44	0.85
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2BPVAMT (Cumulative amount borrowed in private student loans for postbaccalaureate education, as of 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.48	1.57	1.81	1.66
Median percent relative bias across characteristics <sup>2</sup>	0.77	1.12	1.41	1.15
Percentage of characteristics with significant bias	56.07	57.28	56.44	21.05
Median effect size <sup>3</sup>	0.09	0.10	0.11	0.09
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	49.33*	47.78*	49.56*	68.26*
Effect size for difference <sup>5</sup>	0.08	0.07	0.08	0.11
<b>B2PIPLN (Teacher pipeline status, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.53	1.70	1.65	1.98
Median percent relative bias across characteristics <sup>2</sup>	0.89	0.95	1.12	1.42
Percentage of characteristics with significant bias	65.42	60.78	58.42	24.21
Median effect size <sup>3</sup>	0.09	0.10	0.09	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.25*	3.31*	4.27*	2.45*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2PMINRCNT (Most recent school, 4 years after BA completion: Percent minority)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.87	6.08	6.66	10.54
Median percent relative bias across characteristics <sup>2</sup>	3.80	4.02	3.91	8.28
Percentage of characteristics with significant bias	56.31	51.52	31.58	28.41
Median effect size <sup>3</sup>	0.26	0.25	0.31	0.46
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	7.77	11.32*	0.40	12.50
Effect size for difference <sup>5</sup>	0.13	0.19	0.01	0.24
<b>B2PRCOMMRCNT (Most recent teaching job, 4 years after BA completion: School leadership communicated type of school wanted)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.65	5.97	6.27	10.40
Median percent relative bias across characteristics <sup>2</sup>	4.04	4.44	3.61	7.04
Percentage of characteristics with significant bias	52.83	41.00	49.49	36.26
Median effect size <sup>3</sup>	0.25	0.23	0.28	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.75	6.40	5.36	13.48*
Effect size for difference <sup>5</sup>	0.08	0.11	‡	‡
<b>B2PRDISCIPRCNT (Most recent teaching job, 4 years after BA completion: School leadership enforced rules for student conduct)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.65	5.97	6.27	10.40
Median percent relative bias across characteristics <sup>2</sup>	4.04	4.44	3.61	7.04
Percentage of characteristics with significant bias	52.83	41.00	49.49	36.26
Median effect size <sup>3</sup>	0.25	0.23	0.28	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	7.59	11.37	6.11	26.69*
Effect size for difference <sup>5</sup>	0.09	0.13	0.08	‡
<b>B2PREFTRCNT (Most recent job, within 4 years of BA completion: prefer to work more hours)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.09	4.46	4.16	5.61
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.49	3.86
Percentage of characteristics with significant bias	60.38	54.46	54.00	28.42
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.27
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.78	1.20	2.17	6.44*
Effect size for difference <sup>5</sup>	0.02	0.01	0.02	0.06
<b>B2PREKTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach early childhood education [preK])</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	6.17*	2.11	4.56*	20.45*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2PRIVDFCUR (Currently in default on private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.33	6.00	7.28	6.70
Median percent relative bias across characteristics <sup>2</sup>	2.98	2.66	3.14	4.94
Percentage of characteristics with significant bias	66.36	48.54	54.46	44.21
Median effect size <sup>3</sup>	0.29	0.30	0.37	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.40	0.25	0.31	0.88
Effect size for difference <sup>5</sup>	0.01	‡	‡	‡
<b>B2PRIVDFRCUR (Currently in deferment on private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.33	6.00	7.28	6.70
Median percent relative bias across characteristics <sup>2</sup>	2.98	2.66	3.14	4.94
Percentage of characteristics with significant bias	66.36	48.54	54.46	44.21
Median effect size <sup>3</sup>	0.29	0.30	0.37	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.36	0.51	2.80	0.50
Effect size for difference <sup>5</sup>	0.02	0.01	0.04	0.01
<b>B2PRIVDFRCVCUR (Currently in deferment on private student loans due to COVID-19, as of the B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.33	6.00	7.28	6.70
Median percent relative bias across characteristics <sup>2</sup>	2.98	2.66	3.14	4.94
Percentage of characteristics with significant bias	66.36	48.54	54.46	44.21
Median effect size <sup>3</sup>	0.29	0.30	0.37	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.08	2.23	0.68	8.07*
Effect size for difference <sup>5</sup>	0.01	0.03	0.01	0.09
<b>B2PRIVLNLN (Ever received private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.65	1.67	2.04	1.86
Median percent relative bias across characteristics <sup>2</sup>	0.78	0.88	1.42	1.22
Percentage of characteristics with significant bias	53.27	52.43	59.41	18.95
Median effect size <sup>3</sup>	0.11	0.11	0.13	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	7.17*	6.68*	7.38*	6.98*
Effect size for difference <sup>5</sup>	0.09	0.09	0.09	0.09
<b>B2PRIVPAY (Current monthly payment on private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.10	6.78	8.28	9.08
Median percent relative bias across characteristics <sup>2</sup>	3.08	3.18	3.70	6.33
Percentage of characteristics with significant bias	53.27	45.10	51.52	48.39
Median effect size <sup>3</sup>	0.35	0.29	0.42	0.44
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.36	1.28	2.29	14.85*
Effect size for difference <sup>5</sup>	0.02	0.02	0.03	0.21

See notes at end of table.



**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2PRIVPAYMISS (Missed payment on a private student loan in 12 months before the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.07	6.65	8.19	9.06
Median percent relative bias across characteristics <sup>2</sup>	3.01	3.18	3.74	6.35
Percentage of characteristics with significant bias	54.21	44.12	54.00	47.31
Median effect size <sup>3</sup>	0.33	0.28	0.42	0.44
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.61	0.74	1.92*	5.15*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2PRIVPAYMORE (Made prepayment on private student loan in 12 months before the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.99	6.63	8.14	9.08
Median percent relative bias across characteristics <sup>2</sup>	2.92	3.05	3.74	6.34
Percentage of characteristics with significant bias	53.27	46.08	54.00	47.31
Median effect size <sup>3</sup>	0.33	0.27	0.42	0.44
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.52	4.49	3.63	7.34
Effect size for difference <sup>5</sup>	0.05	0.05	0.04	0.09
<b>B2PRIVPAY: NCES (Current monthly payment on private student loans as percent of earnings, as of the B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	7.25	7.06	8.51	8.92
Median percent relative bias across characteristics <sup>2</sup>	3.15	3.17	3.95	5.96
Percentage of characteristics with significant bias	54.21	44.12	52.53	48.39
Median effect size <sup>3</sup>	0.37	0.31	0.42	0.44
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	43.29	15.35	56.76	40.50
Effect size for difference <sup>5</sup>	0.03	0.02	0.05	0.01
<b>B2PRIVRPMTCUR (Currently in repayment on private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.33	6.00	7.28	6.70
Median percent relative bias across characteristics <sup>2</sup>	2.98	2.66	3.14	4.94
Percentage of characteristics with significant bias	66.36	48.54	54.46	44.21
Median effect size <sup>3</sup>	0.29	0.30	0.37	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.81	2.17	6.83*	8.82*
Effect size for difference <sup>5</sup>	0.01	0.02	0.07	0.09
<b>B2PRIVSTAT (Current repayment status for private student loans, as of B&amp;B:16/20 student survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	6.34	6.04	7.27	6.72
Median percent relative bias across characteristics <sup>2</sup>	2.99	2.84	3.13	4.91
Percentage of characteristics with significant bias	63.55	48.54	55.45	44.21
Median effect size <sup>3</sup>	0.28	0.30	0.37	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.20*	4.79*	8.93*	11.78*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2PRSUPRCNT (Most recent teaching job, 4 years after BA completion: School leadership supported and encouraged staff)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.65	5.97	6.27	10.40
Median percent relative bias across characteristics <sup>2</sup>	4.04	4.44	3.61	7.04
Percentage of characteristics with significant bias	52.83	41.00	49.49	36.26
Median effect size <sup>3</sup>	0.25	0.23	0.28	0.49
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	8.59	10.48	6.88*	9.98
Effect size for difference <sup>5</sup>	0.13	0.14	0.15	‡
<b>B2PUPRCNT (Most recent school, 4 years after BA completion: Sector [public/private])</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.38	5.39	6.95	10.11
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.59	4.46	8.06
Percentage of characteristics with significant bias	53.77	44.55	50.51	39.56
Median effect size <sup>3</sup>	0.22	0.23	0.34	0.52
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	118.23*	114.67*	129.50*	74.42*
Effect size for difference <sup>5</sup>	1.19	1.13	1.27	‡
<b>B2REGTCHST (Regular classroom teacher status within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.50	1.63	1.63	1.91
Median percent relative bias across characteristics <sup>2</sup>	0.80	0.96	1.13	1.35
Percentage of characteristics with significant bias	64.49	53.40	49.50	20.00
Median effect size <sup>3</sup>	0.08	0.10	0.09	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	14.59*	14.91*	18.47*	9.56*
Effect size for difference <sup>5</sup>	0.19	0.18	0.22	‡
<b>B2REGVT (Registered to vote, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.68	1.94	1.61	2.87
Median percent relative bias across characteristics <sup>2</sup>	1.04	1.13	1.16	2.22
Percentage of characteristics with significant bias	57.94	54.37	41.58	17.00
Median effect size <sup>3</sup>	0.10	0.12	0.08	0.19
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	8.53*	7.74*	8.33*	11.11*
Effect size for difference <sup>5</sup>	0.16	0.16	0.17	0.19
<b>B2RPMTCUR (Currently in repayment on student loans, as of 2020)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.47	4.81	4.80	3.62
Median percent relative bias across characteristics <sup>2</sup>	1.88	2.40	2.51	2.41
Percentage of characteristics with significant bias	69.16	67.96	60.40	28.42
Median effect size <sup>3</sup>	0.19	0.27	0.20	0.17
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.82	0.36	1.49	0.96
Effect size for difference <sup>5</sup>	0.01	#	0.02	0.01

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2RSEMP (Reason for nondegree coursework, within 4 years of BA completion: Needed for employment)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.44	2.62	3.35	3.98
Median percent relative bias across characteristics <sup>2</sup>	2.03	1.95	2.58	3.08
Percentage of characteristics with significant bias	40.19	26.47	36.63	15.79
Median effect size <sup>3</sup>	0.13	0.12	0.18	0.20
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.49*	2.78*	2.64*	5.08
Effect size for difference <sup>5</sup>	0.05	‡	‡	‡
<b>B2RSGOAL (Reason for nondegree coursework, within 4 years of BA completion: Career goals)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.38	2.56	3.33	4.16
Median percent relative bias across characteristics <sup>2</sup>	1.72	1.77	2.67	3.36
Percentage of characteristics with significant bias	38.32	30.39	39.00	20.00
Median effect size <sup>3</sup>	0.13	0.12	0.19	0.21
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	4.49*	3.81	5.15*	10.58*
Effect size for difference <sup>5</sup>	0.05	0.04	0.05	0.11
<b>B2RSLTED (Reason for nondegree coursework, within 4 years of BA completion: Education goals)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.52	2.74	3.34	4.19
Median percent relative bias across characteristics <sup>2</sup>	2.04	2.02	2.63	3.36
Percentage of characteristics with significant bias	40.19	33.33	36.63	21.05
Median effect size <sup>3</sup>	0.14	0.13	0.20	0.21
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	6.26*	4.44*	6.90*	2.20
Effect size for difference <sup>5</sup>	0.07	‡	0.07	‡
<b>B2RSOTH (Reason for nondegree coursework, within 4 years of BA completion: Other)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.52	2.76	3.36	4.19
Median percent relative bias across characteristics <sup>2</sup>	2.08	2.06	2.70	3.33
Percentage of characteristics with significant bias	39.25	32.35	35.64	21.05
Median effect size <sup>3</sup>	0.13	0.13	0.18	0.21
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.30*	1.96*	0.10	0.97
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2RSPERS (Reason for nondegree coursework, within 4 years of BA completion: Personal enrichment)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.48	2.62	3.37	3.99
Median percent relative bias across characteristics <sup>2</sup>	1.85	1.86	2.54	3.41
Percentage of characteristics with significant bias	39.25	29.41	36.00	16.84
Median effect size <sup>3</sup>	0.14	0.13	0.20	0.20
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	5.02*	6.20*	3.55	5.25
Effect size for difference <sup>5</sup>	0.05	0.06	0.04	0.05

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2SAMESTATE (Ever employed in same state as bachelor's degree-granting institution, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.62	1.71	1.72	1.96
Median percent relative bias across characteristics <sup>2</sup>	0.96	1.08	1.31	1.37
Percentage of characteristics with significant bias	66.36	57.84	57.43	23.16
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	10.10*	4.15*	12.56*	11.67*
Effect size for difference <sup>5</sup>	0.12	‡	0.14	0.12
<b>B2SCITCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach natural sciences)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	15.04*	7.70*	8.93*	5.40
Effect size for difference <sup>5</sup>	0.32	‡	‡	‡
<b>B2SECETCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach general education [middle/secondary grades])</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	2.35*	3.11*	0.70	0.59
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2SEDTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach special education)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	13.03*	11.75*	7.43*	4.02*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2SOCTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach social sciences)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	19.54*	11.06*	8.99*	4.50
Effect size for difference <sup>5</sup>	0.35	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2SPAMT (Spouse or domestic partner's student loan amount borrowed, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.51	2.62	2.96	3.23
Median percent relative bias across characteristics <sup>2</sup>	1.78	1.48	2.59	3.20
Percentage of characteristics with significant bias	64.49	54.90	53.00	22.11
Median effect size <sup>3</sup>	0.13	0.14	0.16	0.19
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	9.65*	8.88*	14.21*	14.44*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2SPCOL (Spouse or domestic partner attended college or graduate school in 2019-20, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.47	2.66	2.76	2.60
Median percent relative bias across characteristics <sup>2</sup>	1.65	1.86	2.13	2.21
Percentage of characteristics with significant bias	63.55	62.75	55.00	30.53
Median effect size <sup>3</sup>	0.12	0.14	0.12	0.16
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.32	0.36	0.37	0.21
Effect size for difference <sup>5</sup>	#	#	#	#
<b>B2SPEMP (Spouse or domestic partner employed in 2019)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.46	2.64	2.77	2.59
Median percent relative bias across characteristics <sup>2</sup>	1.63	1.84	2.19	2.13
Percentage of characteristics with significant bias	64.49	62.75	56.00	30.53
Median effect size <sup>3</sup>	0.12	0.14	0.12	0.16
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.24	0.44	0.19	1.21*
Effect size for difference <sup>5</sup>	#	0.01	‡	‡
<b>B2SPLNPY (Spouse or domestic partner's monthly payment on student loans, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.63	4.84	5.13	9.11
Median percent relative bias across characteristics <sup>2</sup>	2.76	2.89	3.66	5.11
Percentage of characteristics with significant bias	58.88	49.02	50.00	30.53
Median effect size <sup>3</sup>	0.25	0.30	0.28	0.50
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	5.46*	4.91	2.35	9.90
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2SPLV (Highest education attained by spouse or domestic partner, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.47	2.66	2.77	2.60
Median percent relative bias across characteristics <sup>2</sup>	1.66	1.85	2.12	2.18
Percentage of characteristics with significant bias	64.49	63.73	55.00	30.53
Median effect size <sup>3</sup>	0.12	0.14	0.12	0.16
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.02	0.82	1.78	2.31*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2SPOWE (Spouse or domestic partner's student loan amount owed, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.90	4.13	4.29	7.20
Median percent relative bias across characteristics <sup>2</sup>	2.42	2.64	3.34	4.64
Percentage of characteristics with significant bias	60.75	54.90	49.00	34.74
Median effect size <sup>3</sup>	0.25	0.25	0.25	0.36
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	9.98*	9.75*	5.05*	8.91*
Effect size for difference <sup>5</sup>	0.12	0.12	‡	‡
<b>B2STEMOCCRCNT (Most recent job, within 4 years of BA completion: Occupation is in STEM)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.46	1.50	1.63	1.84
Median percent relative bias across characteristics <sup>2</sup>	0.82	0.93	1.07	1.51
Percentage of characteristics with significant bias	66.36	60.78	57.00	27.37
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.88*	2.30*	0.55	3.54*
Effect size for difference <sup>5</sup>	0.02	0.03	0.01	0.04
<b>B2SUBGRE (Took GRE Subject Test, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.55	1.68	1.68	1.89
Median percent relative bias across characteristics <sup>2</sup>	0.87	0.94	1.04	1.47
Percentage of characteristics with significant bias	61.68	58.82	52.48	28.42
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.10
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.06	#	0.12	0.05
Effect size for difference <sup>5</sup>	#	‡	‡	‡
<b>B2TCHGRT (Aware of TEACH Grant Programs, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.55	1.71	1.66	1.96
Median percent relative bias across characteristics <sup>2</sup>	0.97	0.97	1.14	1.42
Percentage of characteristics with significant bias	62.62	58.82	54.46	24.21
Median effect size <sup>3</sup>	0.09	0.10	0.09	0.12
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.01*	0.82	1.44*	1.00
Effect size for difference <sup>5</sup>	0.01	0.01	0.02	0.01
<b>B2TCHLNFRGV (Awareness and participation in teacher loan forgiveness programs, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.46	5.43	7.02	10.25
Median percent relative bias across characteristics <sup>2</sup>	3.14	3.51	4.38	6.86
Percentage of characteristics with significant bias	54.72	49.00	53.54	40.00
Median effect size <sup>3</sup>	0.25	0.22	0.34	0.47
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	6.56*	6.19*	12.13	46.01*
Effect size for difference <sup>5</sup>	0.09	0.09	0.14	0.46

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2TCHMO (Number of months taught, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.33	5.33	6.62	9.68
Median percent relative bias across characteristics <sup>2</sup>	3.67	3.22	4.72	7.69
Percentage of characteristics with significant bias	65.09	49.50	59.00	51.61
Median effect size <sup>3</sup>	0.24	0.25	0.32	0.44
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.85*	4.75*	1.04	4.76
Effect size for difference <sup>5</sup>	0.07	0.09	0.02	0.08
<b>B2TCHOCRCNT (Most recent job, within 4 years of BA completion: Occupation is in teaching)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.46	1.51	1.58	1.87
Median percent relative bias across characteristics <sup>2</sup>	0.83	0.87	1.08	1.61
Percentage of characteristics with significant bias	67.29	55.88	57.00	28.42
Median effect size <sup>3</sup>	0.09	0.09	0.09	0.11
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.14*	1.62*	0.48	0.39*
Effect size for difference <sup>5</sup>	0.02	0.02	0.01	‡
<b>B2TCHSTMY (Date first taught, 4 years after BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.94	4.90	5.93	9.65
Median percent relative bias across characteristics <sup>2</sup>	3.58	3.48	4.15	7.68
Percentage of characteristics with significant bias	68.22	50.49	57.00	51.61
Median effect size <sup>3</sup>	0.22	0.23	0.26	0.45
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.01	0.01	0.01	0.01
Effect size for difference <sup>5</sup>	0.13	0.13	0.12	0.25
<b>B2TLCEVR (Ever allowed to work remotely for any jobs due to coronavirus pandemic, within 4 years of BA completion)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	2.18	2.32	2.20	2.75
Median percent relative bias across characteristics <sup>2</sup>	1.29	1.40	1.37	1.95
Percentage of characteristics with significant bias	62.62	60.78	58.00	25.00
Median effect size <sup>3</sup>	0.13	0.13	0.14	0.14
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.65	0.64	1.43	3.37*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2TTLIRCNT (Most recent school, 4 years after BA completion: Title I eligible)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.59	5.90	6.68	12.50
Median percent relative bias across characteristics <sup>2</sup>	3.68	3.84	4.37	9.81
Percentage of characteristics with significant bias	45.63	40.40	24.21	27.59
Median effect size <sup>3</sup>	0.24	0.25	0.31	0.52
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	6.44	6.24	5.66	10.78
Effect size for difference <sup>5</sup>	0.08	0.07	0.07	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2UNIONRCT (Most recent teaching job, 4 years after BA completion: Union representation)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.80	6.12	6.24	11.14
Median percent relative bias across characteristics <sup>2</sup>	4.36	4.54	3.71	7.33
Percentage of characteristics with significant bias	57.55	40.40	42.42	39.56
Median effect size <sup>3</sup>	0.24	0.25	0.28	0.50
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	56.00*	63.85*	49.48*	11.19
Effect size for difference <sup>5</sup>	0.58	0.65	0.51	‡
<b>B2VOCTCHCRT (Most recent teaching job, 4 years after BA completion: Taught and certified to teach vocational/career/technical education)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.39	5.34	7.13	10.14
Median percent relative bias across characteristics <sup>2</sup>	3.26	3.19	4.95	7.32
Percentage of characteristics with significant bias	56.60	48.51	55.56	44.09
Median effect size <sup>3</sup>	0.23	0.21	0.32	0.54
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.15*	0.75*	1.64*	7.62
Effect size for difference <sup>5</sup>	‡	‡	‡	‡
<b>B2VTNEL (Voted in 2020 election)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.69	1.92	1.64	2.66
Median percent relative bias across characteristics <sup>2</sup>	1.05	1.27	1.24	2.15
Percentage of characteristics with significant bias	58.88	54.37	43.56	16.00
Median effect size <sup>3</sup>	0.10	0.12	0.08	0.18
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.44*	3.35*	3.19*	4.98*
Effect size for difference <sup>5</sup>	0.05	0.05	0.04	0.06
<b>B2WORTHG (Graduate education was worth the financial cost, as of B&amp;B:16/20 survey)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	3.51	3.80	3.28	7.10
Median percent relative bias across characteristics <sup>2</sup>	1.99	2.30	1.91	4.99
Percentage of characteristics with significant bias	68.22	59.41	53.00	42.11
Median effect size <sup>3</sup>	0.13	0.14	0.14	0.31
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.41	1.33	1.39	0.44
Effect size for difference <sup>5</sup>	0.02	0.01	0.01	#
<b>B2WYCVRCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Hours reduced due to coronavirus pandemic)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	5.21	5.70	4.64	8.51
Median percent relative bias across characteristics <sup>2</sup>	3.35	3.54	3.25	6.04
Percentage of characteristics with significant bias	62.26	54.46	53.00	34.74
Median effect size <sup>3</sup>	0.27	0.31	0.25	0.45
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.05*	0.73	1.4	2.32*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡

See notes at end of table.



**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2WYFRCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Family responsibilities)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.10	4.47	4.15	5.73
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.50	3.37
Percentage of characteristics with significant bias	60.38	52.48	54.00	32.63
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.10	0.07	0.28	0.34
Effect size for difference <sup>5</sup>	#	‡	‡	‡
<b>B2WYMLJRCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Held more than one job)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.10	4.47	4.15	5.73
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.50	3.37
Percentage of characteristics with significant bias	60.38	52.48	54.00	32.63
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.02	0.77	0.09	2.59
Effect size for difference <sup>5</sup>	0.01	‡	‡	‡
<b>B2WYNJARCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Full-time job not available)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.10	4.47	4.15	5.73
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.50	3.37
Percentage of characteristics with significant bias	60.38	52.48	54.00	32.63
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.55	0.04	2.17	2.26
Effect size for difference <sup>5</sup>	0.01	‡	0.02	‡
<b>B2WYNOHRCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Did not want to work more hours)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.10	4.47	4.15	5.73
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.50	3.37
Percentage of characteristics with significant bias	60.38	52.48	54.00	32.63
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.25	2.48	0.37	0.87
Effect size for difference <sup>5</sup>	0.01	0.03	‡	‡

See notes at end of table.

**Table J-17. Summary statistics of item nonresponse bias analysis, by control of baccalaureate-granting institution: 2020—Continued**

Selected variables	Control of baccalaureate-granting institution			
	Overall	Public	Private nonprofit	Private for-profit
<b>B2WYOTHCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Other reason)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.10	4.47	4.15	5.73
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.50	3.37
Percentage of characteristics with significant bias	60.38	52.48	54.00	32.63
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	0.77	0.77	0.19	0.45
Effect size for difference <sup>5</sup>	0.01	‡	‡	‡
<b>B2WYSCHRCNT (Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Working while attending school)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	4.10	4.47	4.15	5.73
Median percent relative bias across characteristics <sup>2</sup>	2.44	2.55	2.50	3.37
Percentage of characteristics with significant bias	60.38	52.48	54.00	32.63
Median effect size <sup>3</sup>	0.21	0.23	0.22	0.32
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	1.17	2.00	0.07	1.29
Effect size for difference <sup>5</sup>	0.01	0.02	#	‡
<b>PAREduc (Parents' highest education level)</b>				
Before imputation <sup>1</sup>				
Mean percent relative bias across characteristics <sup>2</sup>	1.42	1.51	1.58	1.89
Median percent relative bias across characteristics <sup>2</sup>	0.84	0.85	1.09	1.34
Percentage of characteristics with significant bias	67.29	55.45	56.00	27.37
Median effect size <sup>3</sup>	0.08	0.08	0.08	0.09
After imputation				
Difference between pre- and postimputation means <sup>4</sup>	3.32*	2.61*	2.86*	2.93*
Effect size for difference <sup>5</sup>	‡	‡	‡	‡

# Rounds to zero.

‡Reporting standards not met (fewer than 30 unweighted nonrespondents).

\*  $p < 0.05$ . The difference between the pre- and postimputation means (using WTB000) is significant. For categorical variables, at least one category difference is significant.<sup>1</sup> Before imputation calculations use the weighted differences between respondent and eligible-sample mean, using the B&B:16/20 base weight, times 100.<sup>2</sup> Percent relative bias is calculated as the ratio of estimated bias to the weighted eligible-sample mean, using the B&B:16/20 base weight, times 100.<sup>3</sup> Effect size for categorical variables is calculated as the square root of the weighted sum over categories of the squared differences over eligible-sample means.<sup>4</sup> For categorical variables, the difference between pre- and postimputation means is the size-weighted average percentage difference across categories pre- and postimputation. "Size" refers to the unweighted count of respondents in a category.<sup>5</sup> For categorical variables, the effect size for difference is calculated as the square root of the sum over categories of the squared differences over weighted postimputation means, using WTB000. For continuous variables, the Effect size for difference is calculated as the weighted difference over the postimputation standard deviation, using WTB000.

NOTE: BA = bachelor's degree; IDR = income-driven repayment. 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, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

# Appendix K. Item Response Rates and Imputation Results

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**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2AAEVAT	Enrollment & completion, within 4 yrs of BA: Associate's degree program	16,050	95.29	95.21	96.22	90.40
B2ACCEPT	Most recent employer, within 4 yrs of BA: LGBT acceptance	25,900	91.12	91.47	90.56	90.18
B2ACS16A	Disability, as of the B&B:16/20 survey: Deaf or serious difficulty hearing	26,250	98.86	99.01	98.63	98.46
B2ACS16B	Disability, as of the B&B:16/20 survey: Blind or serious difficulty seeing	26,250	98.86	99.01	98.62	98.43
B2ACS17A	Disability, as of the B&B:16/20 survey: Serious difficulty remembering, concentrating, etc.	26,250	98.84	98.98	98.62	98.47
B2ACS17B	Disability, as of the B&B:16/20 survey: Serious difficulty walking or climbing stairs	26,250	98.86	99.01	98.63	98.47
B2AFFADDLED	Education cost, as of the B&B:16/20 survey: Pursued additional education	26,250	91.18	91.49	90.78	90.01
B2AFFCHLD	Education cost, as of the B&B:16/20 survey: Delayed having children	26,250	91.28	91.58	90.87	90.18
B2AFFDLYED	Education cost, as of the B&B:16/20 survey: Delayed enrolling for additional education	26,250	91.19	91.49	90.78	90.06
B2AFFHOME	Education cost, as of the B&B:16/20 survey: Delayed buying a home	26,250	91.21	91.43	90.96	90.18
B2AFFLESS	Education cost, as of the B&B:16/20 survey: Took a less desirable job	26,250	91.19	91.58	90.58	90.16
B2AFFMARR	Education cost, as of the B&B:16/20 survey: Delayed getting married	26,250	91.17	91.45	90.8	90.13
B2AFFUNREL	Education cost, as of the B&B:16/20 survey: Took job outside field of study	26,250	91.33	91.69	90.85	90.00
B2AFFWKMR	Education cost, as of the B&B:16/20 survey: Worked more than desired	26,250	91.30	91.59	90.90	90.18
B2AGEATBA	Age, as of BA completion	26,250	100.00	100.00	100.00	100.00
B2ALLHRS4YRS	Hours worked per week in all current jobs, as of 4 yrs after BA	24,360	82.67	83.02	82.07	82.06
B2ALLINC4YRS	Annualized total pay for all current jobs, as of 4 yrs after BA	24,360	82.18	82.50	81.69	81.17
B2ALONE	Household composition, as of the B&B:16/20 survey: Living alone	26,250	91.98	92.44	91.17	91.19
B2APPLY	Ever applied for a preK through 12th-grade teaching position, 4 yrs after BA completion	26,250	82.15	82.31	82.16	80.46
B2ARTTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach arts/music	15,060	14.07	15.23	12.98	6.65
B2AWFAM	Awareness of sexual orientation, as of the B&B:16/20 survey: Among immediate family members	26,250	91.62	92.05	90.97	90.45
B2AWSOC	Awareness of sexual orientation, as of the B&B:16/20 survey: In social circle	26,250	91.54	91.94	90.95	90.33
B2AWWRK	Awareness of sexual orientation, as of the B&B:16/20 survey: At work	26,250	91.55	91.99	90.88	90.18
B2BADATMY	BA completion date	26,250	100.00	100.00	100.00	100.00
B2BAEVAT	Enrollment & completion, within 4 yrs of BA: Additional bachelor's deg program	16,050	93.11	93.08	94.16	86.91
B2BALRCNT	Most recent job, within 4 yrs of BA: Satisfaction with work-life balance	25,770	88.17	88.69	87.43	86.39
B2BATOPBA	Months between BA completion & first postbachelor's enrollment, within 4 yrs of BA	16,050	98.52	98.64	98.50	96.97

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2BENANYRCNT	Most recent job, within 4 yrs of BA: Employer offered benefits	24,930	93.79	94.20	93.21	92.21
B2BENRCNT	Most recent job, within 4 yrs of BA: Satisfaction with benefits	25,770	88.03	88.59	87.22	86.18
B2BORAMT3	Cumulative amt borrowed for undergrad & grad education, as of 4 yrs after BA	26,250	62.33	62.14	62.83	61.93
B2CARINDRCNT	Most recent job, within 4 yrs of BA: Part of a career	25,770	92.20	92.51	91.73	91.30
B2CARLOAN	Monthly vehicle loan or lease payment, as of the B&B:16/20 survey	26,250	90.98	91.22	90.76	89.59
B2CEREVAT	Enrollment & completion, within 4 yrs of BA: undergrad certificate or diploma program	16,050	95.76	95.74	96.47	91.52
B2CHALRCNT	Most recent job, within 4 yrs of BA: Satisfaction with challenge of work	25,770	89.86	90.42	89.08	87.79
B2CHNGCVEVR	Ever laid off from any jobs due to the coronavirus pandemic, within 4 yrs of BA	19,100	92.16	92.60	91.29	92.83
B2CHNGCVRCNT	Most recent job, within 4 yrs of BA: Laid off or terminated due to coronavirus pandemic	18,980	98.45	98.60	98.34	97.34
B2CITZN	US citizenship status, as of the B&B:16/20 survey	26,250	98.30	98.40	98.01	98.64
B2CLICENSE	Ever had professional certification or state or industry license, within 4 yrs of BA	26,250	81.16	81.53	80.47	80.68
B2CONTEMP	Contributed to employer-based retirement account in past 12 months, as of the B&B:16/20 survey	21,250	79.84	80.10	79.62	78.11
B2CONTNON	Contributed to non-employer-based retirement account in past 12 months, as of the B&B:16/20 survey	15,740	61.19	60.77	63.36	54.00
B2CONTRET	Contributed to retirement account in past 12 months, as of the B&B:16/20 survey	22,330	79.85	80.27	79.60	76.47
B2COVBRKENR	Took a break in enrollment due to coronavirus pandemic, between Jan 2020 & June 2020	11,300	94.40	95.12	93.57	90.00
B2COVONLIN	Took online courses due to coronavirus pandemic, between Jan 2020 & June 2020	11,300	94.23	94.58	93.90	90.91
B2CRDBAL	Credit card balance, as of the B&B:16/20 survey	24,490	88.76	89.45	87.99	85.13
B2CRTELEM	Certification level, 4 years after BA completion: K through 5th grade	11,930	33.52	38.07	25.36	17.69
B2CRTHIGH	Certification level, 4 years after BA completion: 9th through 12th grade	11,930	33.52	38.07	25.36	17.69
B2CRTMID	Certification level, 4 years after BA completion: 6th through 8th grade	11,930	33.52	38.07	25.36	17.69
B2CRTPREK	Certification level, 4 yrs after BA completion: Early childhood education (preK)	11,930	33.52	38.07	25.36	17.69
B2CSTDYCR	Monthly child care costs, as of the B&B:16/20 survey	12,790	90.09	92.26	89.35	82.79
B2CURCRT	Certified to teach, 4 years after BA completion	12,100	37.31	40.73	31.53	24.99
B2CURREGTCH	Currently working as a regular classroom teacher, 4 years after BA completion	15,060	7.39	7.46	7.74	4.41
B2CVADDED	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Pursued additional education/training	26,250	97.12	97.41	96.60	96.62
B2CVBRKEVR	Ever had a break in work due to the coronavirus pandemic, within 4 yrs of BA	19,100	94.33	94.68	93.66	94.59

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2CVBRKRCNT	Most recent job, within 4 yrs of BA: Break in work due to coronavirus pandemic	18,980	98.82	98.96	98.67	98.11
B2CVDLYHM	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed buying a home	26,250	97.09	97.25	96.83	96.61
B2CVDLYKIDS	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed having children	26,250	96.94	97.09	96.68	96.70
B2CVDLYMAR	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed getting married	26,250	97.00	97.08	96.87	96.80
B2CVFMRESP	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Took on additional family/child care	26,250	97.15	97.31	96.88	96.72
B2CVLVEVR	Ever offered paid leave due to coronavirus pandemic, within 4 yrs of BA	19,090	93.19	93.50	92.57	93.62
B2CVLVRCNT	Most recent job, within 4 yrs of BA: Paid leave due to coronavirus pandemic offered	18,430	97.60	97.79	97.40	96.48
B2CVNEMP	Spent time not working for pay due to coronavirus pandemic, within 4 yrs of BA	20,440	93.81	94.33	93.01	92.97
B2CVSTRESS	Did not meet essential expenses in past 12 months, as of the B&B:16/20 survey: Due to COVID	26,250	97.12	97.19	97.15	96.24
B2CVUNDESJB	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Took a less desirable job	26,250	97.04	97.28	96.61	96.68
B2CVUNRJB	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Took a job outside of your field	26,250	97.12	97.32	96.78	96.77
B2CVWKINST	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Delayed additional education	26,250	97.03	97.26	96.62	96.65
B2CVWKLESS	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Worked less than desired	26,250	97.06	97.27	96.69	96.71
B2CVWKMORE	Results of the coronavirus pandemic, as of the B&B:16/20 survey: Worked more than desired	26,250	97.23	97.48	96.78	96.84
B2DEP2	Number of dependent children, as of 4 yrs after BA	26,250	96.59	96.97	96.61	92.61
B2DEPAGEHIGH	Age of oldest dependent child, as of 4 yrs after BA	13,710	92.76	94.20	92.41	88.35
B2DEPAGELOW	Age of youngest dependent child, as of 4 yrs after BA	13,710	92.76	94.20	92.41	88.35
B2DFRFEDPAY	Current monthly payment postponed for federal student loans, as of 4 yrs after BA	15,080	97.58	97.39	97.72	98.51
B2DISABL	Received disability benefits, within 4 yrs of BA	26,250	98.02	98.04	98.03	97.69
B2DISABLE	Has some type of disability, as of the B&B:16/20 survey	26,250	98.84	98.98	98.62	98.46
B2DISCRIM	Employment discrimination, as of the B&B:16/20 survey: Overall	25,900	91.27	91.65	90.70	90.06
B2DISGEN	Employment discrimination, as of the B&B:16/20 survey: Gender identity	25,900	91.55	91.91	90.96	90.73
B2DISLGBTQ	Employment discrimination, as of the B&B:16/20 survey: Sexual orientation	25,900	91.62	91.97	91.07	90.61
B2DISNATION	Employment discrimination, as of the B&B:16/20 survey: Nationality	25,900	91.56	91.88	91.05	90.80

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2DISRCETH	Employment discrimination, as of the B&B:16/20 survey: Race/ethnicity	25,900	91.60	91.89	91.11	90.98
B2DISREL	Employment discrimination, as of the B&B:16/20 survey: Religion	25,900	91.56	91.90	91.04	90.63
B2DISSEX	Employment discrimination, as of the B&B:16/20 survey: Sex	25,900	91.61	91.96	91.02	90.79
B2DOCEVAT	Enrollment & completion, within 4 yrs of BA: Research doctoral degree program	16,050	95.43	95.75	95.80	88.94
B2DONATE	Donated to 2015-16 BA-granting institution, as of the B&B:16/20 survey	26,250	91.88	92.26	91.25	91.01
B2DPNTS	Household composition, as of the B&B:16/20 survey: Living with children or dependents	26,250	91.98	92.44	91.17	91.19
B2EDUINDRCNT	Most recent employer, within 4 yrs of BA: Level of education industry	25,770	92.36	92.74	91.71	91.65
B2EEHIST	Employment and enrollment history, within 4 yrs of BA	26,250	93.33	93.54	92.99	92.79
B2EETCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach elementary education	15,060	14.10	15.23	13.07	6.65
B2EMPSLF	Ever self-employed, within 4 yrs of BA	25,910	89.16	89.47	88.57	88.78
B2EMPSLFRCNT	Most recent employer, within 4 yrs of BA: Self-employed	25,770	94.84	95.18	94.33	93.77
B2EMPSTAT	Employment status considering all jobs, as of 4 yrs after BA	26,250	88.13	88.26	88.02	87.24
B2EMPTYPRCNT	Most recent employer, within 4 yrs of BA: Type of employer	25,770	92.55	92.65	92.45	92.10
B2ENGTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach English/language arts	15,060	14.10	15.23	13.07	6.65
B2EPREPALT	Prepared to teach through an alternative entry program, as of the B&B:16/20 survey	26,250	70.05	70.24	69.75	69.58
B2EPREPCOL	Prepared to teach at a college or university that provides certification, as of the B&B:16/20 survey	26,250	77.99	78.35	77.42	77.01
B2EPREPCOMP	Prepared to teach through a student teaching assignment, as of the B&B:16/20 survey	26,250	78.20	78.01	78.79	77.34
B2EPREPONL	Prepared to teach through an online-only certification program, as of the B&B:16/20 survey	26,250	69.91	70.10	69.47	70.16
B2ESLTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach ESL	15,060	14.07	15.23	12.98	6.65
B2ESTTCLG	Length of student teaching	14,030	18.96	20.11	18.55	7.83
B2EVERLK	Ever looked for work within 4 yrs of BA	26,250	81.71	81.72	81.79	81.09
B2EVRASST	Ever used assistantships or fellowships for post-BA degree, within 4 yrs of BA	16,050	63.79	63.15	66.66	54.08
B2EVRCRT	Ever certified to teach, 4 years after BA completion	26,250	87.04	87.28	85.96	89.83
B2EVRDEF	Ever defaulted on student loans, as of 2020	23,420	58.92	57.53	60.71	63.89
B2EVREMPAID	Ever used employer assistance for post-BA degree, within 4 yrs of BA	16,050	61.75	61.15	63.77	56.89
B2EVRENRLFP	Ever enrolled at private for-profit institution, within 4 yrs of BA	16,050	93.53	94.06	92.20	94.99
B2EVRGIFT	Ever used personal loan or gift for post-BA degree, within 4 yrs of BA	16,050	60.88	60.09	63.81	52.77
B2EVRGRANT	Ever used grants or scholarships for post-BA degree, within 4 yrs of BA	16,050	65.98	65.05	68.89	59.90

See notes at end of table.



**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2EVGRDENR	Ever enrolled in a graduate degree program, within 4 yrs of BA	16,050	95.49	95.60	95.96	91.02
B2EVROTHAID	Ever used other financial aid for post-BA degree, within 4 yrs of BA	16,050	60.17	59.50	62.16	56.39
B2EVROTHLN	Ever used other student loans for post-BA degree, within 4 yrs of BA	16,050	65.74	65.80	66.11	62.64
B2EVRPOCKET	Ever used own money for post-BA degree, within 4 yrs of BA	16,050	71.59	71.98	72.96	58.03
B2EVRPRIVDEF	Ever defaulted on private student loans, as of the B&B:16/20 survey	16,330	23.55	21.42	28.17	22.21
B2EVRPRIVPIF	Ever paid off a private student loan, as of the B&B:16/20 survey	16,330	24.33	22.00	29.20	23.78
B2EVRREGTCH	Worked as a regular classroom teacher, within 4 years of BA completion	26,250	70.51	70.39	70.13	73.63
B2EVRTCH	Ever taught at preK through 12th-grade level, within 4 years of BA completion	26,250	82.79	82.96	82.73	81.35
B2EVRUGENR	Ever enrolled in an undergraduate degree program, within 4 yrs of BA	16,050	95.85	95.84	96.59	91.36
B2EVRVT	Ever voted in any election, as of the B&B:16/20 survey	25,720	91.74	92.01	91.55	89.82
B2EVRWRKSDY	Ever had work-study for post-BA degree, within 4 yrs of BA	16,050	58.76	57.87	61.58	52.51
B2EXPEVR	Highest level of education ever expected to complete, as of the B&B:16/20 survey	26,250	91.68	91.93	91.21	91.37
B2FAMLNHLP	Family or friends helping to repay loans, within the 12 months before the B&B:16/20 survey	23,720	75.93	75.86	75.41	79.05
B2FEDPAY	Current monthly payment on federal student loans, as of 4 yrs after BA	13,180	73.86	78.45	61.18	78.78
B2FEDPAYMISS	Missed payment on a federal student loan in 12 months before the B&B:16/20 survey	13,180	85.44	84.50	88.38	83.63
B2FEDPAYMORE	Made prepayment on federal student loan in 12 months before the B&B:16/20 survey	13,180	78.93	80.19	79.79	70.03
B2FEDPAYPLAN	Current repayment plan for federal student loans, as of 4 yrs after BA	22,030	92.78	94.08	90.56	91.03
B2FEDPAYPLAN_INC	Currently enrolled in an IDR plan for federal student loans, as of 4 yrs after BA	22,030	93.54	94.80	91.27	92.24
B2FEDPIFM	Months between entering repayment & all non-discharged federal loans paid in full, 4 yrs after bachelor's deg	10,870	99.97	100.00	100.00	99.08
B2FIN2000	Respondent's confidence in ability to come up with \$2,000 within the next month, as of the B&B:16/20 survey	26,250	91.68	92.11	91.05	90.26
B2FLTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach foreign languages	15,060	14.07	15.23	12.98	6.65
B2FRPLRCNT	Most recent school, 4 yrs after BA completion: Percent free or reduced price lunch eligible	14,950	4.78	5.19	4.43	1.77
B2FTPTRCNT	Most recent job, within 4 yrs of BA: Full-time/part-time status	25,770	93.65	93.70	93.59	93.36
B2GENDER	Gender identity, as of the B&B:16/20 survey	26,250	99.45	99.51	99.35	99.20
B2GENMIN	Gender minority status, as of the B&B:16/20 survey	26,250	99.45	99.51	99.35	99.20
B2GMAT	Took GMAT, as of 4 yrs after BA	26,250	79.36	79.56	79.13	78.45
B2GRDEXM	Took a graduate or professional entrance exam, as of 4 yrs after BA	26,250	80.92	81.13	80.79	79.41

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2GRE	Took GRE, as of 4 yrs after BA	26,250	80.02	80.33	79.67	78.45
B2HAVEDEP4Y	Have any dependents, as of 4 yrs after BA	26,250	91.34	91.82	90.84	88.75
B2HHNOPAR	Household composition at age 16: Not living with parents or guardians	26,250	92.22	92.61	91.53	91.60
B2HHONEPAR	Household composition at age 16: Living with one parent or guardian	26,250	92.22	92.61	91.53	91.60
B2HHTWOPAR	Household composition at age 16: Living with two parents or guardians	26,250	92.22	92.61	91.53	91.60
B2HIBTMON	Highest degree enrollment, within 4 yrs of BA: Time to degree in months	12,290	92.34	92.66	92.70	85.65
B2HICDERMAJ	Highest degree enrollment, within 4 yrs of BA: Major or field of study (6-digit CIP code) - 2020 CIP	16,050	94.01	93.63	94.84	93.73
B2HICDERMAJ2010	Highest degree enrollment, within 4 yrs of BA: Major or field of study (6-digit CIP code) - 2010 CIP	16,050	94.01	93.63	94.84	93.73
B2HICDST	Highest degree enrollment, within 4 yrs of BA: Start date	16,050	97.84	98.14	97.73	94.57
B2HICMAJ	Highest degree enrollment, within 4 yrs of BA: Major or field of study (45 categories) - 2020 CIP	16,050	94.01	93.63	94.84	93.73
B2HICMAJ2010	Highest degree enrollment, within 4 yrs of BA: Major or field of study (45 categories) - 2010 CIP	16,050	94.01	93.63	94.84	93.73
B2HICMAJORS	Highest degree enrollment, within 4 yrs of BA: Major or field of study (10 categories) - 2020 CIP	16,050	94.01	93.63	94.84	93.73
B2HICMAJORS2010	Highest degree enrollment, within 4 yrs of BA: Major or field of study (10 categories) - 2010 CIP	16,050	94.01	93.63	94.84	93.73
B2HIDEG	Highest degree enrollment, within 4 yrs of BA: Degree type	16,050	95.48	95.73	96.00	88.93
B2HIDGASST	Highest degree enrollment, within 4 yrs of BA: Had assistantships or fellowships	16,050	83.07	83.09	84.22	75.67
B2HIDGEMPAID	Highest degree enrollment, within 4 yrs of BA: Used employer assistance	16,050	82.97	83.05	83.92	75.93
B2HIDGENST	Highest degree enrollment, within 4 yrs of BA: Enrollment intensity	16,050	95.90	96.10	95.88	93.48
B2HIDGFED	Highest degree enrollment, within 4 yrs of BA: Used federal student loans	16,050	97.16	97.24	97.24	95.72
B2HIDGGIFT	Highest degree enrollment, within 4 yrs of BA: Used personal loan or gift	16,050	82.97	83.05	83.98	75.67
B2HIDGGRANT	Highest degree enrollment, within 4 yrs of BA: Used grants or scholarships	16,050	83.16	83.24	84.14	76.02
B2HIDGIPDS	Highest degree enrollment, within 4 yrs of BA: IPEDS ID	15,840	98.90	99.14	98.74	96.89
B2HIDGONLIN	Highest degree enrollment, within 4 yrs of BA: Took online courses	16,050	83.21	83.18	84.43	76.06
B2HIDGOTHAID	Highest degree enrollment, within 4 yrs of BA: Used other financial aid type	16,050	83.02	83.11	84.02	75.70
B2HIDGOTHLN	Highest degree enrollment, within 4 yrs of BA: Used other student loans	16,050	66.19	65.98	67.03	63.67
B2HIDGPOCKET	Highest degree enrollment, within 4 yrs of BA: Used own money	16,050	83.15	83.19	84.24	75.68
B2HIDGPRIV	Highest degree enrollment, within 4 yrs of BA: Used private loans	16,050	83.00	83.06	84.04	75.67

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2HIDGSEC	Highest degree enrollment, within 4 yrs of BA: Institution sector	16,050	95.61	96.25	94.52	94.10
B2HIDGWRKSDY	Highest degree enrollment, within 4 yrs of BA: Had federal work-study	16,050	82.95	83.05	83.92	75.67
B2HIDLDATE	Highest degree enrollment, within 4 yrs of BA: Date of completion/last enrollment	16,050	97.89	97.78	98.18	97.55
B2HIERNDG	Highest degree enrollment, within 4 yrs of BA: Completed program	16,050	87.99	87.60	90.06	80.14
B2HIFACS	Highest degree enrollment, within 4 yrs of BA: Main factor in major or field of study choice	16,050	84.15	84.36	85.05	75.82
B2HIGRCNT	Most recent teaching job, 4 yrs after BA completion: Highest grade level taught	15,060	7.61	7.59	8.11	4.92
B2HINSRCNT	Most recent job, within 4 yrs of BA: Health insurance offered	24,930	95.73	96.09	95.32	93.95
B2HIONLINPROG	Highest degree enrollment, within 4 yrs of BA: Degree program entirely online	16,050	83.53	83.75	84.32	75.68
B2HISAMEINST	Highest degree enrollment, within 4 yrs of BA: Same institution as 2015-16 bachelor's degree institution	16,050	99.99	100.00	100.00	99.80
B2HISAMEMAJ	Highest degree enrollment, within 4 yrs of BA: Same major or field of study as 2015-16 bachelor's degree major or field of study	16,050	94.01	93.63	94.84	93.73
B2HISTMON	Highest degree enrollment, within 4 yrs of BA: Months between BA completion & start date of highest degree enrollment	16,050	97.84	98.14	97.73	94.57
B2HOMOWE	Amount owed on mortgage for primary residence, as of the B&B:16/20 survey	15,580	85.81	86.35	84.46	86.10
B2HOMVAL	Value of residence, as of the B&B:16/20 survey	15,580	85.64	86.02	84.78	85.56
B2HOTH	Household composition, as of the B&B:16/20 survey: Living with other types of individuals	26,250	91.98	92.44	91.17	91.19
B2HOUSE	Housing status, as of the B&B:16/20 survey	26,250	97.68	97.94	97.24	97.27
B2HPETCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach health/physical education	15,060	14.07	15.23	12.98	6.65
B2IDRAWARE	Ever heard of IDR plans, as of the B&B:16/20 student survey	18,850	53.67	55.01	53.30	43.73
B2IMPRCNT	Most recent job, within 4 yrs of BA: Satisfaction with importance of work	25,770	89.89	90.47	89.12	87.69
B2INCHO	Satisfaction with quality of undergraduate education, as of the B&B:16/20 survey	26,250	91.73	92.05	91.25	90.79
B2INCOM	Gross income in 2019	26,250	92.40	92.85	91.73	90.99
B2INCSP	Spouse or domestic partner's gross income in 2019	18,110	67.30	67.80	64.94	71.80
B2INDURCNT	Most recent employer, within 4 yrs of BA: Industry	25,770	92.46	92.87	91.74	91.75
B2INFLACCT	Teaching influences, 4 years after BA completion: Teacher accountability	14,250	12.84	14.59	10.71	4.38
B2INFLADV	Teaching influences, 4 yrs after BA completion: Possibilities for career advancement	14,250	12.86	14.62	10.72	4.38
B2INFLCONT	Teaching influences, 4 yrs after BA completion: Opportunity to contribute to society	14,250	12.82	14.61	10.61	4.38
B2INFLFIN	Teaching influences, 4 years after BA completion: Financial compensation	14,250	12.85	14.60	10.72	4.38

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2INFLKIDS	Teaching influences, 4 years after BA completion: Working with kids	14,250	12.86	14.62	10.72	4.38
B2INFLPRES	Teaching influences, 4 years after BA completion: Prestige of occupation	14,250	12.83	14.62	10.63	4.38
B2ITNTCH	Ever worked as an itinerant teacher, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89
B2JBGE4M	Ever held job for at least 4 months, within 4 yrs of BA	26,250	95.36	95.64	94.94	94.58
B2LANGS	Second language, as of the B&B:16/20 survey	26,250	92.61	92.93	92.03	92.27
B2LEVRCNT	Most recent school, 4 years after BA completion: Level	15,060	5.18	5.47	5.11	2.12
B2LFP4YR	Employment and enrollment status, as of 4 yrs after BA	26,250	87.67	87.91	87.42	86.45
B2LGBTQ	Sexual orientation, as of the B&B:16/20 survey	26,250	99.20	99.27	99.18	98.48
B2LICREQRCNT	Most recent job, within 4 yrs of BA: License required for work	25,770	92.47	92.79	91.92	91.74
B2LKCOL	Job search activities, within 4 yrs of BA: Talked to coworkers or mentors	23,240	91.42	91.80	90.96	89.70
B2LKEMA	Job search activities, within 4 yrs of BA: Used an employment agency	23,240	90.40	90.69	89.92	89.77
B2LKFAC	Job search activities, within 4 yrs of BA: Talked to faculty members or alumni	23,240	90.69	90.86	90.58	89.43
B2LKFAM	Job search activities, within 4 yrs of BA: Talked to friends or family members	23,240	92.30	92.74	91.68	90.57
B2LKINT	Job search activities, within 4 yrs of BA: Completed an internship	23,240	89.79	90.22	89.19	88.22
B2LKNWK	Job search activities, within 4 yrs of BA: Used a prof networking site/app	23,240	89.26	89.64	88.69	88.09
B2LKONL	Job search activities, within 4 yrs of BA: Searched online job postings	23,240	93.58	93.89	93.15	92.33
B2LKOTH	Job search activities, within 4 yrs of BA: Other	23,240	89.81	90.17	89.29	88.63
B2LNGCAR	Used non-English language in a job since BA completion, as of the B&B:16/20 survey	15,220	59.42	58.75	61.28	55.76
B2LNPAY	Current monthly payment on student loans, as of 2020	17,880	33.29	31.23	34.77	45.10
B2LOANLIT1	Loan literacy, as of the B&B:16/20 survey: Government can report unpaid debt to credit bureaus	26,250	88.83	89.48	87.52	88.64
B2LOANLIT2	Loan literacy, as of the B&B:16/20 survey: Government can garnish wages	26,250	88.83	89.48	87.52	88.64
B2LOANLIT3	Loan literacy, as of the B&B:16/20 survey: Government can retain tax or Social Security payments	26,250	88.83	89.48	87.52	88.64
B2LOANLITALL	Loan literacy, as of the B&B:16/20 survey: Correctly answered all three items	26,250	88.83	89.48	87.52	88.64
B2LOANLITTOT	Loan literacy, as of the B&B:16/20 survey: Number of correct responses	26,250	88.83	89.48	87.52	88.64
B2LOCRCNT	Most recent school, 4 years after BA completion: Locale	15,060	5.29	5.64	5.12	2.12
B2LOGRCNT	Most recent teaching job, 4 years after BA completion: Lowest grade level taught	15,060	6.46	6.56	6.71	3.79
B2LSAT	Took LSAT, as of 4 yrs after BA	26,250	79.43	79.69	79.07	78.51
B2LTSUB	Ever worked as a long-term substitute teacher, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2LVMAIN	Reasons left teaching, 4 years after BA completion: Main reason left teaching	11,530	9.51	9.87	9.43	5.71
B2MAEVAT	Enrollment & completion, within 4 yrs of BA: Master's degree program	16,050	93.07	93.37	93.58	86.03
B2MAIN1	Main disability condition/impairment, as of the B&B:16/20 survey	12,120	87.29	87.83	86.36	86.47
B2MAJCHO	Satisfaction with choice of undergraduate major, as of the B&B:16/20 survey	26,250	91.80	92.12	91.35	90.68
B2MAJORS4Y	Field of study: Undergraduate (10 categories)	26,250	99.84	99.81	99.91	99.76
B2MARCHA	Family status, as of 4 yrs after BA (considering only dependent children)	26,250	96.46	96.86	96.44	92.49
B2MARCHB	Family status, as of 4 yrs after BA (considering all dependents)	26,250	91.29	91.77	90.82	88.63
B2MARR	Marital status, as of the B&B:16/20 survey	26,250	95.71	95.14	96.46	97.97
B2MARR4Y	Marital status, as of 4 yrs after BA	26,250	99.62	99.65	99.58	99.54
B2MATTCRCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach math/computer science	15,060	14.10	15.23	13.07	6.65
B2MCAT	Took MCAT, as of 4 yrs after BA	26,250	79.30	79.50	79.06	78.42
B2MILIT	Military status, as of the B&B:16/20 survey	26,250	97.74	97.91	97.36	97.81
B2MONRCNT	Most recent employer, within 4 yrs of BA: Months worked	25,770	94.82	95.16	94.31	93.65
B2MTGAMT	Monthly rent or mortgage payment amount, as of the B&B:16/20 survey	26,250	92.47	92.75	92.11	91.38
B2NATIVE	Native language, as of the B&B:16/20 survey	26,250	97.86	97.91	97.80	97.67
B2NDCWK	Enrolled in non-degree coursework, within 4 yrs of BA	26,250	80.36	80.49	80.37	78.92
B2NEGOT	Ever negotiated salary/benefits, within 4 yrs of BA	26,250	92.49	92.72	92.04	92.28
B2NEMP	Spent time not working for pay and not enrolled, within 4 yrs of BA	26,250	90.67	91.09	89.90	90.08
B2NEMPBW	Spent time taking a break from work during non-working & non-enrollment spans, within 4 yrs of BA	16,270	72.84	73.81	70.71	73.13
B2NEMPCC	Spent time caring for children during non-working & non-enrollment spans, within 4 yrs of BA	16,270	72.46	73.39	70.25	73.57
B2NEMPCF	Spent time caring for family during non-working & non-enrollment spans, within 4 yrs of BA	16,270	72.25	73.22	70.12	72.67
B2NEMPHI	Spent time with personal health issues during non-working & non-enrollment spans, within 4 yrs of BA	16,270	72.25	73.15	70.19	73.00
B2NEMPLW	Spent time looking for work during non-working & non-enrollment spans, within 4 yrs of BA	16,270	75.21	76.06	73.32	75.56
B2NEMPSE	Spent time doing something else during non-working & non-enrollment spans, within 4 yrs of BA	16,270	73.13	74.34	70.57	73.19
B2NEWTCHPOS	Type of position held in education after leaving teaching position, 4 yrs after BA completion	11,530	9.51	9.87	9.43	5.71
B2NFCUM	Cumulative non-federal loans borrowed, 4 years after BA completion	26,250	62.33	62.14	62.83	61.93
B2NMONTCHRCNT	Most recent teaching job, 4 yrs after BA completion: Number of months worked per year	15,060	7.08	7.11	7.51	4.20

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2NSFARCNT	Most recent job, within 4 yrs of BA: Required a BA	25,770	92.25	92.58	91.72	91.40
B2NUMCRD	Number of credit cards, as of the B&B:16/20 survey	26,250	90.39	90.80	89.88	88.60
B2NUMDEP	Total number of dependents, as of 4 yrs after BA	26,250	91.34	91.82	90.84	88.75
B2NUMEMP	Number of employers, within 4 yrs of BA	26,250	90.83	90.89	90.75	90.63
B2NUMNCD	Number of non-child dependents, as of 4 yrs after BA	26,250	91.90	92.28	91.30	90.82
B2NUMSCH	Number of colleges, universities, or trade schools enrolled, within 4 yrs of BA	16,050	98.98	99.19	98.81	97.19
B2NUMSCHTCH	Number of schools taught at, 4 years after BA completion	15,060	7.20	7.22	7.66	4.33
B2OCC23RCNT	Most recent job, within 4 yrs of BA: Occupation, 23 categories	25,770	87.56	87.74	86.97	88.56
B2OCC33RCNT	Most recent job, within 4 yrs of BA: Occupation, 33 categories	25,770	87.04	87.24	86.46	87.84
B2OTHTCH	Ever worked as another teacher type, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89
B2OTREL	Household composition, as of the B&B:16/20 survey: Living with other relatives	26,250	91.98	92.44	91.17	91.19
B2PARIL	Household composition, as of the B&B:16/20 survey: Living with parents or in-laws	26,250	91.98	92.44	91.17	91.19
B2PAYRCNT	Most recent job, within 4 yrs of BA: Satisfaction with compensation	25,770	88.20	88.71	87.46	86.49
B2PAYSTAT	Current repayment status for student loans, as of the B&B:16/20 survey	23,420	58.92	57.50	60.83	63.56
B2PBCEVAT	Enrollment & completion, within 4 yrs of BA: Postbaccalaureate certificate program	16,050	95.70	95.69	96.40	91.32
B2PBENM48	Enrolled in a degree/certificate program, as of 4 yrs after BA	16,050	98.57	98.89	98.23	96.58
B2BPVAMT	Cumulative amt borrowed in private student loans for postbaccalaureate education, as of 4 yrs after BA	26,250	69.63	69.04	70.94	69.38
B2PCEMP	Percent of months employed, within 4 yrs of BA	26,250	86.63	87.19	85.65	85.74
B2PCOLF	Percent of months not in the labor force, within 4 yrs of BA	26,250	90.82	91.20	90.19	89.95
B2PCUNEM	Percent of months unemployed, within 4 yrs of BA	26,250	90.82	91.20	90.19	89.95
B2PDLVRCNT	Most recent job, within 4 yrs of BA: Paid vacation/holiday/sick leave offered	24,930	95.72	96.07	95.33	93.85
B2PIPLN	Teacher pipeline status, 4 years after BA completion	26,250	80.64	81.00	80.29	78.56
B2PLNVT	Planned to vote in 2020 presidential election	23,680	94.50	94.83	93.88	94.16
B2PMCEVAT	Enrollment & completion, within 4 yrs of BA: Post-master's certificate program	16,050	95.88	96.07	96.42	90.06
B2PMINRCNT	Most recent school, 4 years after BA completion: Percent minority	15,060	5.47	5.65	5.60	2.50
B2PRCOMMRCNT	Most recent teaching job, 4 yrs after BA completion: School leadership communicated type of school wanted	15,060	7.11	7.11	7.63	4.20
B2PRDISCIPRCNT	Most recent teaching job, 4 yrs after BA completion: School leadership enforced rules for student conduct	15,060	7.11	7.11	7.63	4.20
B2PREFTRCNT	Most recent job, within 4 yrs of BA: Prefer to work more hours	11,660	85.29	85.79	84.60	83.41

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2PREKTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach early childhood education (preK)	15,060	14.10	15.23	13.07	6.65
B2PRIVDEFCUR	Currently in default on private student loans, as of the B&B:16/20 survey	16,330	24.33	22.00	29.20	23.78
B2PRIVDFRCUR	Currently in deferment on private student loans for reasons other than COVID-19, as of the B&B:16/20 survey	16,330	24.33	22.00	29.20	23.78
B2PRIVDFRCVCUR	Currently in deferment on private student loans due to COVID-19, as of the B&B:16/20 survey	16,330	24.33	22.00	29.20	23.78
B2PRIVLN	Ever received private student loans, as of 4 yrs after BA	26,250	69.70	68.72	71.64	70.33
B2PRIVPAY	Current monthly payment on private student loans, as of the B&B:16/20 survey	15,340	13.98	12.17	18.37	10.59
B2PRIVPAYMISS	Missed payment on a private student loan in 12 months before the B&B:16/20 survey	15,340	14.29	12.37	18.94	10.76
B2PRIVPAYMORE	Made prepayment on private student loan in 12 months before the B&B:16/20 survey	15,340	14.33	12.44	18.93	10.74
B2PRIVPAYPCT	Current monthly payment on private student loans as percent of earnings, as of the B&B:16/20 survey	15,010	13.33	11.63	17.40	10.24
B2PRIVRPMTCUR	Currently in repayment on private student loans, as of the B&B:16/20 survey	16,330	24.33	22.00	29.20	23.78
B2PRIVSTAT	Current repayment status for private student loans, as of the B&B:16/20 survey	16,330	24.45	22.15	29.26	23.84
B2PROEVAT	Enrollment & completion, within 4 yrs of BA: Professional practice doctoral degree program	16,050	93.93	93.85	94.99	88.37
B2PRSUPPRCNT	Most recent teaching job, 4 yrs after BA completion: School leadership supported & encouraged staff	15,060	7.11	7.11	7.63	4.20
B2PUPRRCNT	Most recent school, 4 years after BA completion: Sector (public/private)	15,060	15.10	16.84	13.03	6.38
B2REGION	Region of residence, as of the B&B:16/20 survey	26,250	94.62	94.67	94.62	94.15
B2REGTCHST	Regular classroom teacher status within 4 years of BA completion	26,250	74.25	74.79	73.09	74.43
B2REGVT	Registered to vote, as of the B&B:16/20 survey	25,720	49.33	50.39	48.46	42.62
B2RESZIP	ZIP code of residence, as of the B&B:16/20 survey	26,250	94.62	94.67	94.62	94.15
B2RETEMP	Had an employer-based retirement account, as of the B&B:16/20 survey	26,250	92.29	92.43	92.27	91.02
B2RETIRE	Had retirement account, as of the B&B:16/20 survey	26,250	90.15	90.00	90.68	88.99
B2RETNON	Had a non-employer-based retirement account, as of the B&B:16/20 survey	26,250	86.98	86.52	88.18	85.79
B2RETRCNT	Most recent job, within 4 yrs of BA: Retirement plans offered	24,930	95.72	96.08	95.30	93.86
B2RPMTCUR	Currently in repayment on student loans, as of 2020	23,420	59.80	58.44	61.48	64.90
B2RSEMP	Reason for non-degree coursework, within 4 yrs of BA: Needed for employment	13,950	31.54	31.84	32.36	23.85
B2RSGOAL	Reason for non-degree coursework, within 4 yrs of BA: Career goals	13,950	32.86	33.05	34.31	22.75

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2RSLTED	Reason for non-degree coursework, within 4 yrs of BA: Education goals	13,950	31.67	31.82	33.05	22.38
B2RSOTH	Reason for non-degree coursework, within 4 yrs of BA: Other	13,950	30.97	31.14	32.23	22.16
B2RSPERS	Reason for non-degree coursework, within 4 yrs of BA: Personal enrichment	13,950	32.22	31.92	34.57	22.73
B2SAMESTATE	Ever employed in same state as bachelor's deg-granting institution, within 4 yrs of BA	25,910	75.78	74.71	76.96	81.24
B2SCITCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach natural sciences	15,060	14.10	15.23	13.07	6.65
B2SECETCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach general education (middle/secondary grades)	15,060	14.10	15.23	13.07	6.65
B2SECRCNT	Most recent job, within 4 yrs of BA: Satisfaction with job security	25,770	88.07	88.66	87.15	86.38
B2SEDTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach special education	15,060	14.10	15.23	13.07	6.65
B2SELLPO	Result of sale of all major possessions, as of the B&B:16/20 survey	26,250	91.35	91.75	90.77	90.01
B2SEX	Sex assigned at birth	26,250	100.00	100.00	100.00	100.00
B2SFRBFGF	Sharing financial responsibilities with boyfriend or girlfriend, as of the B&B:16/20 survey	26,250	88.55	88.43	88.58	89.71
B2SFRFRRM	Sharing financial responsibilities with friends or roommates, as of the B&B:16/20 survey	26,250	88.55	88.43	88.58	89.71
B2SFROTHERS	Sharing financial responsibilities with other types of individuals, as of the B&B:16/20 survey	26,250	88.55	88.43	88.58	89.71
B2SFRPARENTS	Sharing financial responsibilities with parents, as of the B&B:16/20 survey	26,250	88.55	88.43	88.58	89.71
B2SFRRELATIVES	Sharing financial responsibilities with a sibling, as of the B&B:16/20 survey	26,250	88.55	88.43	88.58	89.71
B2SFRSPOUSE	Sharing financial responsibilities with spouse or domestic partner, as of the B&B:16/20 survey	26,250	90.42	90.11	90.46	93.55
B2SINGP	Single parent, as of 4 yrs after BA	26,250	96.46	96.86	96.44	92.49
B2SMSTATERCNT	Most recent employer, within 4 yrs of BA: Located in the same state as BA-granting institution	25,770	93.17	93.64	92.63	90.95
B2SMSTR	Residence and BA degree institution in same state, as of the B&B:16/20 survey	26,080	94.56	94.62	94.52	94.08
B2SOCTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach social sciences	15,060	14.10	15.23	13.07	6.65
B2SPAMT	Spouse or domestic partner's student loan amt borrowed, as of the B&B:16/20 survey	16,910	67.06	67.58	65.44	68.92
B2SPCOL	Spouse or domestic partner attended college or grad school in 2019-20, as of the B&B:16/20 survey	18,110	76.24	76.32	74.61	81.58
B2SPEMP	Spouse or domestic partner employed in 2019	18,110	76.19	76.14	74.63	82.28
B2SPLNPY	Spouse or domestic partner's monthly payment on student loans, as of the B&B:16/20 survey	13,480	41.38	42.76	38.81	38.59

See notes at end of table.



**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2SPLV	Highest education attained by spouse or domestic partner, as of the B&B:16/20 survey	18,110	76.28	76.36	74.62	81.72
B2SPODP	Household composition, as of the B&B:16/20 survey: Living with spouse or domestic partner	26,250	91.98	92.44	91.17	91.19
B2SPOWE	Spouse or domestic partner's student loan amount owed, as of the B&B:16/20 survey	14,140	51.49	52.52	49.96	47.81
B2STCDERCNT	Most recent employer, within 4 yrs of BA: Employer state	25,500	96.09	96.40	95.76	94.45
B2STCDR	State of residence, as of the B&B:16/20 survey	26,250	94.62	94.67	94.62	94.15
B2STEMOCCRCNT	Most recent job, within 4 yrs of BA: Occupation is in STEM	25,770	85.45	85.80	84.63	85.92
B2STHRSRCNT	Most recent employer, within 4 yrs of BA: Average starting hours per week	25,770	92.22	92.61	91.66	90.95
B2STRESS	Did not meet essential expenses in past 12 months, as of the B&B:16/20 survey: Not due to COVID	26,250	97.12	97.19	97.15	96.24
B2STSALRCNT	Most recent employer, within 4 yrs of BA: Starting annualized pay	25,770	92.25	92.59	91.81	90.86
B2STSUB	Ever worked as a short-term substitute teacher, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89
B2STUTCH	Ever worked as a student teacher, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89
B2SUBGRE	Took GRE Subject Test, as of 4 yrs after BA	26,250	79.30	79.52	79.01	78.37
B2SUPTCH	Ever worked as a support teacher, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89
B2SUPVRCNT	Most recent job, within 4 yrs of BA: Supervises others	24,930	90.13	90.62	89.38	88.58
B2TCH AID	Ever worked as a teacher's aide, 4 years after BA completion	26,250	87.75	88.02	86.76	89.89
B2TCHGRT	Aware of TEACH Grant programs, as of B&B:16/20 survey	26,250	81.48	81.61	81.39	80.56
B2TCHLNFRGV	Awareness & participation in teacher loan forgiveness programs, as of B&B:16/20 survey	14,230	17.08	18.52	15.34	9.19
B2TCHMO	Number of months taught, 4 years after BA completion	13,010	39.19	42.15	34.25	32.08
B2TCHOCCRCNT	Most recent job, within 4 yrs of BA: Occupation is in teaching	25,770	85.30	85.72	84.37	85.59
B2TCHSTMY	Date first taught, 4 years after BA completion	15,210	24.14	25.81	22.49	13.85
B2TLCEVR	Ever allowed to work remotely for any jobs due to coronavirus pandemic, within 4 yrs of BA	19,100	82.80	84.16	80.73	80.02
B2TLCRCNT	Most recent job, within 4 yrs of BA: Allowed to work remotely	24,930	90.19	90.64	89.58	88.45
B2TOTCOMPDEG	Total number of degree programs completed, within 4 yrs of BA	16,050	96.60	96.58	97.08	93.90
B2TTLIRCNT	Most recent school, 4 years after BA completion: Title I eligible	14,950	4.77	5.19	4.43	1.77
B2UGPVLN	Ever had a private loan for undergraduate education, as of the B&B:16/20 survey	26,250	99.81	99.84	99.74	99.77
B2UNEMP	Received unemployment compensation not due to coronavirus pandemic, within 4 yrs of BA	26,250	98.08	98.12	98.06	97.81
B2UNEMPCV	Received unemployment compensation due to coronavirus pandemic, within 4 yrs of BA	20,440	98.21	98.38	98.04	97.37

See notes at end of table.

**Table K-1. Weighted item response rates using analysis weight WTB000 overall and by control of baccalaureate-granting institution: 2020—Continued**

Variable name	Variable label	Sample size	Weighted response rate by control of baccalaureate-granting institution			
			Overall	Public	Private nonprofit	Private for-profit
B2UNIONRCT	Most recent teaching job, 4 years after BA completion: Union representation	15,060	6.21	5.85	7.34	3.95
B2VLNTR	Volunteered in past 12 months, as of the B&B:16/20 survey	26,250	92.05	92.46	91.31	91.38
B2VLNTRHRS	Number of hours volunteered in past 12 months, as of the B&B:16/20 survey	26,250	91.60	92.11	90.75	90.60
B2VOCTCHCRT	Most recent teaching job, 4 yrs after BA completion: Taught & certified to teach vocational/career/technical education	15,060	14.10	15.23	13.07	6.65
B2VTNEL	Voted in 2020 election	25,640	52.36	53.33	51.67	45.75
B2WORTHG	Graduate education was worth the financial cost, as of the B&B:16/20 survey	15,050	85.31	86.70	84.04	75.35
B2WORTHUG	Undergraduate education worth the financial cost, as of the B&B:16/20 survey	26,250	91.72	91.99	91.37	90.61
B2WRK4YR	Ever employed for pay, within 4 yrs of BA	26,250	93.33	93.54	92.99	92.79
B2WYCVBEVR	Ever worked less than full time in any job due to the coronavirus pandemic, within 4 yrs of BA	19,100	88.04	88.64	87.00	87.79
B2WYCVRCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Coronavirus pandemic	10,570	84.62	85.51	83.77	80.70
B2WYFRRCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Family responsibility	11,660	85.05	85.51	84.48	82.94
B2WYMLJRCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Held more than one job	11,660	85.05	85.51	84.48	82.94
B2WYNJARCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Full-time not avail.	11,660	85.05	85.51	84.48	82.94
B2WYNOHRCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Didn't want more hours	11,660	85.05	85.51	84.48	82.94
B2WYOTHRCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Other reason	11,660	85.05	85.51	84.48	82.94
B2WYSCHRCNT	Most recent job within 4 yrs of BA: Why less than 30 hrs: Attending school	11,660	85.05	85.51	84.48	82.94
B2YR4HRSRCNT	Most recent employer, within 4 yrs of BA: Average ending/recent hours	25,770	93.65	93.70	93.59	93.36
B2YR4SALRCNT	Most recent employer, within 4 yrs of BA: Ending/recent annualized pay	25,770	90.26	90.74	89.79	87.48
B2ZIPRCNT	Most recent job, within 4 yrs of BA: Employer ZIP code	25,500	97.04	97.35	96.71	95.39
PAREduc	Parents' highest education level	26,250	81.39	81.32	80.50	86.47
RACE	Race/ethnicity (with multiple)	26,250	98.99	99.07	98.81	98.93

NOTE: BA = bachelor's degree; CIP = Classification of Instructional Programs; ESL = English as a second language; GMAT = Graduate Management Admission Test; GRE = Graduate Record Examinations; IDR = income-driven repayment; TEACH = Teacher Education Assistance for College and Higher Education. Item response rates were computed using analysis weight WTB000 (B&B:16/20 response). SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table K-2. Weighted mean values of continuous variables before and after imputation using analysis weight WTB000: 2020**

Variable	Variable label	Mean before imputation	Mean after imputation	Difference	Percent relative difference
B2AGEATBA	Age, as of BA completion	26.01	26.01	0.00	0.00
B2ALLHRS4YRS	Hours worked per week in all current jobs, as of 4 yrs after BA	40.41	40.32	0.09*	0.23
B2ALLINC4YRS	Annualized total pay for all current jobs, as of 4 yrs after BA	57,516.84	57,251.85	264.99	0.46
B2BADATMY	BA completion date	201,577.20	201,577.20	0.00	0.00
B2BATOPBA	Months between BA completion & first postbachelor's enrollment, within 4 yrs of BA	12.81	12.86	-0.05	-0.38
B2BORAMT3	Cumulative amt borrowed for undergrad & grad education, as of 4 yrs after BA	29,748.72	33,114.10	-3365.38*	-10.16
B2CARLOAN	Monthly vehicle loan or lease payment, as of the B&B:16/20 survey	222.12	221.83	0.30	0.13
B2CRDBAL	Credit card balance, as of the B&B:16/20 survey	2,290.68	2,311.81	-21.12	-0.91
B2CSTDYCR	Monthly child care costs, as of the B&B:16/20 survey	256.22	251.55	4.67	1.85
B2DEP2	Number of dependent children, as of 4 yrs after BA	0.32	0.32	-0.01*	-1.84
B2DEPAGEHIGH	Age of oldest dependent child, as of 4 yrs after BA	8.01	7.93	0.08	0.97
B2DEPAGELOW	Age of youngest dependent child, as of 4 yrs after BA	5.58	5.56	0.03	0.48
B2DFRFEDPAY	Current monthly payment postponed for federal student loans, as of 4 yrs after BA	261.46	266.42	-4.95*	-1.86
B2FEDPAY	Current monthly payment on federal student loans, as of 4 yrs after BA	221.62	234.90	-13.28*	-5.66
B2FRPLRCNT	Most recent school, 4 yrs after BA completion: Percent free or reduced price lunch eligible	50.02	49.37	0.65	1.31
B2HIBTMON	Highest degree enrollment, within 4 yrs of BA: Time to degree in months	22.79	22.76	0.03	0.13
B2HICDST	Highest degree enrollment, within 4 yrs of BA: Start date	201,711.90	201,711.60	0.31	0.00
B2HIDGIPDS	Highest degree enrollment, within 4 yrs of BA: IPEDS ID	197,147.20	197,026.00	121.20	0.06
B2HIDLDATE	Highest degree enrollment, within 4 yrs of BA: Date of completion/last enrollment	201,869.50	201,867.60	1.96*	0.00
B2HISTMON	Highest degree enrollment, within 4 yrs of BA: Months between BA completion & start date of highest degree enrollment	16.10	16.07	0.03	0.19
B2HOMOWE	Amount owed on mortgage for primary residence, as of the B&B:16/20 survey	180,393.90	182,849.00	-2455.11*	-1.34
B2HOMVAL	Value of residence, as of the B&B:16/20 survey	268,768.20	269,237.20	-468.93	-0.17
B2INCOM	Gross income in 2019	47,657.65	47,329.70	327.95*	0.69
B2INCSP	Spouse or domestic partner's gross income in 2019	50,164.17	49,707.71	456.46	0.92
B2LNPAY	Current monthly payment on student loans, as of 2020	327.74	328.18	-0.44	-0.13
B2MONRCNT	Most recent employer, within 4 yrs of BA: Months worked	26.13	26.00	0.13*	0.50
B2MTGAMT	Monthly rent or mortgage payment amount, as of the B&B:16/20 survey	992.06	1,002.17	-10.12*	-1.01
B2NMONTCHRCNT	Most recent teaching job, 4 yrs after BA completion: Number of months worked per year	9.95	10.07	-0.12	-1.17
B2NUMCRD	Number of credit cards, as of the B&B:16/20 survey	2.46	2.46	0.00	-0.01
B2NUMDEP	Total number of dependents, as of 4 yrs after BA	0.37	0.36	0.01*	1.79
B2NUMEMP	Number of employers, within 4 yrs of BA	2.31	2.36	-0.06*	-2.33
B2NUMNCD	Number of non-child dependents, as of 4 yrs after BA	0.04	0.04	0.00	1.78

See notes at end of table.

**Table K-2. Weighted mean values of continuous variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Mean before imputation	Mean after imputation	Difference	Percent relative difference
B2NUMSCH	Number of colleges, universities, or trade schools enrolled, within 4 yrs of BA	1.15	1.15	0.00	-0.04
B2NUMSCHTCH	Number of schools taught at, 4 years after BA completion	1.55	1.16	0.39*	33.81
B2BPVAMT	Cumulative amt borrowed in private student loans for postbaccalaureate education, as of 4 yrs after BA	754.08	1,488.07	-734.00*	-49.33
B2PCEMP	Percent of months employed, within 4 yrs of BA	79.05	78.82	0.24*	0.30
B2PCOLF	Percent of months not in the labor force, within 4 yrs of BA	9.52	9.78	-0.26*	-2.67
B2PCUNEM	Percent of months unemployed, within 4 yrs of BA	11.09	11.40	-0.31*	-2.74
B2PMINRCNT	Most recent school, 4 years after BA completion: Percent minority	48.45	52.53	-4.08	-7.77
B2PRIVPAY	Current monthly payment on private student loans, as of the B&B:16/20 survey	463.64	457.42	6.23	1.36
B2PRIVPAYPCT	Current monthly payment on private student loans as percent of earnings, as of the B&B:16/20 survey	74.97	132.20	-57.22	-43.29
B2STHRSRCNT	Most recent employer, within 4 yrs of BA: Average starting hours per week	35.32	35.28	0.04	0.12
B2STSALRCNT	Most recent employer, within 4 yrs of BA: Starting annualized pay	42,248.16	41,885.38	362.78*	0.87
B2TCHMO	Number of months taught, 4 years after BA completion	28.27	27.22	1.05*	3.85
B2TCHSTMY	Date first taught, 4 years after BA completion	201,643.20	201,654.40	-11.24*	-0.01
B2VLNTRHRS	Number of hours volunteered in past 12 months, as of the B&B:16/20 survey	15.41	15.64	-0.23	-1.49
B2YR4HR SRCNT	Most recent employer, within 4 yrs of BA: Average ending/recent hours	37.80	37.67	0.13*	0.36
B2YR4SALRCNT	Most recent employer, within 4 yrs of BA: Ending/recent annualized pay	52,319.45	51,725.35	594.10*	1.15

\*  $p < .05$ .

NOTE: Means were computed using the B&amp;B:16/20 final analysis weight. Cases with legitimate skips for the item are not included in the estimated means. The difference is computed as the unrounded mean before imputation minus the unrounded mean after imputation. The percent relative difference is computed as the difference divided by the unrounded mean after imputation and then multiplied by 100.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate &amp; Beyond Longitudinal Study (B&amp;B:16/20).

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2AAEVAT	Enrollment and completion, within 4 years of BA completion: Associate's degree program	0	Never enrolled in associate's degree program	94.73	93.54	1.19*	1.27
		1	Enrolled in associate's degree program	3.88	4.69	-0.81*	-17.25
		2	Completed associate's degree program	1.39	1.77	-0.38*	-21.62
B2ACCEPT	Most recent employer, within 4 years after BA: LGBT acceptance	1	Very accepting	70.95	70.96	-0.01	-0.01
		2	Somewhat accepting	23.93	24.04	-0.11	-0.48
		3	Not very accepting	3.99	3.89	0.11	2.74
		4	Not at all accepting	1.13	1.11	0.02	1.70
B2ACS16A	Disability, as of B&B:16/20 survey: Deaf or serious difficulty hearing,	0	No hearing impairment	99.08	99.09	-0.01*	-0.01
		1	Yes, have a hearing impairment	0.92	0.91	0.01*	0.86
B2ACS16B	Disability, as of B&B:16/20 survey: Blind or serious difficulty seeing	0	No blindness/ no visual impairment	99.11	99.12	-0.01*	-0.01
		1	Yes, have blindness/visually impairment	0.89	0.88	0.01*	1.01
B2ACS17A	Disability, as of B&B:16/20 survey: Serious difficulty remembering, concentrating, etc.	0	No cognitive function limitation	85.89	85.88	0.01	0.01
		1	Yes, have a cognitive function limitation	14.11	14.12	-0.01	-0.05
B2ACS17B	Disability, as of B&B:16/20 survey: Serious difficulty walking or climbing stairs	0	No mobility impairment	98.45	98.47	-0.02*	-0.02
		1	Yes, have a mobility impairment	1.55	1.53	0.02*	1.15
B2AFFADDLED	Education cost, as of B&B:16/20 survey: Pursued additional education	0	No	73.57	73.73	-0.16	-0.22
		1	Yes	26.43	26.27	0.16	0.62
B2AFFCHLD	Education cost, as of B&B:16/20 survey: Delayed having children	0	No	85.09	85.21	-0.12	-0.14
		1	Yes	14.91	14.79	0.12	0.80
B2AFFDLIED	Education cost, as of B&B:16/20 survey: Delayed enrolling for additional education	0	No	76.53	76.61	-0.09	-0.11
		1	Yes	23.47	23.39	0.09	0.37

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2AFFHOME	Education cost, as of B&B:16/20 survey: Delayed buying a home	0	No	71.62	71.73	-0.11	-0.16
		1	Yes	28.38	28.27	0.11	0.39
B2AFFLESS	Education cost, as of B&B:16/20 survey: Took a less desirable job	0	No	69.04	68.90	0.13	0.19
		1	Yes	30.96	31.10	-0.13	-0.42
B2AFFMARR	Education cost, as of B&B:16/20 survey: Delayed getting married	0	No	86.94	87.09	-0.16	-0.18
		1	Yes	13.06	12.91	0.16	1.21
B2AFFUNREL	Education cost, as of B&B:16/20 survey: Took job outside field of study	0	No	65.47	65.47	0.00	0.00
		1	Yes	34.53	34.53	0.00	0.00
B2AFFWKMR	Education cost, as of B&B:16/20 survey: Worked more than desired	0	No	64.73	64.98	-0.25	-0.39
		1	Yes	35.27	35.02	0.25	0.73
B2ALONE	Household composition, as of B&B:16/20 survey: Living alone	0	No	82.51	82.13	0.38*	0.46
		1	Yes	17.49	17.87	-0.38*	-2.11
B2APPLY	Ever applied for a preK through 12th-grade teaching position, 4 years after BA completion	0	Has not taught, has not applied, and has not considered teaching	57.20	57.64	-0.43	-0.75
		1	considered teaching	20.78	21.48	-0.70*	-3.28
		2	Has not taught, has applied, and has not been offered position	1.54	1.56	-0.02	-1.12
		3	Has not taught, has applied, and has been offered position	0.64	0.72	-0.08	-10.53
		4	Has taught at the preK–12 <sup>th</sup> grade level	19.84	18.61	1.23*	6.62

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2ARTTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach arts/music	0	Was not certified to teach and did not teach	92.97	96.50	-3.53*	-3.65
		1	Was not certified to teach and taught	2.47	1.68	0.79	47.04
		3	Was certified and taught	4.56	1.82	2.74*	150.19
B2AWFAM	Awareness of sexual orientation, as of B&B:16/20 survey: Among immediate family members	0	None	3.84	3.77	0.08	2.01
		1	Some	2.75	2.77	-0.02	-0.74
		2	Most	3.24	3.28	-0.04	-1.17
		3	All	90.17	90.18	-0.02	-0.02
B2AWSOC	Awareness of sexual orientation, as of B&B:16/20 survey: In social circle	0	None	1.75	1.78	-0.03	-1.57
		1	Some	3.96	3.95	0.01	0.26
		2	Most	7.11	7.06	0.05	0.70
		3	All	87.18	87.21	-0.03	-0.04
B2AWWRK	Awareness of sexual orientation, as of B&B:16/20 survey: At work	0	None	6.20	6.26	-0.06	-0.99
		1	Some	5.69	5.73	-0.04	-0.67
		2	Most	7.67	7.49	0.18*	2.38
		3	All	80.44	80.52	-0.08	-0.10
B2BAEVAT	Enrollment and completion, within 4 years of BA completion: Additional bachelor's degree program	0	Never enrolled in additional bachelor's degree program	91.59	88.67	2.92*	3.29
		1	Enrolled in additional bachelor's degree program	5.12	7.56	-2.45*	-32.35
		2	Completed additional bachelor's degree program	3.29	3.77	-0.47*	-12.59
B2BALRCNT	Most recent job, within 4 years of BA completion: Satisfaction with work-life balance	1	Dissatisfied	16.31	16.18	0.13	0.81
		2	Neither satisfied nor dissatisfied	15.78	15.76	0.02	0.12
		3	Satisfied	67.91	68.07	-0.15	-0.22

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2BENANYRCNT	Most recent job, within 4 years of BA completion: Employer offered benefits	0	No	11.94	11.94	0.00	-0.01
		1	Yes	88.06	88.06	0.00	0.00
B2BENRCNT	Most recent job, within 4 years of BA completion: Satisfaction with benefits	1	Dissatisfied	20.13	20.30	-0.17	-0.86
		2	Neither satisfied nor dissatisfied	18.09	17.99	0.11	0.60
		3	Satisfied	61.78	61.71	0.07	0.11
B2CARINDRCNT	Most recent job, within 4 years of BA completion: Part of a career	0	No	32.27	32.05	0.22	0.69
		1	Yes	67.73	67.95	-0.22	-0.33
B2CEREVAT	Enrollment and completion, within 4 years of BA completion: Undergraduate certificate or diploma program	0	Never enrolled in undergraduate certificate or diploma program	92.14	91.64	0.50*	0.55
		1	Enrolled in undergraduate certificate or diploma program	3.35	3.61	-0.26*	-7.30
		2	Completed undergraduate certificate or diploma program	4.51	4.75	-0.24*	-4.96
B2CHALRCNT	Most recent job, within 4 years of BA completion: Satisfaction with challenge of work	1	Dissatisfied	13.70	13.75	-0.04	-0.32
		2	Neither satisfied nor dissatisfied	20.54	20.57	-0.03	-0.16
		3	Satisfied	65.76	65.68	0.08	0.12
B2CHNGCVEVR	Ever laid off from any jobs due to the coronavirus pandemic, within 4 years of BA completion	0	No	96.57	96.29	0.28*	0.29
		1	Yes	3.43	3.71	-0.28*	-7.58
B2CHNGCVRcnt	Most recent job, within 4 years of BA completion: Laid off or terminated due to coronavirus pandemic	0	No	97.86	97.88	-0.03	-0.03
		1	Yes	2.10	2.12	0.03	1.26

See notes at end of table.



**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2CITZN	US citizenship status, as of B&B:16/20 survey	1	US citizen	96.09	96.13	-0.05*	-0.05
		2	Resident alien, permanent resident, or other eligible non-citizen; holds a temporary resident's card	2.13	2.10	0.04*	1.73
		3	Student visa, in the country on an F1 or F2 visa, or on a J1 or J2 exchange visitor visa	1.14	1.14	0.00	-0.12
		4	None of the above	0.64	0.63	0.01*	1.73
B2CLICENSE	Ever had professional certification or state or industry license, within 4 years of BA completion	0	No	61.06	64.73	-3.67*	-5.67
		1	Yes	38.94	35.27	3.67*	10.41
B2CONTEMP	Contributed to employer-based retirement account in past 12 months, as of B&B:16/20 survey	0	No	13.29	13.90	-0.61*	-4.42
		1	Yes	86.71	86.10	0.61*	0.71
B2CONTNON	Contributed to non-employer-based retirement account in past 12 months, as of B&B:16/20 survey	0	No	24.54	25.74	-1.21*	-4.69
		1	Yes	75.46	74.26	1.21*	1.62
B2CONTRET	Contributed to retirement account in past 12 months, as of B&B:16/20 survey	0	No	12.22	13.58	-1.35*	-9.97
		1	Yes	87.78	86.42	1.35*	1.57
B2COVBRKENR	Took a break in enrollment due to coronavirus pandemic, between January 2020 and June 2020	0	No	98.52	98.51	0.02	0.02
		1	Yes	1.48	1.49	-0.02	-1.01
B2COVONLIN	Took online courses due to coronavirus pandemic, between January 2020 and June 2020	0	No	48.25	48.24	0.01	0.02
		1	Yes	51.75	51.76	-0.01	-0.02

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2CRTELEM	Certification level, 4 years after BA completion: preK through 5th grade	0	No	40.52	41.01	-0.49	-1.20
		1	Yes	59.48	58.99	0.49	0.83
B2CRTHIGH	Certification level, 4 years after BA completion: 9th through 12th grade	0	No	48.42	47.82	0.60	1.25
		1	Yes	51.58	52.18	-0.60	-1.14
B2CRTMID	Certification level, 4 years after BA completion: 6th through 8th grade	0	No	43.13	43.83	-0.69	-1.58
		1	Yes	56.87	56.17	0.69	1.23
B2CRTPREK	Certification level, 4 years after BA completion: Early childhood education (preK)	0	No	73.79	74.49	-0.70	-0.94
		1	Yes	26.21	25.51	0.70	2.76
B2CURCRT	Certified to teach, 4 years after BA completion	0	No	15.00	59.07	-44.07*	-74.61
		1	Yes	85.00	40.93	44.07*	107.66
B2CURREGTCH	Currently working as a regular classroom teacher, 4 years after BA completion	0	No	18.94	11.53	7.41*	64.27
		1	Yes	81.06	88.47	-7.41*	-8.38
B2CVADDED	Results of the coronavirus pandemic, as of B&B:16/20 survey: Pursued additional education/training	0	No	86.38	86.34	0.03	0.04
		1	Yes	13.62	13.66	-0.03	-0.25
B2CVBRKEVR	Ever had a break in work due to the coronavirus pandemic, within 4 years of BA completion	0	No	92.45	92.47	-0.02	-0.02
		1	Yes	7.55	7.53	0.02	0.22
B2CVBRKRCNT	Most recent job, within 4 years of BA completion: Break in work due to coronavirus pandemic	0	No	94.17	94.22	-0.05	-0.05
		1	Yes	5.83	5.78	0.05	0.88

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2CVDLYHM	Results of the coronavirus pandemic, as of B&B:16/20 survey: Delayed buying a home	0	No	86.90	86.91	-0.01	-0.02
		1	Yes	13.10	13.09	0.01	0.10
B2CVDLYKIDS	Results of the coronavirus pandemic, as of B&B:16/20 survey: Delayed having children	0	No	92.53	92.59	-0.06	-0.07
		1	Yes	7.47	7.41	0.06	0.84
B2CVDLYMAR	Results of the coronavirus pandemic, as of B&B:16/20 survey: Delayed getting married	0	No	91.11	91.14	-0.03	-0.03
		1	Yes	8.89	8.86	0.03	0.34
B2CVFMRESP	Results of the coronavirus pandemic, as of B&B:16/20 survey: Took on additional family/child care	0	No	86.54	86.59	-0.05	-0.06
		1	Yes	13.46	13.41	0.05	0.38
B2CVLVEVR	Ever offered paid leave due to coronavirus pandemic, within 4 years of BA completion	0	No	58.13	58.16	-0.03	-0.06
		1	Yes	37.57	37.62	-0.05	-0.13
		2	Self-employed	4.30	4.22	0.08	2.00
B2CVLVRCNT	Most recent job, within 4 years of BA completion: Paid leave due to coronavirus pandemic offered	0	No	62.86	63.24	-0.38	-0.60
		1	Yes	37.14	36.76	0.38	1.03
B2CVNEMP	Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	0	No	99.46	99.45	0.01	0.01
		1	Yes	0.54	0.55	-0.01	-1.37
B2CVSTRESS	Did not meet essential expenses in past 12 months, as of B&B:16/20 survey: Due to COVID	0	Did meet expenses in past 12 months	89.30	89.24	0.06	0.07
		1	Did not meet expenses in past 12 months due to COVID	10.70	10.76	-0.06	-0.56

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2CVUNDESJB	Results of the coronavirus pandemic, as of B&B:16/20 survey: Took a less desirable job	0	No	91.82	91.89	-0.07	-0.07
		1	Yes	8.18	8.11	0.07	0.82
B2CVUNRJB	Results of the coronavirus pandemic, as of B&B:16/20 survey: Took a job outside of your field	0	No	92.00	92.08	-0.08*	-0.09
		1	Yes	8.00	7.92	0.08*	0.99
B2CVWKINST	Results of the coronavirus pandemic, as of B&B:16/20 survey: Delayed additional education	0	No	87.02	87.09	-0.07	-0.08
		1	Yes	12.98	12.91	0.07	0.51
B2CVWKLESS	Results of the coronavirus pandemic, as of B&B:16/20 survey: Worked less than desired	0	No	72.50	72.58	-0.09	-0.12
		1	Yes	27.50	27.42	0.09	0.32
B2CVWKMORE	Results of the coronavirus pandemic, as of B&B:16/20 survey: Worked more than desired	0	No	73.60	73.54	0.06	0.08
		1	Yes	26.40	26.46	-0.06	-0.22
B2DISABL	Received disability benefits, within 4 years of BA completion	0	No	96.73	96.72	0.00	0.00
		1	Yes	3.27	3.28	0.00	-0.12
B2DISABLE	Has some type of disability, as of B&B:16/20 survey	0	Not disabled	83.90	83.91	-0.01	-0.02
		1	Disabled	16.10	16.09	0.01	0.08
B2DISCRIM	Employment discrimination, as of B&B:16/20 survey: Overall	0	Never experienced discrimination at work	72.99	72.89	0.10	0.14
		1	Experienced discrimination at work	27.01	27.11	-0.10	-0.37
B2DISGEN	Employment discrimination, as of B&B:16/20 survey: Gender identity	0	Never experienced discrimination due to gender at work	95.39	95.33	0.06	0.06
		1	Experienced discrimination due to gender at work	4.61	4.67	-0.06	-1.21

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2DISLGBTQ	Employment discrimination, as of B&B:16/20 survey: Sexual orientation	0	Never experienced discrimination due to sexual orientation at work	96.99	97.08	-0.09	-0.09
		1	Experienced discrimination due to sexual orientation at work	3.01	2.92	0.09	3.07
B2DISNATION	Employment discrimination, as of B&B:16/20 survey: Nationality	0	Never experienced discrimination due to nationality at work	95.89	95.95	-0.06	-0.06
		1	Experienced discrimination due to nationality at work	4.11	4.05	0.06	1.48
B2DISRCETH	Employment discrimination, as of B&B:16/20 survey: Race/ethnicity	0	Never experienced discrimination at work due to ethnicity	86.85	86.78	0.07	0.08
		1	Experienced discrimination at work due to ethnicity	13.15	13.22	-0.07	-0.55
B2DISREL	Employment discrimination, as of B&B:16/20 survey: Religion	0	Never experienced discrimination due to religion at work	95.31	95.38	-0.07	-0.07
		1	Experienced discrimination due to religion at work	4.69	4.62	0.07	1.51
B2DISSEX	Employment discrimination, as of B&B:16/20 survey: Sex	0	Never experienced discrimination due to sex at work	82.57	82.57	0.00	0.00
		1	Experienced discrimination due to sex at work	17.43	17.43	0.00	0.00
B2DOCEVAT	Enrollment and completion, within 4 years of BA completion: Research doctoral degree program	0	Never enrolled in research doctoral degree program	93.37	93.31	0.07	0.07
		1	Enrolled in research doctoral degree program	6.50	6.54	-0.04	-0.65
		2	Completed research doctoral degree program	0.13	0.15	-0.02	-15.94
B2DONATE	Donated to 2015-16 BA-granting institution, as of B&B:16/20 survey	0	No	91.43	91.42	0.01	0.01
		1	Yes	8.57	8.58	-0.01	-0.08
B2DPNTS	Household composition, as of B&B:16/20 survey: Living with children or dependents	0	No	83.52	83.96	-0.44*	-0.53
		1	Yes	16.48	16.04	0.44*	2.77

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2EDUINDRCNT	Most recent employer, within 4 years of BA completion: Level of education industry	0	Employed, but not in education industry	83.04	83.02	0.02	0.03
		1	Preschool or preK	0.97	1.03	-0.05	-5.16
		2	K–12 school	8.65	8.66	-0.01	-0.16
		3	College, university, trade school, or other postsecondary institution	5.90	5.93	-0.02	-0.38
		4	Education support services (non-government)	0.54	0.50	0.03*	6.51
		5	Other	0.89	0.86	0.03	3.70
B2EEHIST	Employment and enrollment history, within 4 years of BA completion	1	Reported enrollment only	1.10	1.04	0.06*	5.91
		2	Reported employment only	57.91	58.13	-0.22	-0.38
		3	Reported both enrollment and employment	40.32	40.19	0.13	0.34
		4	Reported neither enrollment nor employment	0.67	0.64	0.03	4.16
B2EETCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach elementary education	0	Was not certified to teach and did not teach	70.64	85.79	-15.15*	-17.66
		1	Was not certified to teach and taught	19.35	9.15	10.20*	111.57
		2	Was certified to teach and did not teach	0.00	0.02	-0.02	-100.00
		3	Was certified and taught	10.01	5.05	4.96*	98.34
B2EMPSLF	Ever self-employed, within 4 years of BA completion	0	No	89.81	89.13	0.68*	0.77
		1	Yes	10.19	10.87	-0.68*	-6.29
B2EMPSLFRCNT	Most recent employer, within 4 years of BA completion: Self-employed	0	No	94.53	94.45	0.08	0.09
		1	Yes	5.47	5.55	-0.08	-1.46
B2EMPSTAT	Employment status considering all jobs, 4 years after BA completion	1	Employed full time	79.54	74.27	5.27*	7.09
		2	Employed part time	7.45	7.46	0.00	-0.06
		3	Out of the labor force	10.08	14.28	-4.20*	-29.41
		4	Unemployed	2.92	3.98	-1.06*	-26.66

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2EMPTYPRCNT	Most recent employer, within 4 years of BA completion: Type of employer	1	The school where you were enrolled	3.68	3.53	0.15*	4.31
		2	A for-profit company	49.90	50.10	-0.20	-0.40
		3	A nonprofit organization	14.81	14.98	-0.17	-1.13
		4	A local, state, or federal government	17.50	17.64	-0.14	-0.77
		5	The military	2.14	2.13	0.01	0.53
		6	Other	5.97	6.07	-0.10	-1.62
		7	Self-employed	5.99	5.55	0.44*	7.92
B2ENGTHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach English/language arts	0	Was not certified to teach and did not teach	76.40	88.56	-12.16*	-13.73
		1	Was not certified to teach and taught	10.19	5.67	4.52*	79.59
		3	Was certified and taught	13.41	5.76	7.64*	132.67
B2EPREPALT	Prepared to teach through an alternative entry program, as of the B&B:16/20 survey	0	No	98.19	97.42	0.77*	0.79
		1	Yes	1.81	2.58	-0.77*	-29.96
B2EPREPCOL	Prepared to teach at a college or university that provides certification, as of the B&B:16/20 survey	0	No	90.60	90.30	0.30	0.33
		1	Yes	9.40	9.70	-0.30	-3.10
B2EPREPCOMP	Prepared to teach through a student teaching assignment, as of the B&B:16/20 survey	0	No	93.44	93.51	-0.07	-0.07
		1	Yes	6.56	6.49	0.07	1.04
B2EPREPONL	Prepared to teach through an online-only certification program, as of the B&B:16/20 survey	0	No	98.04	97.30	0.74*	0.76
		1	Yes	1.96	2.70	-0.74*	-27.43
B2ESLTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach ESL	0	Was not certified to teach and did not teach	97.63	99.03	-1.40*	-1.41
		1	Was not certified to teach and taught	0.83	0.47	0.36	75.22
		3	Was certified and taught	1.54	0.50	1.04	207.89

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2ESTTCLG	Length of student teaching	1	4 weeks or less	5.79	5.16	0.63	12.22
		2	5-7 weeks	4.22	3.79	0.43	11.42
		3	8-11 weeks	16.21	15.23	0.97	6.39
		4	12 weeks or more	73.78	75.82	-2.04*	-2.69
B2EVERLK	Ever looked for work within 4 years of BA completion	0	No	19.79	19.08	0.71*	3.72
		1	Yes	80.21	80.92	-0.71*	-0.88
B2EVRASST	Ever used assistantships or fellowships for post-BA degree, as of B&B:16/20 student survey	0	No	78.62	81.63	-3.00*	-3.68
		1	Yes	21.38	18.37	3.00*	16.35
B2EVRCRT	Ever certified to teach, 4 years after BA completion	0	No	94.59	93.18	1.41*	1.51
		1	Yes	5.41	6.82	-1.41*	-20.69
B2EVRDEF	Ever defaulted on student loans, as of 2020	0	No	91.22	91.23	-0.01	-0.01
		1	Yes	8.78	8.77	0.01	0.09
B2EVREMPAID	Ever used employer assistance for post-BA degree, as of B&B:16/20 student survey	0	No	80.93	82.89	-1.96*	-2.36
		1	Yes	19.07	17.11	1.96*	11.44
B2EVRENRLFP	Enrolled at private for-profit institution, within 4 years of BA completion	0	No	91.55	91.78	-0.23*	-0.25
		1	Yes	8.45	8.22	0.23*	2.81
B2EVRGIFT	Ever used personal loan or gift for post-BA degree, as of B&B:16/20 student survey	0	No	82.85	84.49	-1.64*	-1.94
		1	Yes	17.15	15.51	1.64*	10.59
B2EVRGRANT	Ever used grants or scholarships for post-BA degree, as of B&B:16/20 student survey	0	No	60.10	59.05	1.05	1.78
		1	Yes	39.90	40.95	-1.05	-2.57
B2EVRGRDENR	Enrolled in a graduate degree program, within 4 years of BA completion	0	No	15.37	16.24	-0.86*	-5.32
		1	Yes	84.63	83.76	0.86*	1.03

See notes at end of table.



**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2EVROTHAID	Ever used other financial aid for post-BA degree, as of B&B:16/20 student survey	0	No	89.09	89.22	-0.13	-0.15
		1	Yes	10.91	10.78	0.13	1.22
B2EVROTHLN	Ever used other student loans for post-BA degree, as of B&B:16/20 student survey	0	No	93.10	92.96	0.14	0.15
		1	Yes	6.90	7.04	-0.14	-1.99
B2EVRPOCKET	Ever used own money for post-BA degree, as of B&B:16/20 student survey	0	No	34.55	35.15	-0.60	-1.71
		1	Yes	65.45	64.85	0.60	0.93
B2EVRPRIVDEF	Ever defaulted on private student loans, as of B&B:16/20 student survey	0	No	91.56	91.88	-0.33	-0.36
		1	Yes	8.44	8.12	0.33	4.02
B2EVRPRIVPIF	Ever paid off a private student loan, as of B&B:16/20 student survey	0	No	79.94	78.58	1.36	1.73
		1	Yes	20.06	21.42	-1.36	-6.34
B2EVRREGTCH	Worked as a regular classroom teacher, within 4 years of BA completion	0	No	95.94	84.64	11.30*	13.35
		1	Yes	4.06	15.36	-11.30*	-73.55
B2EVRTCH	Ever taught at preK through 12th-grade level, within 4 years of BA completion	0	No	80.59	81.39	-0.81*	-0.99
		1	Yes	19.41	18.61	0.81*	4.34
B2EVRUGENR	Enrolled in an undergraduate degree program, within 4 years of BA completion	0	No	76.98	75.81	1.17*	1.54
		1	Yes	23.02	24.19	-1.17*	-4.84
B2EVRVT	Ever voted in any election, as of B&B:16/20 survey	0	No	4.93	5.49	-0.56*	-10.22
		1	Yes	95.07	94.51	0.56*	0.59
B2EVRWRKSDY	Ever had work-study for post-BA degree, as of B&B:16/20 student survey	0	No	95.72	95.78	-0.06	-0.06
		1	Yes	4.28	4.22	0.06	1.46

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2EXPEVR	Highest level of education ever expected to complete, as of the B&B:16/20 survey	4	Bachelor's degree	40.26	39.80	0.46*	1.17
		5	Graduate level courses, no graduate degree or certificate expected	2.10	2.13	-0.03	-1.56
		6	Postbaccalaureate certificate	1.34	1.26	0.08*	6.26
		7	Master's degree	36.75	36.53	0.22	0.61
		8	Post-master's certificate	2.34	2.35	-0.01	-0.40
		9	Doctoral degree, research/scholarship	10.08	10.44	-0.35*	-3.40
		10	Professional doctoral degree	7.12	7.49	-0.37*	-4.91
B2FAMLNHLP	Family or friends helping to repay loans, within the 12 months before the B&B:16/20 student survey	0	No	87.15	86.83	0.32	0.37
		1	Yes, occasionally	5.81	6.14	-0.33*	-5.37
		2	Yes, usually	7.04	7.04	0.01	0.12
B2FEDPAYMISS	Missed payment on a federal student loan in 12 months before the B&B:16/20 student survey	0	All payments were made on time	81.97	82.37	-0.40	-0.49
		1	Yes, missed 1 to 2 payments	6.74	6.82	-0.07	-1.05
		2	Yes, missed 3 or more payments	11.28	10.81	0.48	4.40
B2FEDPAYMORE	Made prepayment on federal student loan in 12 months before the B&B:16/20 student survey	0	No, have not paid more than the minimum amount	56.73	57.54	-0.81	-1.40
		1	Yes, paid more than the minimum amount 1 or 2 times	14.05	13.96	0.09	0.62
		2	Yes, paid more than the minimum amount 3 or more times	29.22	28.50	0.72	2.53
B2FEDPAYPLAN	Current repayment plan for federal student loans, 4 years after bachelor's degree	1	Not in repayment	77.89	72.27	5.62*	7.78
		2	Standard Repayment	9.58	11.16	-1.58*	-14.12
		3	Graduated Repayment	2.89	3.39	-0.50*	-14.77
		4	Income-based Repayment	7.67	9.83	-2.16*	-21.98
		5	Alternative Repayment	1.60	1.95	-0.35*	-18.12
		6	Enrolled in multiple types of repayment plans	0.38	1.41	-1.03*	-73.17

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2FEDPAYPLAN_INC	Currently enrolled in an IDR plan for federal student loans, 4 years after bachelor's degree	0	No, not currently in income-based repayment plan	14.18	17.17	-2.99*	-17.43
		1	Yes, currently in income-based repayment plan	8.56	10.56	-2.00*	-18.95
		2	Not in repayment	77.26	72.27	4.99*	6.91
B2FIN2000	Respondent's confidence in ability to come up with \$2,000 within the next month, as of B&B:16/20 survey	1	Certainly could come up with \$2,000	63.35	63.01	0.34*	0.54
		2	Probably could come up with \$2,000	20.74	20.85	-0.11	-0.53
		3	Probably could not come up with \$2,000	8.85	9.10	-0.24*	-2.66
		4	Certainly could not come up with \$2,000	7.06	7.05	0.01	0.15
B2FLTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach foreign languages	0	Was not certified to teach and did not teach	97.92	99.10	-1.18*	-1.19
		1	Was not certified to teach and taught	0.40	0.30	0.09	29.99
		3	Was certified and taught	1.69	0.60	1.09*	181.71
B2FTPTRCNT	Most recent job, within 4 years of BA completion: Full-time/part-time status	0	Worked part time	14.43	14.87	-0.44*	-2.96
		1	Worked full time	85.57	85.13	0.44*	0.52
B2GENDER	Gender identity, as of B&B:16/20 survey	1	Male	42.12	42.08	0.04	0.09
		2	Female	56.57	56.58	-0.01	-0.02
		3	Transgender: Male-to-female	0.03	0.04	-0.01	-20.59
		4	Transgender: Female-to-male	0.07	0.07	0.00	-3.00
		5	Genderqueer or gender nonconforming	0.51	0.50	0.00*	0.56
		6	A different gender identity	0.11	0.11	0.00*	0.56
		7	Questioning or unsure	0.09	0.09	0.00*	0.56
		8	More than one gender	0.50	0.52	-0.02	-4.67
B2GENMIN	Gender minority status, as of B&B:16/20 survey	0	Not a gender minority	98.28	98.25	0.03	0.03
		1	Gender minority	1.72	1.75	-0.03	-1.92
B2GMAT	Took GMAT, 4 years after BA completion	0	No	97.41	97.51	-0.09	-0.09
		1	Yes	2.59	2.49	0.09	3.71

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2GRDEXM	Took a graduate or professional entrance exam, 4 years after BA completion	0	No	74.04	75.10	-1.06*	-1.41
		1	Yes	25.96	24.90	1.06*	4.25
B2GRE	Took GRE, 4 years after BA completion	0	No	84.06	84.49	-0.43*	-0.51
		1	Yes	15.94	15.51	0.43*	2.77
B2HAVEDEP4Y	Have any dependents, 4 years after BA completion	0	No dependents	79.28	79.63	-0.35*	-0.44
		1	Child dependents only	18.13	17.72	0.41*	2.33
		2	Non-child dependents only	1.26	1.25	0.02	1.43
		3	Child and non-child dependents	1.32	1.40	-0.08	-5.84
B2HHNOPAR	Household composition at age 16: Not living with parents or guardians	0	No	91.24	91.03	0.21	0.23
		1	Yes	8.76	8.97	-0.21	-2.33
B2HHONEPAR	Household composition at age 16: Living with one parent or guardian	0	No	78.70	78.54	0.16	0.20
		1	Yes	21.30	21.46	-0.16	-0.75
B2HHTWOPAR	Household composition at age 16: Living with two parents or guardians	0	No	30.06	30.43	-0.37*	-1.21
		1	Yes	69.94	69.57	0.37*	0.53
B2HICMAJORS	Highest degree enrollment, within 4 years of BA completion: major or field of study (10 categories) – 2020 CIP	1	Computer and information sciences	3.99	3.83	0.16*	4.24
		2	Engineering and engineering technology	4.48	4.43	0.05	1.06
		3	Biological and physical science, science technology, math, and agriculture	8.19	8.21	-0.02	-0.26
		4	General studies and other	1.59	1.70	-0.12	-7.00
		5	Social sciences	7.06	7.28	-0.22	-2.96
		6	Humanities	4.84	4.75	0.09	1.91
		7	Health care fields	24.86	24.93	-0.07	-0.26
		8	Business	16.04	15.82	0.22	1.36
		9	Education	12.46	12.63	-0.17	-1.37
		10	Other applied	16.50	16.42	0.08	0.48

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2HICMAJORS2010	Highest degree enrollment, within 4 years of BA completion: Major or field of study (10 categories) – 2010 CIP	1	Computer and information sciences	3.21	3.10	0.12*	3.73
		2	Engineering and engineering technology	4.48	4.43	0.05	1.06
		3	Biological and physical science, science technology, math, and agriculture	7.53	7.56	-0.03	-0.41
		4	General studies and other	2.45	2.51	-0.07	-2.69
		5	Social sciences	7.06	7.28	-0.22	-2.96
		6	Humanities	4.81	4.72	0.09	1.89
		7	Health care fields	25.47	25.52	-0.06	-0.23
		8	Business	16.04	15.82	0.22	1.36
		9	Education	12.46	12.63	-0.17	-1.37
		10	Other applied	16.50	16.42	0.08	0.48
B2HIDEG	Highest degree enrollment, within 4 years of BA completion: Degree type	1	Undergraduate certificate or diploma	4.56	4.67	-0.11	-2.29
		2	Associate's degree	3.54	4.18	-0.64*	-15.26
		3	Bachelor's degree	7.27	7.39	-0.12	-1.61
		4	Postbaccalaureate certificate	4.21	4.19	0.02	0.36
		5	Master's degree	59.23	58.36	0.87*	1.49
		6	Post-master's certificate	1.20	1.18	0.02	2.04
		7	Doctoral degree—professional practice	11.70	11.72	-0.02	-0.21
		8	Doctoral degree—research/scholarship	6.30	6.26	0.04	0.64
		9	Doctoral degree—other	1.98	2.04	-0.06	-3.04
B2HIDGASST	Highest degree enrollment, within 4 years of BA completion: Had assistantships or fellowships	0	No	86.87	87.24	-0.37	-0.43
		1	Yes	13.13	12.76	0.37	2.91
B2HIDGEMPAID	Highest degree enrollment, within 4 years of BA completion: Used employer assistance	0	No	87.27	87.62	-0.35	-0.40
		1	Yes	12.73	12.38	0.35	2.80
B2HIDGENST	Highest degree enrollment, within 4 years of BA completion: Enrollment intensity	1	Full-time	65.95	66.00	-0.05	-0.07
		2	Part-time	25.66	25.65	0.00	0.00
		3	Equal mix of full time and part time	8.39	8.35	0.04	0.53

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2HIDGFED	Highest degree enrollment, within 4 years of BA completion: Used federal student loans	0	No	51.33	51.33	-0.01	-0.02
		1	Yes	48.67	48.67	0.01	0.02
B2HIDGGIFT	Highest degree enrollment, within 4 years of BA completion: Used personal loan or gift	0	No	88.75	89.43	-0.68*	-0.76
		1	Yes	11.25	10.57	0.68*	6.47
B2HIDGGRANT	Highest degree enrollment, within 4 years of BA completion: Used grants or scholarships	0	No	71.66	70.39	1.26*	1.79
		1	Yes	28.34	29.61	-1.26*	-4.26
B2HIDGONLIN	Highest degree enrollment, within 4 years of BA completion: Took online courses	0	No	41.36	43.30	-1.95*	-4.50
		1	Yes	58.64	56.70	1.95*	3.43
B2HIDGOTHAID	Highest degree enrollment, within 4 years of BA completion: Used other financial aid type	0	No	93.31	93.11	0.20	0.21
		1	Yes	6.69	6.89	-0.20	-2.90
B2HIDGOTHLN	Highest degree enrollment, within 4 years of BA completion: Used other student loans	0	No	93.84	93.98	-0.15	-0.16
		1	Yes	6.16	6.02	0.15	2.45
B2HIDGPOCKET	Highest degree enrollment, within 4 years of BA completion: Used own money	0	No	49.16	47.80	1.36*	2.84
		1	Yes	50.84	52.20	-1.36*	-2.60
B2HIDGPRIV	Highest degree enrollment, within 4 years of BA completion: Used private loans	0	No	92.59	91.62	0.97*	1.06
		1	Yes	7.41	8.38	-0.97*	-11.62
B2HIDGSEC	Highest degree enrollment, within 4 years of BA completion: Institution sector	1	Public 4-year institution	49.95	49.92	0.04	0.08
		2	Private nonprofit 4-year institution	36.96	36.84	0.12	0.31
		3	Public 2-year institution	5.15	5.33	-0.18*	-3.44
		4	Private for-profit institution	7.63	7.56	0.06	0.84
		5	Other institution	0.31	0.34	-0.03	-9.60

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2HIDGWRKSDY	Highest degree enrollment, within 4 years of BA completion: Had federal work-study	0	No	97.45	97.54	-0.10	-0.10
		1	Yes	2.55	2.46	0.10	3.93
B2HIERNDG	Highest degree enrollment, within 4 years of BA completion: Completed program	0	No	51.34	54.14	-2.80*	-5.18
		1	Yes	48.66	45.86	2.80*	6.12
B2HIFACS	Highest degree enrollment, within 4 years of BA completion: Main factor in major or field of study choice	1	Required for career path	35.54	36.06	-0.52	-1.45
		2	Aptitude in the field	18.29	18.88	-0.58	-3.10
		3	Earnings potential	15.58	14.91	0.67*	4.48
		4	Ability to contribute to society	25.54	25.26	0.28	1.11
		5	Ability to balance work and family	5.05	4.89	0.16	3.26
B2HIGRCNT	Most recent teaching job, 4 years after BA completion: Highest grade level taught	1	Pre-kindergarten	10.56	8.96	1.60	17.88
		2	Kindergarten	5.14	3.11	2.03	65.21
		3	First grade	3.08	3.46	-0.38	-10.92
		4	Second grade	4.29	2.80	1.49	53.01
		5	Third grade	5.14	4.08	1.06	25.92
		6	Fourth grade	7.08	8.82	-1.74	-19.70
		7	Fifth grade	10.33	8.47	1.86	22.00
		8	Sixth grade	4.73	4.21	0.52	12.24
		9	Seventh grade	2.21	3.11	-0.90	-28.98
		10	Eighth grade	18.59	16.16	2.43	15.04
		11	Ninth grade	2.81	1.90	0.91	47.72
		12	Tenth grade	2.01	3.11	-1.10	-35.24
		13	Eleventh grade	2.71	3.66	-0.95	-26.07
		14	Twelfth grade	21.32	28.14	-6.82	-24.24
B2HINSRCNT	Most recent job, within 4 years of BA completion: Health insurance offered	0	No	16.77	17.65	-0.88*	-4.99
		1	Yes	83.23	82.35	0.88*	1.07

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2HIONLINPROG	Highest degree enrollment, within 4 years of BA completion: Degree program entirely online	0	No	71.48	68.84	2.63*	3.82
		1	Yes	28.52	31.16	-2.63*	-8.45
B2HISAMEINST	Highest degree enrollment, within 4 years of BA completion: Same institution as 2015-16 bachelor's degree institution	0	No	70.98	70.97	0.01	0.01
		1	Yes	29.02	29.03	-0.01	-0.02
B2HISAMEMAJ	Highest degree enrollment, within 4 years of BA completion: Same major or field of study as 2015-16 bachelor's degree major or field of study	0	No	55.91	57.59	-1.67*	-2.90
		1	Yes	44.09	42.41	1.67*	3.94
B2HOTH	Household composition, as of B&B:16/20 survey: Living with other types of individuals	0	No	82.61	82.20	0.42*	0.51
		1	Yes	17.39	17.80	-0.42*	-2.33
B2HOUSE	Housing status, as of B&B:16/20 survey	1	Pay mortgage	26.98	26.97	0.00	0.02
		2	Pay rent	54.38	54.43	-0.06	-0.11
		3	Own home outright	2.67	2.64	0.04*	1.38
		4	None of the above	14.79	14.79	0.00	0.01
		5	More than one housing status	1.18	1.16	0.02*	1.35
B2HPETCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach health/physical education	0	Was not certified to teach and did not teach	95.53	97.59	-2.06*	-2.11
		1	Was not certified to teach and taught	1.48	1.27	0.21	16.20
		3	Was certified and taught	2.99	1.14	1.85*	162.37
B2IDRAWARE	Ever heard of IDR plans, as of the B&B:16/20 student survey	0	Had not heard of income-driven repayment (IDR) plans	41.17	40.18	0.99	2.45
		1	Yes, heard of income-driven repayment (IDR) plans	58.83	59.82	-0.99	-1.65

See notes at end of table.



**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2IMPRCNT	Most recent job, within 4 years of BA completion: Satisfaction with importance of work	1	Dissatisfied	12.29	12.26	0.03	0.26
		2	Neither satisfied nor dissatisfied	17.55	17.61	-0.06	-0.32
		3	Satisfied	70.15	70.13	0.02	0.04
B2INCHO	Satisfaction with quality of undergraduate education, as of B&B:16/20 survey	1	Very satisfied	37.29	37.31	-0.03	-0.07
		2	Satisfied	44.90	44.96	-0.05	-0.12
		3	Neither satisfied nor dissatisfied	11.26	11.17	0.09	0.85
		4	Dissatisfied	4.96	4.97	-0.01	-0.27
		5	Very dissatisfied	1.58	1.59	0.00	-0.14
B2INDURCNT	Most recent employer, within 4 years of BA completion: Industry	1	Education	17.05	16.98	0.06	0.37
		2	Health care, social assistance, or child care	21.46	21.28	0.18	0.87
		3	Retail sales	8.65	8.72	-0.07	-0.78
		4	Public administration, government, and public safety	5.44	5.41	0.02	0.44
		5	Professional, scientific, and technical services	13.46	13.52	-0.06	-0.43
		6	Food service and accommodation	3.99	4.03	-0.05	-1.13
		7	Financial and insurance	7.84	7.88	-0.03	-0.44
		8	Other	22.12	22.18	-0.06	-0.29
B2INFLACCT	Teaching influences, 4 years after BA completion: Teacher accountability	1	Negative influence	15.50	16.15	-0.66	-4.06
		2	No influence	32.14	29.78	2.36	7.94
		3	Positive influence	52.36	54.07	-1.71	-3.16
B2INFLADV	Teaching influences, 4 years after BA completion: Possibilities for career advancement	1	Negative influence	8.29	7.80	0.49	6.26
		2	No influence	53.07	53.14	-0.07	-0.13
		3	Positive influence	38.64	39.06	-0.42	-1.08

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2INFLCONT	Teaching influences, 4 years after BA completion: Opportunity to contribute to society	1	Negative influence	0.33	0.15	0.18	116.23
		2	No influence	5.08	4.43	0.65	14.57
		3	Positive influence	94.59	95.42	-0.82	-0.86
B2INFLFIN	Teaching influences, 4 years after BA completion: Financial compensation	1	Negative influence	41.74	41.80	-0.06	-0.14
		2	No influence	42.42	44.11	-1.69	-3.84
		3	Positive influence	15.84	14.09	1.75	12.43
B2INFLKIDS	Teaching influences, 4 years after BA completion: Working with kids	1	Negative influence	1.20	1.27	-0.07	-5.48
		2	No influence	6.82	6.96	-0.14	-1.99
		3	Positive influence	91.98	91.77	0.21	0.23
B2INFLPRES	Teaching influences, 4 years after BA completion: Prestige of occupation	1	Negative influence	11.79	11.80	-0.01	-0.09
		2	No influence	51.05	53.26	-2.20	-4.13
		3	Positive influence	37.16	34.94	2.21	6.33
B2ITNTCH	Ever worked as an itinerant teacher, 4 years after BA completion	0	Never worked as an itinerant teacher	99.91	99.80	0.10*	0.10
		1	Worked as an itinerant teacher	0.09	0.20	-0.10*	-52.33
B2JBGE4M	Ever held job for at least 4 months, within 4 years of BA completion	0	No	2.71	2.62	0.08*	3.18
		1	Yes	97.29	97.38	-0.08*	-0.09
B2LANGS	Second language, as of B&B:16/20 survey	0	Do not know second language American Sign Language or other sign language	67.41	67.24	0.17	0.26
		1	Arabic	0.62	0.69	-0.07	-9.52
		2	Bengali	0.32	0.30	0.02*	7.17
		3	Chinese	0.04	0.03	0.00	7.97
		4	French or Canadian French	1.29	1.35	-0.06	-4.23
		5	German	1.87	2.00	-0.13	-6.51
		6	Greek (ancient)	1.11	1.20	-0.09	-7.12
		7	Greek (modern)	0.01	0.01	0.00	7.97
8		0.12	0.11	0.01*	7.97		

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2LANGS—Continued		9	Hebrew (Biblical)	0.05	0.05	0.00*	7.97
		10	Hebrew (modern)	0.18	0.18	0.00	-1.21
		11	Hindi	0.18	0.18	0.00	0.42
		12	Italian	0.44	0.41	0.02*	5.22
		13	Japanese	0.44	0.45	-0.01	-2.66
		14	Javanese	0.01	0.01	0.00	7.97
		15	Korean	0.41	0.39	0.01	2.85
		16	Latin	0.04	0.04	0.00	1.54
		17	Malay	0.03	0.02	0.00	7.97
		18	Marathi	0.01	0.00	0.00	7.97
		19	Portuguese	0.18	0.20	-0.02	-9.19
		20	Punjabi	0.12	0.13	-0.01	-5.40
		21	Russian	0.22	0.22	-0.01	-2.77
		22	Spanish	11.33	11.60	-0.27*	-2.30
		23	Swahili	0.10	0.10	0.00	-2.11
		24	Tamil	0.04	0.04	0.00	6.46
		25	Telugu	0.01	0.01	0.00	7.97
		26	Turkish	0.06	0.05	0.00*	7.97
		27	Urdu	0.18	0.17	0.01	5.43
		28	Vietnamese	0.28	0.30	-0.02	-7.91
29	English	11.37	10.90	0.47*	4.33		
99	Other	1.54	1.60	-0.06	-3.80		
B2LEVRCNT	Most recent school, 4 years after BA completion: Level	1	Elementary	64.47	43.56	20.91*	48.00
		2	Secondary	25.78	31.46	-5.68	-18.06
		3	Combined	9.75	24.98	-15.23*	-60.96
B2LFP4YR	Employment and enrollment status, 4 years after BA completion	1	Employed only	75.15	70.33	4.81*	6.84
		2	Employed and enrolled	11.84	11.40	0.44*	3.86
		3	Enrolled only	5.16	5.80	-0.64*	-11.03
		4	Unemployed	2.52	3.47	-0.96*	-27.58
		5	Not in the labor force	5.33	8.99	-3.66*	-40.67

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2LGBTQ	Sexual orientation, as of B&B:16/20 survey	1	Lesbian or gay, that is homosexual	3.50	3.50	-0.01	-0.20
		2	Straight, that is heterosexual	88.83	88.84	0.00	0.00
		3	Bisexual	5.36	5.36	0.00	0.07
		4	Another sexual orientation	1.55	1.54	0.01	0.35
		5	Questioning or unsure	0.76	0.76	0.00	0.20
B2LICREQRCNT	Most recent job, within 4 years of BA completion: License required for work	0	No	78.86	78.79	0.07	0.09
		1	Yes	21.14	21.21	-0.07	-0.35
B2LKCOL	Job search activities, within 4 years of BA completion: Talked to coworkers or mentors	0	No	45.83	45.65	0.18	0.40
		1	Yes	54.17	54.35	-0.18	-0.34
B2LKEMA	Job search activities, within 4 years of BA completion: Used an employment agency	0	No	73.65	73.49	0.16	0.22
		1	Yes	26.35	26.51	-0.16	-0.61
B2LKFAC	Job search activities, within 4 years of BA completion: Talked to faculty members or alumni	0	No	67.07	66.66	0.41*	0.62
		1	Yes	32.93	33.34	-0.41*	-1.24
B2LKFAM	Job search activities, within 4 years of BA completion: Talked to friends or family members	0	No	30.56	30.76	-0.20	-0.64
		1	Yes	69.44	69.24	0.20	0.28
B2LKINT	Job search activities, within 4 years of BA completion: Completed an internship	0	No	84.31	84.17	0.14	0.17
		1	Yes	15.69	15.83	-0.14	-0.90
B2LKNWK	Job search activities, within 4 years of BA completion: Used a prof networking site/app	0	No	50.45	50.16	0.29	0.58
		1	Yes	49.55	49.84	-0.29	-0.59
B2LKONL	Job search activities, within 4 years of BA completion: Searched online job postings	0	No	6.12	6.20	-0.08	-1.25
		1	Yes	93.88	93.80	0.08	0.08

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2LKOTH	Job search activities, within 4 years of BA completion: Other	0	No	88.62	88.78	-0.16	-0.18
		1	Yes	11.38	11.22	0.16	1.44
B2LNGCAR	Used non-English language in a job since BA completion, as of B&B:16/20 survey	0	Did not use other (non-English) language in job(s) since completing BA	42.60	40.68	1.93*	4.73
		1	Used other (non-English) language in job(s) since completing BA	57.40	59.32	-1.93*	-3.25
B2LOANLIT1	Loan literacy, as of B&B:16/20 survey: Government can report unpaid debt to credit bureaus	0	No, cannot report debt past due to credit bureaus	33.24	33.22	0.02	0.05
		1	Yes, can report debt past due to credit bureaus	66.76	66.78	-0.02	-0.03
B2LOANLIT2	Loan literacy, as of B&B:16/20 survey: Government can garnish wages	0	No, cannot have employer withhold money	52.94	53.00	-0.06	-0.11
		1	Yes, can have employer withhold money	47.06	47.00	0.06	0.12
B2LOANLIT3	Loan literacy, as of B&B:16/20 survey: Government can retain tax or Social Security payments	0	No, cannot retain tax refunds until debt is repaid	44.60	44.83	-0.23	-0.52
		1	Yes, can retain tax refunds until debt is repaid	55.40	55.17	0.23	0.43
B2LOANLITALL	Loan literacy, as of B&B:16/20 survey: Correctly answered all three items	0	No, did not answer all three items correctly	62.09	62.18	-0.09	-0.15
		1	Yes, answered all three items correctly	37.91	37.82	0.09	0.24
B2LOANLITTOT	Loan literacy, as of B&B:16/20 survey: Number of correct responses	0	Zero	22.16	22.23	-0.07	-0.30
		1	One	24.37	24.42	-0.05	-0.20
		2	Two	15.57	15.54	0.02	0.14
		3	Three	37.91	37.82	0.09	0.24

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2LOCRCNT	Most recent school, 4 years after BA completion: Locale	1	City, large	21.35	26.01	-4.65	-17.90
		2	City, mid-size	6.17	6.38	-0.21	-3.24
		3	City, small	7.55	6.40	1.14	17.82
		4	Suburb, large	27.95	30.85	-2.90	-9.41
		5	Suburb, mid-size	3.93	2.38	1.55	65.09
		6	Suburb, small	0.82	1.65	-0.82	-50.04
		7	Town, fringe	1.32	2.10	-0.78	-37.09
		8	Town, distant	3.69	3.81	-0.12	-3.04
		9	Town, remote	3.83	2.51	1.31	52.18
		10	Rural, fringe	12.82	10.44	2.38	22.82
		11	Rural, distant	6.91	5.08	1.83	36.03
		12	Rural, remote	3.66	2.38	1.27	53.35
B2LOGRCNT	Most recent teaching job, 4 years after BA completion: Lowest grade level taught	1	Pre-kindergarten	10.43	18.03	-7.60*	-42.15
		2	Kindergarten	12.85	11.68	1.17	9.98
		3	First grade	7.67	5.60	2.07	36.98
		4	Second grade	4.08	2.58	1.51*	58.54
		5	Third grade	4.77	4.80	-0.02	-0.47
		6	Fourth grade	5.93	8.15	-2.22	-27.23
		7	Fifth grade	8.03	5.49	2.54	46.33
		8	Sixth grade	13.96	8.96	5.00*	55.80
		9	Seventh grade	5.91	5.54	0.37	6.69
		10	Eighth grade	5.80	2.92	2.88	98.72
		11	Ninth grade	17.45	19.84	-2.39	-12.02
		12	Tenth grade	1.92	4.70	-2.78*	-59.16
		13	Eleventh grade	0.76	1.34	-0.58	-43.44
		14	Twelfth grade	0.44	0.39	0.06	14.28
B2LSAT	Took LSAT, 4 years after BA completion	0	No	97.30	97.19	0.11	0.11
		1	Yes	2.70	2.81	-0.11	-3.86
B2LTSUB	Ever worked as a long-term substitute teacher, 4 years after BA completion	0	Never worked as a long-term substitute teacher	98.73	97.42	1.31*	1.35
		1	Worked as a long-term substitute teacher	1.27	2.58	-1.31*	-50.82

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2LVMAIN	Reasons left teaching, 4 years after BA completion: Main reason left teaching	1	Left classroom teaching but remained in education	12.69	13.81	-1.12	-8.10
		2	Left to pursue another career or to enroll in school	26.63	29.97	-3.34	-11.14
		3	Laid off/involuntarily transferred due to pandemic	5.92	4.95	0.97	19.66
		4	Laid off/involuntarily transferred not due to pandemic	4.19	3.40	0.79	23.24
		5	Did not obtain or maintain license	1.40	3.48	-2.08	-59.81
		6	Dissatisfied with teaching	16.07	13.80	2.27	16.48
		7	Completed a temporary or long-term substitute position	2.93	2.94	-0.01	-0.23
		8	Personal reasons	20.39	17.42	2.97*	17.07
		9	Another reason not listed	9.76	10.23	-0.46	-4.53
B2MAEVAT	Enrollment and completion, within 4 years of BA completion: Master's degree program	0	Never enrolled in master's degree program	35.64	35.30	0.34	0.96
		1	Enrolled in master's degree program	27.37	28.81	-1.45*	-5.02
		2	Completed master's degree program	37.00	35.89	1.11*	3.09
B2MAIN1	Main disability condition/impairment, as of B&B:16/20 survey	1	Blindness or visual impairment	2.43	2.96	-0.53*	-17.95
		2	Hearing impairment	4.10	3.87	0.23*	5.96
		3	Orthopedic or mobility impairment	6.61	6.35	0.25	3.98
		4	Speech or language impairment	0.92	0.87	0.04	5.04
		5	Anxiety	23.26	23.72	-0.46	-1.94
		6	ADHD	27.12	26.58	0.55	2.05
		7	Autism	1.11	1.06	0.05	5.03
		8	Depression	21.53	21.33	0.20	0.96
		9	Learning disability	1.51	1.40	0.10*	7.44
		10	TBI	1.05	0.97	0.08*	7.80
		11	Other	10.35	10.87	-0.52	-4.78
B2MAJCHO	Satisfaction with choice of undergraduate major, as of B&B:16/20 survey	1	Very satisfied	37.12	37.14	-0.02	-0.07
		2	Satisfied	37.12	37.17	-0.05	-0.14
		3	Neither satisfied nor dissatisfied	14.56	14.52	0.03	0.24
		4	Dissatisfied	8.64	8.63	0.01	0.11
		5	Very dissatisfied	2.56	2.53	0.03	1.24

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2MAJORS4Y	Field of study: Undergraduate (10 categories)	1	Computer and information sciences	3.41	3.48	-0.06	-1.80
		2	Engineering and engineering technology	6.22	6.21	0.01*	0.16
		3	Biological and physical science, science technology, math, and agriculture	12.20	12.18	0.02*	0.16
		4	General studies and other	2.30	2.32	-0.02	-0.83
		5	Social sciences	14.63	14.65	-0.02	-0.13
		6	Humanities	10.13	10.12	0.02*	0.16
		7	Health care fields	11.50	11.48	0.01*	0.12
		8	Business	19.86	19.83	0.03*	0.14
		9	Education	4.65	4.64	0.01*	0.15
		10	Other applied	15.09	15.08	0.01	0.04
B2MARCHA	Family status, 4 years after BA completion (considering only dependent children)	1	Unmarried, no dependent children	65.13	64.91	0.23*	0.35
		2	Unmarried with dependent children	5.71	5.87	-0.16*	-2.76
		3	Married, no dependent children	16.09	15.97	0.12	0.74
		4	Married with dependent children	13.07	13.25	-0.18*	-1.38
B2MARCHB	Family status, 4 years after BA completion (considering all dependents)	1	Unmarried, no dependent children	62.89	63.99	-1.10*	-1.72
		2	Unmarried with dependent children	6.79	6.79	0.01	0.13
		3	Married, no dependent children	16.38	15.64	0.74*	4.73
		4	Married with dependent children	13.93	13.58	0.35*	2.58
B2MARR	Marital status, as of B&B:16/20 survey	1	Single, never married	52.53	52.98	-0.44*	-0.84
		2	Married	31.88	31.54	0.34*	1.07
		3	Separated	0.79	0.80	0.00	-0.18
		4	Divorced	3.63	3.58	0.05	1.34
		5	Widowed	0.27	0.26	0.01*	4.48
		6	Living with partner in a marriage-like relationship	10.90	10.85	0.05	0.45
B2MARR4Y	Marital status, 4 years after BA	1	Single	66.62	66.67	-0.06*	-0.08
		2	Married	29.28	29.23	0.06*	0.19
		3	Separated	0.65	0.65	0.00*	0.38
		4	Divorced	3.30	3.30	0.00	-0.09
		5	Widowed	0.15	0.15	0.00*	0.38

See notes at end of table.



**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2MATTCRCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach math/computer science	0	Was not certified to teach and did not teach	73.73	89.19	-10.46*	-11.73
		1	Was not certified to teach and taught	9.40	5.04	4.35*	86.36
		3	Was certified and taught	11.87	5.77	6.11*	105.83
B2MCAT	Took MCAT, 4 years after BA completion	0	No	97.04	97.12	-0.07	-0.07
		1	Yes	2.96	2.88	0.07	2.50
B2MILIT	Military status, as of B&B:16/20 survey	0	None	94.31	94.43	-0.13*	-0.14
		1	Veteran	4.11	4.02	0.09*	2.31
		2	Active Duty	0.86	0.85	0.02*	2.31
		3	Reserves	0.36	0.35	0.01*	2.31
		4	National Guard	0.36	0.35	0.01*	2.31
B2NATIVE	Native language, as of B&B:16/20 survey	0	English	89.24	89.10	0.14	0.15
		1	American Sign Language or other sign language	0.06	0.05	0.00	2.19
		2	Arabic	0.32	0.31	0.01*	2.19
		3	Bengali	0.07	0.08	-0.01	-17.35
		4	Chinese	1.45	1.46	-0.01	-0.74
		5	French or Canadian French	0.24	0.23	0.00*	1.81
		6	German	0.12	0.12	0.00*	2.19
		8	Greek (modern)	0.01	0.01	0.00	2.19
		10	Hebrew (modern)	0.03	0.04	-0.01	-36.25
		11	Hindi	0.23	0.23	0.00	-2.03
		12	Italian	0.04	0.04	0.00	2.19
		13	Japanese	0.07	0.07	0.00	-1.83
		14	Javanese	0.00	0.00	0.00	2.19
		15	Korean	0.48	0.47	0.01*	2.19
17	Malay	0.01	0.01	0.00	2.19		
18	Marathi	0.00	0.00	0.00	2.19		
19	Portuguese	0.21	0.21	0.00*	2.19		
20	Punjabi	0.05	0.05	0.00	2.19		
21	Russian	0.25	0.24	0.01*	2.19		

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2NATIVE—Continued		22	Spanish	4.53	4.67	-0.14*	-3.03
		23	Swahili	0.06	0.06	0.00*	2.19
		24	Tamil	0.02	0.02	0.00	2.19
		25	Telugu	0.02	0.02	0.00	2.19
		26	Turkish	0.01	0.01	0.00	2.19
		27	Urdu	0.20	0.19	0.00*	2.19
		28	Vietnamese	0.32	0.33	-0.01	-1.70
		99	Other	1.97	1.96	0.01	0.62
B2NDCWK	Enrolled in non-degree coursework, within 4 years of BA completion	0	No	86.95	87.78	-0.83*	-0.94
		1	Yes	13.05	12.22	0.83*	6.78
B2NEGOT	Ever negotiated salary/benefits, within 4 years of BA completion	0	No	68.03	68.13	-0.10	-0.15
		1	Yes	31.97	31.87	0.10	0.31
B2NEMP	Spent time not working for pay and not enrolled, within 4 years of BA completion	0	No	63.87	64.27	-0.39*	-0.61
		1	Yes	36.13	35.73	0.39*	1.10
B2NEMPBW	Spent time taking a break from work during non-working and non-enrollment spans, within 4 years of BA completion	0	No	66.85	66.84	0.01	0.01
		1	Yes	33.15	33.16	-0.01	-0.02
B2NEMPCC	Spent time caring for children during non-working and non-enrollment spans, within 4 years of BA completion	0	No	85.75	86.55	-0.80*	-0.93
		1	Yes	14.25	13.45	0.80*	5.98
B2NEMPCF	Spent time caring for family during non-working and non-enrollment spans, within 4 years of BA completion	0	No	88.87	88.97	-0.10	-0.11
		1	Yes	11.13	11.03	0.10	0.92
B2NEMPHI	Spent time with personal health issues during non-working and non-enrollment spans, within 4 years of BA completion	0	No	89.10	89.10	0.00	0.00
		1	Yes	10.90	10.90	0.00	0.03

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2NEMPLW	Spent time looking for work during non-working and non-enrollment spans, within 4 years of BA completion	0	No	33.17	33.43	-0.27	-0.79
		1	Yes	66.83	66.57	0.27	0.40
B2NEMPSE	Spent time doing something else during non-working and non-enrollment spans, within 4 years of BA completion	0	No	61.11	61.63	-0.52	-0.85
		1	Yes	38.89	38.37	0.52	1.37
B2NEWTCHPOS	Type of position held in education after leaving teaching position, 4 years after BA completion	0	Left classroom teaching and did not remain in education	87.31	86.19	1.12	1.30
		1	District leader	3.06	2.25	0.81	36.05
		2	School leader	0.01	0.02	-0.01	-36.81
		3	Academic school specialist	1.22	0.87	0.35	40.54
		4	Other school specialist	1.67	3.74	-2.07	-55.47
		5	Other position	6.73	6.94	-0.20	-2.92
B2NSFARCNT	Most recent job, within 4 years of BA completion: Required a BA	0	No	41.72	41.61	0.11	0.26
		1	Yes	58.28	58.39	-0.11	-0.19
B2OCC23RCNT	Most recent job, within 4 years of BA completion: Occupation, 23 categories	1	Management occupations	9.71	9.75	-0.04	-0.45
		2	Business and financial operation occupations	11.40	11.36	0.04	0.33
		3	Computer and mathematical occupations	7.13	7.16	-0.03	-0.42
		4	Architectural and engineering occupations	4.74	4.73	0.01	0.18
		5	Life, physical, and social science occupations	3.46	3.33	0.13*	3.98
		6	Community and social services occupations	4.91	4.93	-0.03	-0.52
		7	Legal occupations	1.65	1.61	0.04	2.74
		8	Education, training, and library occupations	11.84	11.78	0.06	0.50
		9	Arts, design, entertainment, sports, and media occupations	5.75	5.65	0.10	1.83

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference		
B2OCC23RCNT— Continued		10	Health care practitioners and technical occupations	11.00	10.36	0.64*	6.19		
		11	Health care support occupations	2.98	3.19	-0.21*	-6.66		
		12	Protective service occupations	1.58	1.82	-0.25*	-13.46		
		13	Food prep and serving related occupations	2.07	2.25	-0.18*	-8.04		
		14	Building, grounds, cleaning, and maintenance occupations	0.38	0.44	-0.06	-13.59		
		15	Personal care and service occupations	1.96	2.13	-0.16	-7.61		
		16	Sales and related occupations	5.96	5.90	0.05	0.91		
		17	Office and administrative support occupations	8.12	8.18	-0.05	-0.65		
		18	Farming, fishing, and forestry occupations	0.32	0.37	-0.05	-13.26		
		19	Construction and extraction occupations	0.58	0.58	-0.01	-1.05		
		20	Installation, maintenance, and repair occupations	0.66	0.66	-0.01	-0.90		
		21	Production occupations	1.51	1.51	0.00	-0.06		
		22	Transportation and material moving occupations	1.65	1.64	0.01	0.84		
		23	Military specific occupations	0.65	0.67	-0.02	-2.72		
		B2OCC33RCNT	Most recent job, within 4 years of BA completion: Occupation, 33 categories	1	Agriculture occupations	0.47	0.50	-0.04	-7.66
				2	Air transportation professional	0.18	0.17	0.00	2.80
				3	Artists and designers	3.29	3.27	0.02	0.57
				4	Business managers	9.39	9.44	-0.05	-0.53
				5	Business occupations (non-management)	10.86	10.83	0.03	0.29
				6	Business and legal support (non-secretarial)	7.91	7.98	-0.07	-0.85
				7	Communication professionals	2.06	1.95	0.11*	5.55
				8	Computer and information systems occupations	6.43	6.46	-0.03	-0.43
				9	Construction and mining occupations	0.58	0.58	0.00	-0.46
10	Engineering technicians			0.81	0.81	0.00	0.46		
11	Engineers			4.01	3.97	0.04	0.99		
12	Fitters, tradesmen, and mechanics			2.14	2.15	-0.01	-0.64		
13	Food service occupations			2.32	2.51	-0.19*	-7.57		

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference		
B2OCC33RCNT— Continued		14	Health care professional (non-nurses)	1.90	1.75	0.15*	8.70		
		15	Information professionals	0.50	0.54	-0.05	-8.46		
		16	Legal professionals	0.89	0.84	0.05	6.02		
		17	Life scientists	1.41	1.36	0.05	3.97		
		18	Math-related occupations	0.73	0.70	0.02	3.46		
		19	Military occupations	0.61	0.67	-0.06	-8.62		
		20	Nurses	6.62	6.18	0.44*	7.18		
		21	Other educators	4.39	4.44	-0.06	-1.31		
		22	Other health care occupations	5.49	5.62	-0.13	-2.39		
		23	Personal care occupations	1.66	1.84	-0.18*	-9.80		
		24	Physical scientists	1.08	1.04	0.04	4.34		
		25	PK–12 educators	6.19	6.00	0.19*	3.24		
		26	Postsecondary educators	1.03	1.10	-0.08	-6.90		
		27	Protective service occupations	1.59	1.82	-0.24*	-12.95		
		28	Sales occupations	5.97	5.90	0.07	1.16		
		29	Secretaries and administrative assistants	1.81	1.88	-0.07	-3.64		
		30	Social scientists	0.87	0.83	0.04	5.25		
		31	Social service professionals	5.08	5.10	-0.03	-0.49		
		32	Sports occupations	0.41	0.43	-0.02	-3.62		
		33	Transportation support occupations	1.34	1.33	0.00	0.34		
		B2OHTCH	Ever worked as another teacher type, 4 years after BA completion	0	Never worked as other type of teacher	98.77	96.46	2.31*	2.40
				1	Worked as other type of teacher	1.23	3.54	-2.31*	-65.26
		B2OTREL	Household composition, as of B&B:16/20 survey: Living with other relatives	0	No	93.91	93.90	0.01	0.01
				1	Yes	6.09	6.10	-0.01	-0.14
		B2PARIL	Household composition, as of B&B:16/20 survey: Living with parents or in-laws	0	No	84.27	84.25	0.02	0.02
				1	Yes	15.73	15.75	-0.02	-0.12
		B2PAYRCNT	Most recent job, within 4 years of BA completion: Satisfaction with compensation	1	Dissatisfied	26.40	26.64	-0.24	-0.91
				2	Neither satisfied nor dissatisfied	14.44	14.48	-0.03	-0.22
				3	Satisfied	59.16	58.88	0.28	0.47

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2PAYSTAT	Current repayment status for student loans, as of 2020	1	All paid off, never defaulted	1.48	1.18	0.30*	25.01
		2	All paid off, defaulted	0.03	0.02	0.00	18.57
		3	Still owe, not currently in repayment	63.22	62.99	0.23	0.36
		4	Still owe, (in repayment) all loans in good standing	32.23	32.66	-0.43	-1.32
		5	Still owe, at least one loan in default	3.05	3.14	-0.10	-3.14
B2PBCEVAT	Enrollment and completion, within 4 years of BA completion: Postbaccalaureate certificate program	0	Never enrolled in postbaccalaureate certificate program	93.22	92.98	0.24	0.26
		1	Enrolled in postbaccalaureate certificate program	2.66	2.78	-0.13	-4.56
		2	Completed postbaccalaureate certificate program	4.13	4.24	-0.11	-2.68
B2PBENM48	Enrolled, 4 years after BA completion	0	No	58.13	58.27	-0.13	-0.23
		1	Yes	41.87	41.73	0.13	0.32
B2PDLVRCNT	Most recent job, within 4 years of BA completion: Paid vacation/holiday/sick leave offered	0	No	16.54	17.49	-0.95*	-5.43
		1	Yes	83.46	82.51	0.95*	1.15
B2PIPLN	Teacher pipeline status, 4 years after BA completion	0	Has not taught, has not prepared, and has not considered teaching	52.78	52.58	0.20	0.38
		1	Has not taught, has not prepared, and has considered teaching	24.33	25.77	-1.44*	-5.58
		2	Has not taught, has prepared, and is not certified	2.86	2.96	-0.10	-3.44
		3	Has not taught, has prepared, and is certified	0.10	0.08	0.01	16.87
		4	Has taught at the preK–12 <sup>th</sup> grade level	19.93	18.61	1.33*	7.13
B2PLNVT	Planned to vote in 2020 election	0	No, do not plan to vote	7.64	7.53	0.12	1.55
		1	Yes, plan to vote	90.59	90.73	-0.14*	-0.15
		2	Already voted by absentee ballot or early voting	1.77	1.74	0.02	1.18

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2PMCEVAT	Enrollment and completion, within 4 years of BA completion: Post-master's certificate program	0	Never enrolled in post-master's certificate program	98.71	98.73	-0.02	-0.02
		1	Enrolled in post-master's certificate program	0.61	0.59	0.03*	4.30
		2	Completed post-master's certificate program	0.67	0.68	-0.01	-0.91
B2PRCOMMRCNT	Most recent teaching job, 4 years after BA completion: School leadership communicated type of school wanted	1	Strongly disagree	4.05	3.34	0.70	21.09
		2	Disagree	7.41	6.73	0.69	10.21
		3	Neither agree nor disagree	11.15	13.55	-2.40	-17.73
		4	Agree	36.27	35.51	0.76	2.14
		5	Strongly agree	41.12	40.87	0.25	0.62
B2PRDISCIPRCNT	Most recent teaching job, 4 years after BA completion: School leadership enforced rules for student conduct	1	Strongly disagree	5.54	5.86	-0.33	-5.59
		2	Disagree	14.34	12.06	2.27	18.84
		3	Neither agree nor disagree	17.31	15.86	1.45	9.17
		4	Agree	29.08	31.10	-2.02	-6.49
		5	Strongly agree	33.73	35.11	-1.38	-3.93
B2PREFTRCNT	Most recent job, within 4 years of BA completion: Prefer to work more hours	0	No	55.24	56.12	-0.88	-1.58
		1	Yes	44.76	43.88	0.88	2.02
B2PREKTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach early childhood education (preK)	0	Was not certified to teach and did not teach	92.42	95.42	-3.00*	-3.14
		1	Was not certified to teach and taught	5.90	3.75	2.15*	57.42
		2	Was certified to teach and did not teach	0.00	0.03	-0.03	-100.00
		3	Was certified and taught	1.67	0.80	0.88	109.91
B2PRIVDEFECUR	Currently in default on private student loans, as of B&B:16/20 student survey	0	No	97.40	97.60	-0.20	-0.21
		1	Yes	2.60	2.40	0.20	8.42

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2PRIVDFRCUR	Currently in deferment on private student loans, as of B&B:16/20 student survey	0	No	90.62	90.01	0.61	0.68
		1	Yes	9.38	9.99	-0.61	-6.13
B2PRIVDFRCVCUR	Currently in deferment on private student loans due to COVID-19, as of the B&B:16/20 survey	0	No	80.14	79.61	0.52	0.66
		1	Yes	19.86	20.39	-0.52	-2.57
B2PRIVLN	Ever received private student loans, as of B&B:16/20 student survey	0	No	80.08	83.57	-3.49*	-4.18
		1	Yes	19.92	16.43	3.49*	21.25
B2PRIVPAYMISS	Missed payment on a private student loan in 12 months before the B&B:16/20 student survey	0	All payments made on time	92.21	92.71	-0.49	-0.53
		1	Yes, missed one or two payments	6.53	6.43	0.10	1.50
		2	Yes, missed three or more payments	1.26	0.86	0.40*	46.03
B2PRIVPAYMORE	Made prepayment on private student loan in 12 months before the B&B:16/20 student survey	0	All payments made on time	45.88	48.14	-2.26	-4.70
		1	Yes, missed one or two payments	21.69	20.85	0.84	4.04
		2	Yes, missed three or more payments	32.43	31.01	1.42	4.59
B2PRIVRPMTCUR	Currently in repayment on private student loans, as of B&B:16/20 student survey	0	No	47.76	48.17	-0.41	-0.84
		1	Yes	52.24	51.83	0.41	0.78
B2PRIVSTAT	Current repayment status for private student loans, as of B&B:16/20 student survey	1	Already paid off all private student loan(s)	17.92	17.41	0.51	2.93
		2	All private student loan(s) in repayment	48.61	47.02	1.59	3.38
		3	Temporarily deferring payment of all private student loan(s)	25.76	26.57	-0.81	-3.04
		4	All private student loan(s) in default	1.64	1.62	0.02	1.01
		5	Multiple private student loans in different repayment statuses	6.07	7.37	-1.31*	-17.72
B2PROEVAT	Enrollment and completion, within 4 years of BA completion: Professional practice doctoral degree program	0	Never enrolled in professional practice doctoral degree program	87.18	85.63	1.54*	1.80
		1	Enrolled in professional practice doctoral degree program	7.37	8.57	-1.20*	-14.05
		2	Completed professional practice doctoral degree program	5.45	5.79	-0.34*	-5.85

See notes at end of table.



**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2PRSUPPRCNT	Most recent teaching job, 4 years after BA completion: School leadership supported and encouraged staff	1	Strongly disagree	3.69	4.87	-1.18	-24.22
		2	Disagree	11.56	8.49	3.07	36.15
		3	Neither agree nor disagree	14.10	12.97	1.13	8.72
		4	Agree	33.62	35.90	-2.28	-6.34
		5	Strongly agree	37.03	37.77	-0.74	-1.97
B2PUPPRCNT	Most recent school, 4 years after BA completion: Sector (public/private)	1	Public school	90.00	33.87	56.13*	165.70
		2	Private Catholic school	3.04	18.75	-15.71*	-83.79
		3	Private school – other religious	3.87	31.18	-27.31*	-87.60
		4	Private school – no religion	3.10	16.20	-13.10*	-80.89
B2REGION	Region of residence, as of B&B:16/20 survey	1	Northeast	5.67	5.75	-0.08	-1.42
		2	Mideast	17.46	17.66	-0.20	-1.11
		3	Great Lakes	14.62	14.36	0.26*	1.78
		4	Plains	6.73	6.77	-0.05	-0.67
		5	Southeast	22.39	22.49	-0.10	-0.44
		6	Southwest	10.45	10.43	0.02	0.22
		7	Rocky Mountains	4.48	4.38	0.10*	2.22
		8	Far West	16.43	16.40	0.03	0.16
		9	Outlying areas	0.53	0.54	-0.01	-2.74
		10	Not in U.S. or U.S. territory	1.25	1.22	0.03	2.77
B2REGTCHST	Regular classroom teacher status within 4 years of BA completion	0	Never a regular teacher since BA completion	91.10	84.64	6.46*	7.64
		1	New (currently a regular teacher, not a regular teacher as of B&B:16/17)	5.69	8.31	-2.62*	-31.53
		2	Continuing (regular teacher since BA completion, was regular teacher as of B&B:16/17)	2.05	5.29	-3.23*	-61.19
		3	Leaver (was a regular teacher since BA completion but not a regular teacher as of B&B:16/20)	1.16	1.77	-0.61*	-34.36
B2REGVT	Registered to vote, as of B&B:16/20 survey	0	No	2.81	6.96	-4.15*	-59.67
		1	Yes	97.19	93.04	4.15*	4.46

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2RETEMP	Had an employer-based retirement account, as of B&B:16/20 survey	0	Did not have an employer-based retirement account	32.02	32.91	-0.89*	-2.71
		1	Had an employer-based retirement account	67.98	67.09	0.89*	1.33
B2RETIRE	Had retirement account, as of B&B:16/20 survey	0	No	25.36	26.00	-0.65*	-2.48
		1	Yes	74.64	74.00	0.65*	0.87
B2RETNON	Had a non-employer-based retirement account, as of B&B:16/20 survey	0	Did not have a non-employer-based retirement account	69.23	69.74	-0.51*	-0.73
		1	Had a non-employer-based retirement account	30.77	30.26	0.51*	1.69
B2RETRCNT	Most recent job, within 4 years of BA completion: Retirement plans offered	0	No	22.83	23.74	-0.91*	-3.82
		1	Yes	77.17	76.26	0.91*	1.19
B2RPMTCUR	Currently in repayment on student loans, as of 2020	0	No	63.80	64.20	-0.40	-0.62
		1	Yes	36.20	35.80	0.40	1.12
B2RSEMP	Reason for non-degree coursework, within 4 years of BA completion: Needed for employment	0	No	74.65	76.83	-2.18*	-2.84
		1	Yes	25.35	23.17	2.18*	9.40
B2RSGOAL	Reason for non-degree coursework, within 4 years of BA completion: Career goals	0	No	51.10	53.35	-2.25*	-4.22
		1	Yes	48.90	46.65	2.25*	4.83
B2RSLTED	Reason for non-degree coursework, within 4 years of BA completion: Education goals	0	No	65.19	68.33	-3.13*	-4.59
		1	Yes	34.81	31.67	3.13*	9.89
B2RSOTH	Reason for non-degree coursework, within 4 years of BA completion: Other	0	No	91.25	92.45	-1.20*	-1.30
		1	Yes	8.75	7.55	1.20*	15.89

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2RSPERS	Reason for non-degree coursework, within 4 years of BA completion: personal enrichment	0	No	51.12	53.63	-2.51*	-4.68
		1	Yes	48.88	46.37	2.51*	5.41
B2SAMESTATE	Ever employed in same state as bachelor's degree-granting institution, within 4 years of BA completion	0	No	23.96	19.15	4.81*	25.13
		1	Yes	76.04	80.85	-4.81*	-5.95
B2SCITCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach natural sciences	0	Was not certified to teach and did not teach	85.56	93.07	-7.51*	-8.07
		1	Was not certified to teach and taught	5.10	3.17	1.93*	60.75
		3	Was certified and taught	9.34	3.76	5.59*	148.65
B2SECETCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach general education (middle/secondary grades)	0	Was not certified to teach and did not teach	95.50	97.80	-2.30*	-2.35
		1	Was not certified to teach and taught	3.02	1.50	1.52	101.20
		2	Was certified to teach and did not teach	0.00	0.08	-0.08	-100.00
		3	Was certified and taught	1.47	0.62	0.85	136.42
B2SECRCNT	Most recent job, within 4 years of BA completion: Satisfaction with job security	1	Dissatisfied	13.10	12.99	0.11	0.84
		2	Neither satisfied nor dissatisfied	15.74	15.69	0.05	0.34
		3	Satisfied	71.16	71.32	-0.16	-0.23
B2SEDTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach special education	0	Was not certified to teach and did not teach	87.52	93.48	-5.95*	-6.37
		1	Was not certified to teach and taught	2.72	1.88	0.84	44.54
		2	Was certified to teach and did not teach	0.00	0.08	-0.08	-100.00
		3	Was certified and taught	9.76	4.57	5.19*	113.63
B2SELLPO	Result of sale of all major possessions, as of B&B:16/20 survey	1	Have something left over	53.73	53.35	0.38*	0.71
		2	Break even	12.92	13.04	-0.13	-0.96
		3	Be in debt	33.35	33.61	-0.25	-0.75

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2SEX	Sex assigned at birth	1	Male	42.60	42.60	0.00	0.00
		2	Female	57.40	57.40	0.00	0.00
B2SFRBFGF	Sharing financial responsibilities with boyfriend or girlfriend, as of B&B:16/20 survey	0	No	88.64	88.55	0.09	0.10
		1	Yes	11.36	11.45	-0.09	-0.80
B2SFRFRM	Sharing financial responsibilities with friends or roommates, as of B&B:16/20 survey	0	No	93.79	93.64	0.15	0.16
		1	Yes	6.21	6.36	-0.15	-2.41
B2SFROTHERS	Sharing financial responsibilities with other types of individuals, as of B&B:16/20 survey	0	No	99.11	99.11	0.00	0.00
		1	Yes	0.89	0.89	0.00	-0.15
B2SFRPARENTS	Sharing financial responsibilities with parents, as of B&B:16/20 survey	0	No	91.26	91.17	0.09	0.10
		1	Yes	8.74	8.83	-0.09	-1.07
B2SFRRELATIVES	Sharing financial responsibilities with a sibling, as of B&B:16/20 survey	0	No	96.96	97.01	-0.05	-0.06
		1	Yes	3.04	2.99	0.05	1.79
B2SFRSPOUSE	Sharing financial responsibilities with spouse or domestic partner, as of B&B:16/20 survey	0	No	60.46	62.75	-2.29*	-3.65
		1	Yes	39.54	37.25	2.29*	6.16
B2SINGP	Single parent, 4 years after BA	0	No	94.29	94.13	0.16*	0.17
		1	Yes	5.71	5.87	-0.16*	-2.76
B2SMSTATERCNT	Most recent employer, within 4 years of BA completion: Located in the same state as BA-granting institution	0	No	36.89	38.39	-1.49*	-3.89
		1	Yes	63.11	61.61	1.49*	2.42
B2SMSTR	Residence and BA degree institution in same state, as of B&B:16/20 survey	0	Live in different state	34.51	36.77	-2.25*	-6.13
		1	Live in same state	65.49	63.23	2.25*	3.56

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2SOCTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach social sciences	0	Was not certified to teach and did not teach	82.42	91.93	-9.52*	-10.35
		1	Was not certified to teach and taught	8.13	4.05	4.08*	100.70
		3	Was certified and taught	9.45	4.02	5.44*	135.42
B2SPAMT	Spouse or domestic partner's student loan amount borrowed, as of B&B:16/20 survey	0	{Zero}	47.85	43.05	4.79*	11.14
		1	\$1 - \$9,999	6.14	6.46	-0.33	-5.06
		2	\$10,000 - \$19,999	8.93	8.95	-0.02	-0.19
		3	\$20,000 - \$29,999	10.42	11.25	-0.83*	-7.41
		4	\$30,000 - \$39,999	7.45	8.73	-1.29*	-14.73
		5	\$40,000 - \$49,999	4.39	5.30	-0.91*	-17.23
		6	\$50,000 - \$59,999	3.64	4.31	-0.67*	-15.52
		7	\$60,000 - \$69,999	2.80	2.86	-0.06	-2.03
		8	\$70,000 - \$79,999	2.04	2.36	-0.32	-13.45
		9	\$80,000 - \$89,999	1.31	1.34	-0.03	-1.93
		10	\$90,000 - \$99,999	0.71	0.77	-0.06	-8.18
		11	\$100,000 or more	4.33	4.62	-0.28	-6.13
B2SPCOL	Spouse or domestic partner attended college or graduate school in 2019-20, as of B&B:16/20 survey	0	No	81.08	80.91	0.17	0.21
		1	Yes	18.92	19.09	-0.17	-0.88
B2SPEMP	Spouse or domestic partner employed in 2019	0	No	10.24	10.35	-0.11	-1.04
		1	Yes	89.76	89.65	0.11	0.12
B2SPLNPY	Spouse or domestic partner's monthly payment on student loans, as of B&B:16/20 survey	0	0	32.38	33.82	-1.44	-4.26
		1	\$0.01 - \$49.99	1.60	1.54	0.06	3.93
		2	\$50.00 - \$99.99	6.91	6.83	0.08	1.14
		3	\$100.00 - \$149.99	7.94	9.07	-1.13	-12.46
		4	\$150.00 - \$199.99	9.50	9.97	-0.46	-4.66
		5	\$200.00 - \$249.99	8.71	8.47	0.24	2.83
		6	\$250.00 - \$499.99	19.03	18.11	0.92	5.07
		7	\$500.00 - \$749.99	7.55	6.77	0.78*	11.52
		8	\$750.00 - \$999.99	2.30	1.81	0.49*	26.82
		9	\$1,000 or more	4.07	3.60	0.47	13.10

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2SPLV	Highest education attained by spouse or domestic partner, as of B&B:16/20 survey	1	Did not complete high school	1.58	1.53	0.05	3.07
		2	High school diploma or equivalent	11.99	11.92	0.07	0.57
		3	Vocational or technical training	4.79	4.76	0.02	0.47
		4	Less than 2 years of college	5.92	5.91	0.00	0.08
		5	Associate's degree	7.34	7.27	0.06	0.87
		6	2 or more years of college but no degree	4.16	4.24	-0.08	-1.93
		7	Bachelor's degree	44.69	45.15	-0.46	-1.03
		8	Graduate degree	19.54	19.20	0.34	1.77
B2SPODP	Household composition, as of B&B:16/20 survey: Living with spouse or domestic partner	0	No	53.63	54.39	-0.76*	-1.39
		1	Yes	46.37	45.61	0.76*	1.66
B2SPOWE	Spouse or domestic partner's student loan amount owed, as of B&B:16/20 survey	1	All	22.08	18.89	3.20*	16.92
		2	Some	56.94	55.38	1.56	2.82
		3	None	20.97	25.73	-4.76*	-18.49
B2STCDERCNT	Most recent employer, within 4 years of BA completion: Employer state	1	Alabama	0.95	0.95	0.00	0.36
		2	Alaska	0.14	0.13	0.01*	3.96
		3	Arizona	2.08	2.10	-0.02	-0.87
		4	Arkansas	0.59	0.61	-0.02	-2.80
		5	California	12.46	12.43	0.04	0.30
		6	Colorado	2.46	2.44	0.03	1.14
		7	Connecticut	1.06	1.08	-0.02	-1.65
		8	Delaware	0.34	0.32	0.01*	3.96
		9	District of Columbia	1.15	1.15	-0.01	-0.52
		10	Florida	5.07	5.11	-0.04	-0.84
		11	Georgia	2.60	2.63	-0.03	-1.26
		12	Hawaii	0.30	0.31	-0.01	-2.71
		13	Idaho	0.59	0.59	0.00	0.26
		14	Illinois	4.19	4.17	0.02	0.47
		15	Indiana	2.20	2.23	-0.03	-1.39
		16	Iowa	0.88	0.86	0.01	1.48
		17	Kansas	0.82	0.80	0.02	2.15
		18	Kentucky	1.43	1.41	0.02	1.38
		19	Louisiana	0.93	0.92	0.02	1.77

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2STCDERCNT— Continued		20	Maine	0.35	0.34	0.00	1.36
		21	Maryland	1.69	1.71	-0.02	-1.01
		22	Massachusetts	3.50	3.49	0.02	0.49
		23	Michigan	2.66	2.66	0.01	0.19
		24	Minnesota	2.09	2.10	-0.01	-0.51
		25	Mississippi	0.60	0.59	0.01*	2.38
		26	Missouri	1.79	1.81	-0.03	-1.54
		27	Montana	0.35	0.35	0.01	1.71
		28	Nebraska	0.70	0.70	0.00	-0.27
		29	Nevada	0.40	0.39	0.01	2.42
		30	New Hampshire	0.50	0.53	-0.03	-6.39
		31	New Jersey	2.26	2.19	0.07*	3.00
		32	New Mexico	0.68	0.68	0.00	0.24
		33	New York	8.12	8.14	-0.02	-0.26
		34	North Carolina	3.35	3.31	0.04	1.21
		35	North Dakota	0.30	0.29	0.00	0.36
		36	Ohio	3.79	3.82	-0.03	-0.78
		37	Oklahoma	0.91	0.90	0.01	1.44
		38	Oregon	1.20	1.20	0.00	-0.16
		39	Pennsylvania	4.35	4.33	0.02	0.48
		40	Rhode Island	0.26	0.26	0.00	-0.53
		41	South Carolina	1.10	1.14	-0.04	-3.85
		42	South Dakota	0.31	0.30	0.01	2.83
		43	Tennessee	1.99	2.02	-0.03	-1.60
		44	Texas	6.59	6.55	0.05	0.69
		45	Utah	1.12	1.10	0.02	1.61
		46	Vermont	0.17	0.18	-0.01	-7.83
		47	Virginia	3.31	3.28	0.03	0.79
		48	Washington	2.72	2.74	-0.02	-0.59
		49	West Virginia	0.34	0.34	0.00	0.52
		50	Wisconsin	1.76	1.81	-0.05	-2.98
		51	Wyoming	0.06	0.05	0.00*	3.96
		52	Puerto Rico	0.37	0.36	0.01*	2.85
		54	American Samoa	0.01	0.01	0.00	3.96
		55	Guam	0.00	0.00	0.00	3.96
		60	U.S. Virgin Islands	0.01	0.01	0.00	3.96
		61	American Military	0.06	0.06	0.00	-5.35

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2STCDR	State of residence, as of B&B:16/20 survey	1	Alabama	1.00	1.01	-0.02	-1.66
		2	Alaska	0.12	0.14	-0.02	-12.56
		3	Arizona	1.96	1.93	0.03	1.32
		4	Arkansas	0.61	0.62	-0.01	-1.07
		5	California	11.59	11.55	0.04	0.34
		6	Colorado	2.34	2.30	0.03	1.50
		7	Connecticut	1.32	1.29	0.03	2.39
		8	Delaware	0.28	0.27	0.00	1.20
		9	District of Columbia	0.69	0.70	-0.01	-0.97
		10	Florida	5.32	5.38	-0.07	-1.23
		11	Georgia	2.52	2.52	0.00	-0.14
		12	Hawaii	0.26	0.26	0.01	2.77
		13	Idaho	0.64	0.61	0.03*	4.71
		14	Illinois	4.01	3.94	0.07	1.88
		15	Indiana	2.46	2.42	0.04	1.59
		16	Iowa	1.02	0.99	0.03*	3.45
		17	Kansas	0.72	0.71	0.01	1.73
		18	Kentucky	1.23	1.24	-0.01	-0.71
		19	Louisiana	0.87	0.86	0.01	1.56
		20	Maine	0.37	0.39	-0.02	-5.32
		21	Maryland	1.74	1.79	-0.05	-2.97
		22	Massachusetts	2.98	2.98	0.00	-0.13
		23	Michigan	2.61	2.57	0.04	1.57
		24	Minnesota	1.87	1.90	-0.03	-1.35
		25	Mississippi	0.73	0.72	0.01	1.98
		26	Missouri	1.90	1.92	-0.02	-0.89
		27	Montana	0.41	0.39	0.02*	5.68
		28	Nebraska	0.66	0.68	-0.02	-2.54
		29	Nevada	0.48	0.49	0.00	-0.20
		30	New Hampshire	0.47	0.54	-0.07	-12.86
		31	New Jersey	2.82	2.93	-0.11	-3.75
		32	New Mexico	0.70	0.70	0.00	0.39
		33	New York	7.30	7.31	-0.01	-0.20
		34	North Carolina	3.22	3.19	0.04	1.16
		35	North Dakota	0.25	0.26	-0.01	-4.18
		36	Ohio	3.74	3.65	0.09*	2.59
		37	Oklahoma	0.94	0.96	-0.02	-1.94

See notes at end of table.



**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2STCDR—Continued		38	Oregon	1.37	1.39	-0.02	-1.24
		39	Pennsylvania	4.64	4.65	-0.01	-0.31
		40	Rhode Island	0.34	0.34	0.00	0.04
		41	South Carolina	1.31	1.31	0.00	0.28
		42	South Dakota	0.29	0.31	-0.02	-6.86
		43	Tennessee	2.03	2.03	0.00	0.23
		44	Texas	6.85	6.84	0.01	0.20
		45	Utah	1.03	1.01	0.02	1.95
		46	Vermont	0.18	0.20	-0.02	-9.02
		47	Virginia	3.23	3.28	-0.04	-1.36
		48	Washington	2.59	2.58	0.02	0.64
		49	West Virginia	0.31	0.34	-0.03	-7.46
		50	Wisconsin	1.80	1.79	0.01	0.46
		51	Wyoming	0.06	0.07	-0.01	-10.87
		52	Puerto Rico	0.44	0.45	-0.02	-3.74
		54	American Samoa	0.00	0.00	0.00	5.68
		55	Guam	0.00	0.00	0.00	5.68
		60	U.S. Virgin Islands	0.03	0.03	0.00	5.68
		61	American Military	0.06	0.06	0.00	0.46
99	Foreign country	1.25	1.22	0.03	2.77		
B2STEMOCCRCNT	Most recent job, within 4 years of BA completion: Occupation is in STEM	0	No	71.62	72.54	-0.92*	-1.27
		1	Yes	28.38	27.46	0.92*	3.35
B2STRESS	Did not meet essential expenses in past 12 months, as of B&B:16/20 survey: not due to COVID	0	Did meet expenses in past 12 months	89.41	89.40	0.01	0.01
		1	Did not meet expenses for reasons other than COVID	10.59	10.60	-0.01	-0.09
B2STSUB	Ever worked as a short-term substitute teacher, 4 years after BA completion	0	Never worked as a short-term substitute teacher	97.80	94.87	2.92*	3.08
		1	Worked as a short-term substitute teacher	2.20	5.13	-2.92*	-57.04
B2STUTCH	Ever worked as a student teacher, 4 years after BA completion	0	Never worked as a student teacher	99.09	98.36	0.73*	0.74
		1	Worked as a student teacher	0.91	1.64	-0.73*	-44.52

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2SUBGRE	Took GRE Subject Test, 4 years after BA completion	0	No	98.61	98.64	-0.03	-0.03
		1	Yes	1.39	1.36	0.03	2.28
B2SUPTCH	Ever worked as a support teacher, 4 years after BA completion	0	Never worked as a support teacher	99.03	97.08	1.95*	2.01
		1	Worked as a support teacher	0.97	2.92	-1.95*	-66.82
B2SUPVRCNT	Most recent job, within 4 years of BA completion: Supervises others	0	No	61.74	62.23	-0.49*	-0.79
		1	Yes	38.26	37.77	0.49*	1.30
B2TCH AID	Ever worked as a teacher's aide, 4 years after BA completion	0	Never worked as a teacher's aide	98.75	96.60	2.15*	2.22
		1	Worked as a teacher's aide	1.25	3.40	-2.15*	-63.19
B2TCHGRT	Aware of TEACH Grant programs, as of B&B:16/20 survey	0	No	80.70	81.18	-0.48*	-0.59
		1	Yes	19.30	18.82	0.48*	2.54
B2TCHLNFRGV	Awareness and participation in teacher loan forgiveness programs, as of B&B:16/20 survey	0	Not aware of programs	10.98	14.21	-3.23*	-22.73
		1	Aware and did not participate	60.21	58.08	2.12	3.65
		2	Aware and participated	28.82	27.71	1.11	3.99
B2TCHOCCRCNT	Most recent job, within 4 years of BA completion: Occupation is in teaching	0	No	93.02	93.47	-0.46*	-0.49
		1	Yes	6.98	6.53	0.46*	7.03
B2TLCEVR	Ever allowed to work remotely for any jobs due to coronavirus pandemic, within 4 years of BA completion	0	No	46.66	46.98	-0.32	-0.68
		1	Yes	48.50	48.80	-0.30	-0.61
		2	Self-employed	4.84	4.22	0.62*	14.71
B2TLCRCNT	Most recent job, within 4 years of BA completion: Allowed to work remotely	0	No	46.67	47.11	-0.44*	-0.92
		1	Yes	53.33	52.89	0.44*	0.82

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2TOTCOMPDEG	Total number of degree programs completed, within 4 years of BA completion	0	No degrees completed	46.63	47.07	-0.44*	-0.94
		1	One completed degree	48.58	48.10	0.49*	1.02
		2	Two completed degrees	4.62	4.65	-0.03	-0.65
		3	Three completed degrees	0.16	0.18	-0.02	-8.55
		4	Four completed degrees	0.00	0.00	0.00	-100.00
B2TTLIRCNT	Most recent school, 4 years after BA completion: Title I eligible	0	Not Title I eligible	21.29	24.58	-3.29	-13.39
		1	Title I eligible	78.71	75.42	3.29	4.36
B2UGPVLN	Ever had a private loan for undergraduate education, as of B&B:16/20 student survey	0	No	87.79	87.74	0.05*	0.05
		1	Yes	12.21	12.26	-0.05*	-0.38
B2UNEMP	Received unemployment compensation not due to coronavirus pandemic, within 4 years of BA completion	0	No	96.02	96.02	0.01	0.01
		1	Yes	3.98	3.98	-0.01	-0.16
B2UNEMPCV	Received unemployment compensation due to coronavirus pandemic, within 4 years of BA completion	0	No	87.40	87.35	0.05	0.06
		1	Yes	12.60	12.65	-0.05	-0.38
B2UNIONRCT	Most recent teaching job, 4 years after BA completion: Union representation	0	Not represented by a union	44.19	70.43	-26.24*	-37.26
		1	Yes, but was not a dues-paying member	43.96	23.08	20.87*	90.42
		2	Yes, was a dues-paying member	11.85	6.48	5.37*	82.83
B2VLNTR	Volunteered in past 12 months, as of B&B:16/20 survey	0	No, did not volunteer in past 12 months	67.44	67.48	-0.05	-0.07
		1	Yes, volunteered in past 12 months	32.56	32.52	0.05	0.15
B2VOCTCHCRT	Most recent teaching job, 4 years after BA completion: Taught and certified to teach vocational/career/technical education	0	Was not certified to teach and did not teach	98.17	99.32	-1.14*	-1.15
		1	Was not certified to teach and taught	0.85	0.35	0.50*	144.46
		3	Was certified and taught	0.98	0.34	0.64*	190.33

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2VTNEL	Voted in 2020 election	0	No	18.14	16.44	1.70*	10.35
		1	Yes	81.86	83.56	-1.70*	-2.04
B2WORTHG	Graduate education was worth the financial cost, as of B&B:16/20 survey	0	Graduate education not worth financial cost	31.82	32.52	-0.70	-2.16
		1	Graduate education worth financial cost	68.18	67.48	0.70	1.04
B2WORTHUG	Undergraduate education worth the financial cost, as of B&B:16/20 survey	0	Undergraduate education not worth financial cost	44.06	43.89	0.17	0.39
		1	Undergraduate education worth financial cost	55.94	56.11	-0.17	-0.30
B2WRK4YR	Ever employed for pay, within 4 years of BA completion	0	No	1.77	1.68	0.09*	5.24
		1	Yes	98.23	98.32	-0.09*	-0.09
B2WYCVETR	Ever worked less than full time in any job due to the coronavirus pandemic, within 4 years of BA completion	0	No	96.60	96.38	0.22	0.23
		1	Yes	3.40	3.62	-0.22	-6.07
B2WYCVRCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: hours reduced due to coronavirus pandemic	0	No	80.33	81.18	-0.85*	-1.05
		1	Yes	19.67	18.82	0.85*	4.54
B2WYFRRCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: family responsibilities	0	No	85.58	85.63	-0.05	-0.05
		1	Yes	14.42	14.37	0.05	0.31
B2WYMLJRCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: held more than one job	0	No	77.91	77.40	0.51	0.66
		1	Yes	22.09	22.60	-0.51	-2.25
B2WYNJARCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: full-time job not available	0	No	73.13	72.86	0.27	0.38
		1	Yes	26.87	27.14	-0.27	-1.01

See notes at end of table.

**Table K-3. Weighted distributions of categorical variables before and after imputation using analysis weight WTB000: 2020—Continued**

Variable	Variable label	Value	Label	Percent before imputation	Percent after imputation	Difference	Percent relative difference
B2WYNOHRCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Did not want to work more hours	0	No	76.41	75.78	0.64	0.84
		1	Yes	23.59	24.22	-0.64	-2.62
B2WYOTHRCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Other reason	0	No	83.12	83.49	-0.37	-0.44
		1	Yes	16.88	16.51	0.37	2.24
B2WYSCHRCNT	Most recent job, within 4 years of BA completion: Reason worked less than 30 hours: Working while attending school	0	No	63.56	64.16	-0.60	-0.94
		1	Yes	36.44	35.84	0.60	1.68
PAREduc	Parents' highest education level	0	Do not know either parent's education level	0.16	0.13	0.03*	19.60
		1	Did not complete high school	4.23	3.82	0.41*	10.64
		2	High school diploma or equivalent	13.43	12.52	0.90*	7.19
		3	Vocational/technical training	4.41	4.34	0.07	1.60
		4	Associate's degree	7.22	7.41	-0.19	-2.54
		5	Some college but no degree	13.18	13.70	-0.52*	-3.82
		6	Bachelor's degree	28.19	28.47	-0.28	-0.97
		7	Master's degree or equivalent	18.91	19.35	-0.43	-2.23
		8	Doctoral degree—research/scholarship	5.50	5.37	0.13	2.40
9	Doctoral degree—professional practice	4.78	4.89	-0.11	-2.26		
RACE	Race/ethnicity	1	White	65.41	65.48	-0.07	-0.11
		2	Black or African American	10.17	10.15	0.02	0.21
		3	Hispanic or Latino	12.49	12.48	0.01	0.07
		4	Asian	7.79	7.77	0.01	0.17
		5	American Indian or Alaska Native	0.52	0.52	0.01*	1.02
		6	Native Hawaiian/other Pacific Islander	0.29	0.28	0.00*	1.02
		7	More than one race	3.33	3.31	0.02	0.65

\*  $p < .05$ .

NOTE: BA = bachelor's degree; ESL = English as a second language; GMAT = Graduate Management Admission Test; GRE = Graduate Record Examinations; TEACH = Teacher Education Assistance for College and Higher Education. Distributions were computed using the B&B:16/20 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.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate & Beyond Longitudinal Study (B&B:16/20).

# Appendix L. Design Effects

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**Table L-1. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	326.74	0.60	0.38	1.59	2.53
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	18,212.61	8.48	135.62	0.06	#
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	50.88	0.02	0.38	0.06	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	28.47	0.46	0.34	1.33	1.77
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	20,817.10	99.43	164.15	0.61	0.37
NPSAS institutional control: Public	CONTROL = 1	63.61	0.02	0.37	0.05	#
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	21.87	0.24	0.32	0.76	0.58
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	24.06	0.48	0.33	1.48	2.20
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	41.23	0.56	0.38	1.50	2.24
Age, as of BA completion	B2AGEATBA (mean)	26.01	0.07	0.05	1.38	1.92
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	58.13	0.58	0.38	1.55	2.39
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.32	0.13	0.09	1.37	1.88
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	63.99	0.59	0.37	1.62	2.61
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	74.00	0.50	0.33	1.48	2.19
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.59	0.31	0.26	1.20	1.44
Sex assigned at birth: Female	B2SEX = 2	57.40	0.05	0.38	0.13	0.02
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	234.90	5.01	3.40	1.47	2.17
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	51,725.35	395.53	272.11	1.45	2.11
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	24.90	0.47	0.33	1.42	2.02
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.01	#	1.50	2.24
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.86	0.23	0.16	1.44	2.08
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.82	0.35	0.20	1.76	3.10
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	11.06	0.38	0.24	1.59	2.52
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	299.04	7.92	4.26	1.86	3.46
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	328.18	6.45	4.38	1.47	2.17

See notes at end of table.

**Table L-1. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	74.32	0.55	0.33	1.64	2.70
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.36	0.02	0.01	1.73	2.98
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	56.11	0.59	0.38	1.55	2.41
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	33,114.10	365.86	322.10	1.14	1.29
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.39	0.08	0.05	1.59	2.52
Summary statistics						
Minimum		†	†	†	0.05	#
25th percentile		†	†	†	1.20	1.44
Median		†	†	†	1.47	2.17
75th percentile		†	†	†	1.59	2.52
Maximum		†	†	†	1.86	3.46

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table L-2. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members at public institutions: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	322.45	0.81	0.59	1.38	1.89
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	16,546.48	12.57	204.19	0.06	#
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	51.19	0.03	0.60	0.06	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	29.44	0.64	0.55	1.16	1.36
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	18,505.48	125.41	237.38	0.53	0.28
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	23.57	0.43	0.51	0.84	0.70
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	23.96	0.68	0.52	1.32	1.73
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	41.53	0.77	0.60	1.29	1.67
Age, as of BA completion	B2AGEATBA (mean)	25.45	0.09	0.07	1.24	1.53
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	57.99	0.79	0.60	1.33	1.76
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.35	0.17	0.15	1.14	1.30
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	65.56	0.79	0.58	1.37	1.89
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	74.61	0.71	0.53	1.35	1.82
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.99	0.43	0.42	1.02	1.04
Sex assigned at birth: Female	B2SEX = 2	56.39	0.44	0.60	0.73	0.53
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	221.75	7.18	5.34	1.35	1.81
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	50,366.56	503.41	363.11	1.39	1.92
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	25.74	0.64	0.53	1.21	1.47
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.14	0.01	0.01	1.48	2.20
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.83	0.30	0.24	1.27	1.62
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.97	0.47	0.31	1.49	2.21
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	10.90	0.54	0.38	1.42	2.02
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	228.64	7.30	5.54	1.32	1.74
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	303.60	9.41	6.99	1.35	1.81

See notes at end of table.

**Table L-2. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members at public institutions: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	72.68	0.74	0.54	1.37	1.87
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.36	0.03	0.02	1.59	2.53
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	59.11	0.80	0.60	1.35	1.81
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	30,907.70	496.78	496.10	1.00	1.00
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.39	0.10	0.08	1.36	1.85
Summary statistics						
Minimum		†	†	†	0.06	#
25th percentile		†	†	†	1.14	1.30
Median		†	†	†	1.32	1.74
75th percentile		†	†	†	1.37	1.87
Maximum		†	†	†	1.59	2.53

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table L-3. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members at private nonprofit institutions: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	335.03	1.08	0.66	1.65	2.71
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	18,539.84	8.18	233.85	0.03	#
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	45.66	0.02	0.68	0.03	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	28.55	0.76	0.62	1.22	1.49
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	22,542.41	201.98	317.07	0.64	0.41
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	20.28	0.58	0.55	1.05	1.09
Highest degree enrollment, within 4 years of BA completion: Master's degree	B2HIDEg = 5	24.46	0.72	0.59	1.22	1.50
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	42.18	0.84	0.68	1.24	1.53
Age, as of BA completion	B2AGEATBA (mean)	25.49	0.12	0.10	1.21	1.47
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	57.20	0.87	0.68	1.28	1.65
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.15	0.22	0.18	1.25	1.56
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	67.28	0.74	0.64	1.15	1.32
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	73.70	0.71	0.60	1.17	1.38
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	14.14	0.56	0.48	1.17	1.38
Sex assigned at birth: Female	B2SEX = 2	58.81	0.90	0.68	1.34	1.79
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	246.19	8.35	6.94	1.20	1.45
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	54,138.94	817.23	617.47	1.32	1.75
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.47	0.70	0.61	1.16	1.34
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.16	0.01	0.01	1.22	1.49
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.29	0.38	0.27	1.40	1.96
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.72	0.49	0.36	1.38	1.89
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	12.10	0.57	0.45	1.28	1.64
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	395.14	12.78	9.21	1.39	1.93
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	379.14	11.01	9.33	1.18	1.39

See notes at end of table.

**Table L-3. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members at private nonprofit institutions: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	77.95	0.74	0.57	1.30	1.70
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.44	0.03	0.02	1.30	1.69
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG=1	52.21	0.86	0.69	1.26	1.59
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	35,116.83	616.88	611.31	1.01	1.02
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP=1	0.42	0.12	0.09	1.34	1.80
Summary statistics						
Minimum		†	†	†	0.03	#
25th percentile		†	†	†	1.17	1.38
Median		†	†	†	1.22	1.50
75th percentile		†	†	†	1.30	1.70
Maximum		†	†	†	1.65	2.71

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-4. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members at private for-profit institutions: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	330.50	1.67	0.84	1.99	3.97
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	33,908.03	10.07	310.82	0.03	#
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	73.50	0.04	0.62	0.07	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	17.99	0.93	0.54	1.72	2.97
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	36,308.09	332.06	346.66	0.96	0.92
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	12.03	1.45	0.46	3.16	9.95
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	23.12	1.09	0.60	1.83	3.36
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	33.36	1.35	0.67	2.02	4.10
Age, as of BA completion	B2AGEATBA (mean)	34.42	0.57	0.14	4.00	16.02
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	64.22	1.38	0.68	2.03	4.13
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.91	0.28	0.18	1.53	2.34
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	31.45	2.78	0.66	4.24	17.98
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	69.05	1.04	0.65	1.60	2.56
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	6.72	0.56	0.35	1.57	2.47
Sex assigned at birth: Female	B2SEX = 2	61.01	1.88	0.69	2.72	7.41
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	279.87	8.62	7.28	1.18	1.40
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	53,995.20	942.25	499.62	1.89	3.56
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	8.49	0.51	0.39	1.29	1.67
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.16	0.01	0.01	1.28	1.65
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	10.50	0.48	0.32	1.49	2.22
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	77.74	0.61	0.42	1.45	2.10
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	7.59	0.70	0.37	1.87	3.51
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	569.34	90.53	10.17	8.90	79.22
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	326.66	8.85	7.56	1.17	1.37

See notes at end of table.

**Table L-4. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for all B&B:16-eligible sample members at private for-profit institutions: 2020—  
Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	73.43	1.44	0.62	2.30	5.30
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	1.95	0.04	0.02	2.43	5.92
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	44.22	1.47	0.70	2.10	4.39
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	46,140.07	541.03	557.74	0.97	0.94
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.13	0.07	0.05	1.45	2.09
Summary statistics						
Minimum		†	†	†	0.03	#
25th percentile		†	†	†	1.29	1.67
Median		†	†	†	1.72	2.97
75th percentile		†	†	†	2.10	4.39
Maximum		†	†	†	8.90	79.22

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



**Table L-5. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for White B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	332.04	0.70	0.47	1.50	2.24
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	17,729.06	165.05	164.84	1.00	1.00
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	43.67	0.44	0.48	0.92	0.85
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	30.62	0.64	0.44	1.44	2.07
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	20,834.31	214.39	208.47	1.03	1.06
NPSAS institutional control: Public	CONTROL = 1	63.57	0.40	0.46	0.86	0.73
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	21.79	0.40	0.40	1.01	1.02
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	23.53	0.64	0.41	1.57	2.46
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	39.82	0.70	0.47	1.49	2.22
Age, as of BA completion	B2AGEATBA (mean)	25.76	0.10	0.07	1.45	2.10
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	59.69	0.72	0.47	1.51	2.29
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.48	0.15	0.11	1.32	1.75
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	63.57	0.74	0.46	1.59	2.52
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	77.64	0.63	0.40	1.57	2.46
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.41	0.47	0.33	1.42	2.01
Sex assigned at birth: Female	B2SEX = 2	55.82	0.45	0.48	0.94	0.89
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	241.32	6.52	4.35	1.50	2.24
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	52,572.07	480.76	337.84	1.42	2.03
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	24.12	0.58	0.41	1.41	1.99
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.01	0.01	1.42	2.02
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.03	0.29	0.21	1.42	2.02
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	81.54	0.35	0.24	1.47	2.16
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	11.34	0.47	0.31	1.55	2.39
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	288.08	8.22	5.03	1.63	2.67
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	350.29	8.84	5.84	1.51	2.29

See notes at end of table.

**Table L-5. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for White B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	75.09	0.65	0.42	1.55	2.39
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.38	0.02	0.01	1.58	2.50
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	56.64	0.73	0.48	1.53	2.35
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	32,122.79	457.53	394.40	1.16	1.35
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.31	0.08	0.05	1.48	2.18
Summary statistics						
Minimum		†	†	†	0.86	0.73
25th percentile		†	†	†	1.32	1.75
Median		†	†	†	1.46	2.13
75th percentile		†	†	†	1.53	2.35
Maximum		†	†	†	1.63	2.67

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-6. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for Black B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	303.62	1.72	1.11	1.55	2.40
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	30,029.98	558.86	424.85	1.32	1.73
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	77.98	1.57	0.90	1.75	3.07
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	21.36	1.44	0.89	1.62	2.62
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	31,696.33	675.17	469.32	1.44	2.07
NPSAS institutional control: Public	CONTROL = 1	57.22	1.59	1.07	1.48	2.19
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	14.09	1.22	0.75	1.62	2.62
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	30.32	1.55	1.00	1.55	2.42
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	45.64	1.69	1.08	1.56	2.45
Age, as of BA completion	B2AGEATBA (mean)	29.06	0.31	0.20	1.53	2.35
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	52.93	1.66	1.08	1.54	2.36
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.82	0.50	0.32	1.53	2.34
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	58.46	1.83	1.07	1.71	2.92
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	64.11	1.66	1.04	1.60	2.56
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.27	1.20	0.73	1.63	2.66
Sex assigned at birth: Female	B2SEX = 2	65.70	1.46	1.03	1.42	2.03
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	219.86	15.52	10.03	1.55	2.39
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	44,639.95	1,046.34	589.65	1.77	3.15
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	21.62	1.44	0.89	1.62	2.61
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.16	0.02	0.01	1.44	2.06
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	11.31	0.60	0.37	1.59	2.54
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	73.58	1.25	0.63	1.97	3.87
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	9.94	1.10	0.65	1.70	2.90
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	279.38	23.89	11.25	2.12	4.51
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	264.48	17.53	10.74	1.63	2.67

See notes at end of table.

**Table L-6. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for Black B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	71.45	1.61	0.98	1.64	2.70
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.39	0.06	0.03	1.88	3.53
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	45.71	1.51	1.08	1.40	1.97
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	50,117.52	1,494.80	1,031.36	1.45	2.10
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.33	0.18	0.12	1.41	1.99
Summary statistics						
Minimum		†	†	†	1.32	1.73
25th percentile		†	†	†	1.48	2.19
Median		†	†	†	1.58	2.49
75th percentile		†	†	†	1.64	2.70
Maximum		†	†	†	2.12	4.51

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-7. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for Hispanic B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	317.92	1.64	1.01	1.63	2.66
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	16,959.04	496.59	345.97	1.44	2.06
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	70.55	1.36	0.92	1.48	2.18
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	21.55	1.40	0.83	1.69	2.84
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	18,606.24	569.65	392.20	1.45	2.11
NPSAS institutional control: Public	CONTROL = 1	65.51	1.38	0.96	1.44	2.08
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	19.36	1.07	0.80	1.35	1.81
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEg = 5	23.21	1.29	0.85	1.52	2.31
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	39.70	1.55	0.99	1.57	2.48
Age, as of BA completion	B2AGEATBA (mean)	26.04	0.18	0.12	1.49	2.22
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	59.64	1.58	0.99	1.60	2.55
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	39.54	0.39	0.23	1.71	2.93
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	62.81	1.85	0.98	1.89	3.59
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	68.70	1.48	0.94	1.58	2.50
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	17.95	1.20	0.77	1.55	2.39
Sex assigned at birth: Female	B2SEX = 2	58.78	1.63	0.99	1.64	2.69
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	209.92	11.98	7.09	1.69	2.86
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	48,511.95	950.15	591.93	1.61	2.58
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	23.38	1.12	0.85	1.31	1.71
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.13	0.02	0.01	1.44	2.09
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.53	0.71	0.46	1.55	2.41
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	76.62	0.84	0.54	1.56	2.44
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	10.08	1.02	0.61	1.68	2.82
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	296.91	16.81	12.19	1.38	1.90
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	267.01	14.29	9.19	1.56	2.42

See notes at end of table.

**Table L-7. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for Hispanic B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	74.54	1.51	0.88	1.72	2.97
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.37	0.04	0.03	1.52	2.31
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	59.21	1.45	0.99	1.47	2.15
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	31,254.78	1,218.67	808.80	1.51	2.27
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.30	0.24	0.11	2.16	4.65
Summary statistics						
Minimum		†	†	†	1.31	1.71
25th percentile		†	†	†	1.47	2.15
Median		†	†	†	1.55	2.41
75th percentile		†	†	†	1.64	2.69
Maximum		†	†	†	2.16	4.65

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-8. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for Asian B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	330.66	1.79	1.29	1.39	1.93
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	8,573.69	624.04	415.42	1.50	2.26
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	42.52	2.01	1.50	1.34	1.80
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	29.86	2.04	1.39	1.47	2.16
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	10,132.33	717.85	538.09	1.33	1.78
NPSAS institutional control: Public	CONTROL = 1	67.33	1.79	1.42	1.26	1.58
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	35.99	1.95	1.45	1.34	1.80
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	25.25	1.88	1.32	1.43	2.04
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	50.05	1.89	1.52	1.25	1.56
Age, as of BA completion	B2AGEATBA (mean)	24.08	0.16	0.13	1.28	1.63
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	49.08	1.92	1.51	1.27	1.61
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	39.48	0.66	0.41	1.63	2.67
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	75.53	2.05	1.30	1.58	2.48
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	68.84	1.97	1.40	1.41	1.98
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	8.81	1.10	0.86	1.28	1.65
Sex assigned at birth: Female	B2SEX = 2	56.79	1.94	1.50	1.29	1.66
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	265.52	22.46	13.44	1.67	2.79
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	60,482.52	2,152.51	1,633.43	1.32	1.74
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	37.49	1.90	1.47	1.29	1.67
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.11	0.02	0.02	1.49	2.22
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.91	0.68	0.53	1.29	1.66
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	66.84	1.53	0.93	1.64	2.68
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	12.56	1.66	1.00	1.66	2.75
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	369.03	29.77	21.23	1.40	1.97
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	347.61	27.32	19.72	1.39	1.92

See notes at end of table.

**Table L-8. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for Asian B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	71.91	2.21	1.36	1.63	2.64
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.10	0.06	0.04	1.44	2.09
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	62.28	2.33	1.47	1.58	2.51
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	22,692.76	1,677.38	1,373.48	1.22	1.49
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.96	0.46	0.30	1.56	2.43
Summary statistics						
Minimum		†	†	†	1.22	1.49
25th percentile		†	†	†	1.29	1.66
Median		†	†	†	1.39	1.95
75th percentile		†	†	†	1.56	2.43
Maximum		†	†	†	1.67	2.79

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



**Table L-9. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for B&B:16-eligible sample members of another race: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	318.95	3.69	1.90	1.94	3.77
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	18,769.57	1,029.55	638.20	1.61	2.60
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	54.87	2.88	1.82	1.58	2.50
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	30.04	2.67	1.68	1.59	2.54
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	20,597.85	1,076.89	723.23	1.49	2.22
NPSAS institutional control: Public	CONTROL = 1	67.28	2.78	1.72	1.62	2.62
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	23.29	2.47	1.55	1.60	2.55
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	17.37	2.10	1.39	1.52	2.31
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	40.66	3.06	1.80	1.70	2.90
Age, as of BA completion	B2AGEATBA (mean)	25.97	0.36	0.25	1.42	2.02
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	58.64	3.06	1.80	1.70	2.89
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.46	0.73	0.49	1.50	2.26
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	66.10	2.78	1.73	1.61	2.58
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	66.15	2.64	1.73	1.52	2.32
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.12	1.69	1.24	1.37	1.88
Sex assigned at birth: Female	B2SEX = 2	59.17	3.07	1.80	1.71	2.91
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	260.28	28.07	17.19	1.63	2.67
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	49,313.62	1,848.15	1,315.24	1.41	1.97
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.40	2.72	1.61	1.69	2.85
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.18	0.03	0.02	1.39	1.93
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.33	1.07	0.68	1.56	2.45
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	77.74	1.47	0.95	1.54	2.38
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	9.64	1.93	1.08	1.79	3.21
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	403.88	36.56	27.27	1.34	1.80
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	366.98	25.39	20.24	1.25	1.57

See notes at end of table.

**Table L-9. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for B&B:16-eligible sample members of another race: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	72.91	2.67	1.63	1.64	2.70
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.49	0.07	0.05	1.31	1.72
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	52.31	3.04	1.83	1.66	2.77
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	32,273.90	1,836.86	1,372.54	1.34	1.79
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.87	0.54	0.34	1.59	2.52
Summary statistics						
Minimum		†	†	†	1.25	1.57
25th percentile		†	†	†	1.42	2.02
Median		†	†	†	1.58	2.51
75th percentile		†	†	†	1.64	2.70
Maximum		†	†	†	1.94	3.77

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics. "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-10. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for male B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	320.36	1.05	0.63	1.68	2.81
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	16,417.69	241.44	210.01	1.15	1.32
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	48.58	0.67	0.61	1.10	1.22
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	29.18	0.84	0.55	1.52	2.32
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	19,034.09	334.76	258.13	1.30	1.68
NPSAS institutional control: Public	CONTROL = 1	65.13	0.65	0.58	1.12	1.26
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	31.02	0.61	0.56	1.07	1.16
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	20.52	0.73	0.49	1.49	2.21
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	37.26	0.87	0.59	1.47	2.17
Age, as of BA completion	B2AGEATBA (mean)	25.85	0.10	0.08	1.31	1.72
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	62.11	0.86	0.59	1.46	2.12
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	41.63	0.21	0.14	1.47	2.17
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	66.76	0.85	0.57	1.49	2.21
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	75.01	0.80	0.53	1.51	2.29
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	8.77	0.48	0.35	1.39	1.93
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	254.81	9.12	5.64	1.62	2.62
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	58,667.10	803.89	519.96	1.55	2.39
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	23.16	0.76	0.51	1.47	2.16
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.14	0.01	0.01	1.39	1.92
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.47	0.37	0.26	1.39	1.93
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	79.50	0.53	0.32	1.67	2.79
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	13.15	0.62	0.41	1.51	2.28
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	309.51	10.05	6.85	1.47	2.16
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	344.03	10.10	6.90	1.46	2.14

See notes at end of table.

**Table L-10. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for male B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	72.49	0.97	0.54	1.79	3.19
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.22	0.03	0.02	1.60	2.57
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	55.67	0.98	0.61	1.62	2.63
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	29,238.31	695.35	505.48	1.38	1.89
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.25	0.09	0.06	1.49	2.22
Summary statistics						
Minimum		†	†	†	1.07	1.16
25th percentile		†	†	†	1.39	1.92
Median		†	†	†	1.47	2.17
75th percentile		†	†	†	1.52	2.32
Maximum		†	†	†	1.79	3.19

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-11. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for female B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	331.46	0.66	0.47	1.43	2.04
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	19,544.52	177.45	176.64	1.00	1.01
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	52.59	0.50	0.49	1.03	1.07
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	27.93	0.63	0.44	1.44	2.07
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	22,140.18	233.47	211.98	1.10	1.21
NPSAS institutional control: Public	CONTROL = 1	62.49	0.48	0.47	1.02	1.05
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	15.08	0.42	0.35	1.21	1.45
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	26.69	0.65	0.43	1.49	2.23
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	44.17	0.72	0.49	1.48	2.20
Age, as of BA completion	B2AGEATBA (mean)	26.13	0.11	0.07	1.52	2.30
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	55.18	0.75	0.49	1.54	2.36
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	39.31	0.17	0.12	1.41	1.98
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	61.93	0.74	0.48	1.56	2.45
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	73.24	0.61	0.43	1.40	1.97
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	17.17	0.44	0.37	1.19	1.41
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	221.41	6.01	4.23	1.42	2.02
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	46,562.92	399.76	277.20	1.44	2.08
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.20	0.65	0.43	1.51	2.27
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.01	0.01	1.64	2.70
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.10	0.28	0.20	1.45	2.11
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.31	0.41	0.26	1.61	2.59
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	9.51	0.44	0.29	1.54	2.38
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	291.19	10.43	5.43	1.92	3.68
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	316.91	8.94	5.66	1.58	2.49

See notes at end of table.

**Table L-11. Design effects for selected variables using analysis weight B (B&B:16/20 respondents) for female B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	75.67	0.67	0.42	1.59	2.54
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.47	0.02	0.01	1.59	2.52
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	56.44	0.73	0.49	1.51	2.27
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	35,990.12	496.76	416.17	1.19	1.42
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.49	0.12	0.07	1.69	2.86
Summary statistics						
Minimum		†	†	†	1.00	1.01
25th percentile		†	†	†	1.40	1.97
Median		†	†	†	1.48	2.20
75th percentile		†	†	†	1.56	2.45
Maximum		†	†	†	1.92	3.68

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-12. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	327.07	0.62	0.39	1.59	2.51
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	18,212.60	#	†	†	†
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	50.88	#	0.39	#	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	28.51	0.47	0.35	1.33	1.76
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	20,846.28	100.46	168.85	0.60	0.35
NPSAS institutional control: Public	CONTROL = 1	63.61	#	0.38	#	#
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	21.93	0.24	0.32	0.75	0.56
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	24.14	0.50	0.34	1.49	2.23
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	41.54	0.58	0.39	1.50	2.26
Age, as of BA completion	B2AGEATBA (mean)	26.01	0.07	0.06	1.35	1.81
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	57.86	0.60	0.39	1.55	2.41
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.31	0.14	0.10	1.40	1.96
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	63.89	0.59	0.38	1.58	2.49
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	73.86	0.51	0.34	1.48	2.20
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.92	0.32	0.27	1.17	1.36
Sex assigned at birth: Female	B2SEX = 2	57.40	0.04	0.39	0.11	0.01
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	235.75	5.14	3.52	1.46	2.13
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	51,570.55	412.54	280.21	1.47	2.17
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	25.27	0.48	0.34	1.40	1.95
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.01	#	1.52	2.32
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.74	0.23	0.16	1.46	2.12
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.99	0.35	0.20	1.73	3.00
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	11.10	0.37	0.25	1.52	2.32
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	297.79	8.05	4.35	1.85	3.41
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	327.72	6.60	4.49	1.47	2.17

See notes at end of table.

**Table L-12. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	74.25	0.56	0.34	1.62	2.63
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.39	0.02	0.01	1.75	3.07
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	56.10	0.59	0.39	1.52	2.31
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	33,262.88	368.78	331.89	1.11	1.23
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.39	0.08	0.05	1.57	2.47
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.33	1.76
Median		†	†	†	1.47	2.17
75th percentile		†	†	†	1.55	2.41
Maximum		†	†	†	1.85	3.41

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).



**Table L-13. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members at public institutions: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	322.79	0.86	0.61	1.42	2.01
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	16,546.48	#	†	†	†
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	51.19	#	0.62	#	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	29.52	0.66	0.57	1.16	1.34
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	18,534.03	128.52	244.52	0.53	0.28
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	23.63	0.43	0.53	0.82	0.67
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEg = 5	24.04	0.72	0.53	1.36	1.84
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	41.95	0.81	0.61	1.32	1.74
Age, as of BA completion	B2AGEATBA (mean)	25.46	0.09	0.08	1.20	1.45
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	57.65	0.83	0.61	1.35	1.82
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.32	0.18	0.15	1.17	1.37
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	65.52	0.81	0.59	1.37	1.87
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	74.40	0.72	0.54	1.33	1.78
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	14.40	0.44	0.44	1.01	1.03
Sex assigned at birth: Female	B2SEX = 2	56.36	0.44	0.62	0.72	0.52
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	222.96	7.35	5.50	1.34	1.78
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	50,232.05	520.08	373.87	1.39	1.94
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.16	0.65	0.55	1.20	1.43
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.14	0.01	0.01	1.49	2.21
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.70	0.31	0.24	1.28	1.65
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	79.13	0.47	0.32	1.47	2.17
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	10.94	0.53	0.39	1.36	1.84
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	226.62	7.31	5.65	1.29	1.67
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	304.04	9.71	7.16	1.35	1.84

See notes at end of table.

**Table L-13. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members at public institutions: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	72.66	0.74	0.55	1.34	1.79
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.39	0.03	0.02	1.62	2.62
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	59.18	0.81	0.61	1.32	1.75
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	31,153.68	505.65	513.92	0.98	0.97
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.40	0.11	0.08	1.36	1.85
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.16	1.35
Median		†	†	†	1.33	1.77
75th percentile		†	†	†	1.36	1.85
Maximum		†	†	†	1.62	2.62

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-14. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members at private nonprofit institutions: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	335.34	1.04	0.67	1.55	2.42
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	18,539.84	#	†	†	†
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	45.66	#	0.70	#	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	28.53	0.76	0.63	1.20	1.43
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	22,568.48	206.91	324.29	0.64	0.41
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	20.35	0.59	0.56	1.05	1.11
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	24.53	0.72	0.60	1.19	1.42
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	42.32	0.85	0.69	1.23	1.52
Age, as of BA completion	B2AGEATBA (mean)	25.46	0.12	0.10	1.19	1.43
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	57.03	0.88	0.69	1.27	1.62
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.18	0.22	0.18	1.24	1.53
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	67.04	0.77	0.66	1.16	1.35
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	73.71	0.72	0.62	1.17	1.36
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	14.34	0.57	0.49	1.17	1.36
Sex assigned at birth: Female	B2SEX = 2	58.90	0.92	0.69	1.33	1.77
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	246.42	8.52	7.17	1.19	1.41
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	53,960.25	861.86	635.47	1.36	1.84
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.78	0.71	0.62	1.14	1.30
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.16	0.01	0.01	1.24	1.53
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.22	0.39	0.28	1.42	2.03
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.89	0.49	0.36	1.34	1.80
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	12.15	0.59	0.46	1.29	1.65
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	395.12	12.80	9.41	1.36	1.85
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	376.76	11.09	9.48	1.17	1.37

See notes at end of table.

**Table L-14. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members at private nonprofit institutions: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	77.71	0.76	0.58	1.31	1.71
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.47	0.03	0.02	1.29	1.65
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	52.07	0.89	0.70	1.27	1.61
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	35,123.69	623.82	622.93	1.00	1.00
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.40	0.12	0.09	1.30	1.70
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.17	1.36
Median		†	†	†	1.23	1.52
75th percentile		†	†	†	1.31	1.70
Maximum		†	†	†	1.55	2.42

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-15. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members at private for-profit institutions: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	330.67	1.66	0.86	1.94	3.74
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	33,908.05	#	†	†	†
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	73.50	#	0.64	#	#
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	17.91	0.99	0.56	1.77	3.14
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	36,359.21	343.81	358.18	0.96	0.92
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	12.11	1.36	0.47	2.87	8.22
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	23.24	1.11	0.61	1.81	3.27
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	33.40	1.39	0.69	2.03	4.14
Age, as of BA completion	B2AGEATBA (mean)	34.42	0.56	0.15	3.82	14.60
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	64.17	1.42	0.70	2.03	4.13
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.83	0.28	0.19	1.50	2.25
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	31.43	2.65	0.68	3.93	15.47
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	69.02	1.09	0.67	1.62	2.61
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	6.85	0.55	0.37	1.50	2.25
Sex assigned at birth: Female	B2SEX = 2	60.75	1.93	0.71	2.72	7.39
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	280.52	8.46	7.61	1.11	1.23
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	53,754.81	917.43	507.64	1.81	3.27
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	8.56	0.54	0.41	1.34	1.79
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.16	0.01	0.01	1.17	1.37
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	10.18	0.48	0.33	1.46	2.13
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.04	0.62	0.43	1.43	2.03
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	7.63	0.70	0.39	1.82	3.30
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	569.34	93.12	10.33	9.02	81.28
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	325.52	8.80	7.82	1.13	1.27

See notes at end of table.

**Table L-15. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for all B&B:16-eligible sample members at private for-profit institutions: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	73.63	1.50	0.64	2.34	5.47
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	1.97	0.05	0.02	2.58	6.66
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	44.05	1.46	0.72	2.03	4.11
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	45,980.47	530.90	572.41	0.93	0.86
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.14	0.07	0.05	1.34	1.79
Summary statistics						
Minimum		†	†	†	#	#
25th percentile		†	†	†	1.34	1.79
Median		†	†	†	1.79	3.20
75th percentile		†	†	†	2.19	4.81
Maximum		†	†	†	9.02	81.28

† Not applicable.

# Rounds to zero.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&amp;B:16/20).

**Table L-16. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for White B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	332.42	0.72	0.48	1.51	2.28
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	17,696.55	164.16	169.20	0.97	0.94
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	43.59	0.45	0.49	0.92	0.84
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	30.57	0.65	0.46	1.43	2.05
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	20,831.86	214.46	214.62	1.00	1.00
NPSAS institutional control: Public	CONTROL = 1	63.68	0.41	0.48	0.85	0.73
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	22.04	0.43	0.41	1.04	1.07
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	23.82	0.66	0.42	1.57	2.46
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	40.32	0.72	0.49	1.48	2.20
Age, as of BA completion	B2AGEATBA (mean)	25.77	0.10	0.07	1.40	1.97
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	59.22	0.73	0.49	1.51	2.27
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.43	0.16	0.12	1.34	1.79
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	63.52	0.73	0.48	1.54	2.36
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	77.61	0.64	0.41	1.54	2.37
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.68	0.47	0.34	1.38	1.92
Sex assigned at birth: Female	B2SEX = 2	55.78	0.46	0.49	0.93	0.87
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	242.71	6.50	4.52	1.44	2.07
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	52,495.30	503.06	350.06	1.44	2.07
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	24.63	0.59	0.43	1.39	1.93
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.01	0.01	1.45	2.10
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.87	0.30	0.21	1.44	2.08
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	81.75	0.35	0.24	1.45	2.09
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	11.37	0.47	0.31	1.51	2.27
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	287.06	8.31	5.15	1.61	2.61
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	350.67	8.89	6.00	1.48	2.19

See notes at end of table.

**Table L-16. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for White B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	75.01	0.67	0.43	1.56	2.45
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.41	0.02	0.01	1.59	2.52
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	56.71	0.76	0.49	1.56	2.42
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	32,248.22	459.57	406.64	1.13	1.28
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.30	0.08	0.05	1.46	2.12
Summary statistics						
Minimum		†	†	†	0.85	0.73
25th percentile		†	†	†	1.34	1.79
Median		†	†	†	1.44	2.08
75th percentile		†	†	†	1.51	2.28
Maximum		†	†	†	1.61	2.61

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



**Table L-17. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for Black B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	303.80	1.81	1.15	1.57	2.48
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	30,100.26	556.53	432.97	1.29	1.65
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	77.94	1.60	0.92	1.74	3.03
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	22.17	1.48	0.92	1.61	2.58
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	31,803.43	676.84	481.09	1.41	1.98
NPSAS institutional control: Public	CONTROL = 1	57.97	1.61	1.10	1.47	2.17
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	14.06	1.25	0.77	1.62	2.62
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	29.94	1.63	1.02	1.60	2.57
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	45.52	1.76	1.11	1.59	2.53
Age, as of BA completion	B2AGEATBA (mean)	28.93	0.31	0.21	1.48	2.20
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	53.05	1.75	1.11	1.58	2.49
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.93	0.52	0.34	1.54	2.38
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	58.08	1.94	1.10	1.77	3.13
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	64.05	1.74	1.07	1.64	2.68
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.70	1.26	0.76	1.65	2.72
Sex assigned at birth: Female	B2SEX = 2	65.68	1.51	1.05	1.44	2.06
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	220.30	16.47	10.41	1.58	2.50
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	44,338.05	1,053.27	600.62	1.75	3.08
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	21.58	1.46	0.91	1.60	2.55
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.02	0.01	1.30	1.68
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	11.26	0.61	0.38	1.59	2.53
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	73.85	1.28	0.64	1.98	3.93
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	9.46	1.09	0.65	1.68	2.81
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	278.49	24.39	11.43	2.13	4.56
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	263.38	18.73	11.19	1.67	2.80

See notes at end of table.

**Table L-17. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for Black B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	71.13	1.66	1.01	1.65	2.71
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.42	0.06	0.03	1.87	3.48
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	44.78	1.56	1.10	1.42	2.01
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	50,095.14	1,434.66	1,054.99	1.36	1.85
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.36	0.20	0.13	1.48	2.19
Summary statistics						
Minimum		†	†	†	1.29	1.65
25th percentile		†	†	†	1.48	2.19
Median		†	†	†	1.59	2.54
75th percentile		†	†	†	1.67	2.80
Maximum		†	†	†	2.13	4.56

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-18. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for Hispanic B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	318.46	1.65	1.03	1.60	2.57
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	16,855.02	514.95	352.49	1.46	2.13
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	70.90	1.37	0.94	1.46	2.13
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	21.85	1.43	0.85	1.68	2.81
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	18,501.74	587.81	398.73	1.47	2.17
NPSAS institutional control: Public	CONTROL = 1	64.99	1.46	0.99	1.48	2.20
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	19.27	1.10	0.81	1.35	1.83
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	22.90	1.34	0.87	1.54	2.37
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	39.21	1.59	1.01	1.58	2.50
Age, as of BA completion	B2AGEATBA (mean)	26.05	0.19	0.13	1.52	2.31
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	60.15	1.62	1.01	1.60	2.57
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	39.61	0.41	0.23	1.74	3.04
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	62.50	1.93	1.00	1.93	3.73
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	68.40	1.53	0.96	1.59	2.53
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	18.41	1.23	0.80	1.54	2.37
Sex assigned at birth: Female	B2SEX = 2	58.81	1.68	1.02	1.66	2.74
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	207.03	10.79	7.12	1.51	2.29
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	48,482.87	980.50	607.62	1.61	2.60
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	23.39	1.14	0.87	1.31	1.71
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.14	0.02	0.01	1.46	2.14
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.21	0.67	0.46	1.47	2.15
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	76.63	0.86	0.55	1.56	2.44
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	10.42	1.07	0.63	1.69	2.86
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	295.58	17.95	12.37	1.45	2.11
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	264.55	13.69	9.08	1.51	2.28

See notes at end of table.

**Table L-18. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for Hispanic B&B:16-eligible sample members: 2020—  
Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	74.89	1.59	0.90	1.77	3.13
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.38	0.04	0.03	1.52	2.30
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	59.56	1.50	1.01	1.48	2.19
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	31,367.97	1,317.54	838.51	1.57	2.47
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.32	0.25	0.12	2.16	4.68
Summary statistics						
Minimum		†	†	†	1.31	1.71
25th percentile		†	†	†	1.47	2.17
Median		†	†	†	1.54	2.37
75th percentile		†	†	†	1.61	2.60
Maximum		†	†	†	2.16	4.68

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-19. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for Asian B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	330.60	1.86	1.31	1.42	2.01
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	8,779.94	692.09	432.31	1.60	2.56
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	42.36	2.16	1.53	1.41	1.99
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	29.97	2.08	1.42	1.46	2.14
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	10,425.92	811.27	564.97	1.44	2.06
NPSAS institutional control: Public	CONTROL = 1	66.63	1.85	1.46	1.27	1.60
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	34.96	2.00	1.48	1.35	1.83
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	24.46	1.92	1.33	1.44	2.08
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	50.21	2.02	1.55	1.30	1.69
Age, as of BA completion	B2AGEATBA (mean)	24.11	0.17	0.13	1.29	1.66
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	49.29	2.01	1.55	1.29	1.68
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	39.47	0.70	0.42	1.65	2.71
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	75.69	2.11	1.33	1.58	2.51
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	68.44	2.02	1.44	1.40	1.96
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	9.10	1.15	0.89	1.29	1.67
Sex assigned at birth: Female	B2SEX = 2	56.34	2.16	1.54	1.40	1.96
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	266.85	22.59	13.82	1.63	2.67
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	60,088.70	2,254.06	1,681.75	1.34	1.80
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	37.90	1.94	1.51	1.29	1.65
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.12	0.02	0.02	1.52	2.32
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.12	0.70	0.55	1.28	1.65
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	66.87	1.47	0.95	1.55	2.41
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	12.63	1.71	1.03	1.66	2.76
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	370.14	30.77	21.87	1.41	1.98
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	342.23	28.84	19.97	1.44	2.09

See notes at end of table.

**Table L-19. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for Asian B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	71.81	2.25	1.40	1.61	2.59
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.15	0.06	0.04	1.48	2.18
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	61.91	2.46	1.51	1.63	2.66
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	23,089.86	1,714.98	1,418.75	1.21	1.46
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	1.01	0.49	0.31	1.57	2.46
Summary statistics						
Minimum		†	†	†	1.21	1.46
25th percentile		†	†	†	1.30	1.69
Median		†	†	†	1.43	2.04
75th percentile		†	†	†	1.57	2.46
Maximum		†	†	†	1.66	2.76

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-20. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for B&B:16-eligible sample members of another race: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	319.47	3.68	1.94	1.90	3.62
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	18,936.46	1,070.56	663.35	1.61	2.60
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	55.25	3.03	1.86	1.62	2.64
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	28.86	2.79	1.70	1.64	2.70
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	20,763.39	1,110.54	749.93	1.48	2.19
NPSAS institutional control: Public	CONTROL = 1	66.70	2.81	1.77	1.59	2.53
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	23.10	2.56	1.58	1.62	2.63
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	17.96	2.24	1.44	1.56	2.43
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	41.59	3.12	1.85	1.69	2.86
Age, as of BA completion	B2AGEATBA (mean)	26.14	0.38	0.26	1.45	2.09
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	57.62	3.13	1.85	1.69	2.86
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	40.45	0.75	0.50	1.50	2.24
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	66.09	2.90	1.77	1.64	2.68
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	65.48	2.66	1.78	1.49	2.23
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	13.84	1.77	1.29	1.37	1.88
Sex assigned at birth: Female	B2SEX = 2	60.26	3.16	1.83	1.72	2.96
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	266.34	30.12	18.39	1.64	2.68
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	48,299.59	1,724.68	1,247.26	1.38	1.91
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.43	2.80	1.65	1.69	2.87
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.17	0.04	0.02	1.53	2.35
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.42	1.13	0.70	1.61	2.58
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	77.96	1.46	0.97	1.51	2.29
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	9.99	2.02	1.12	1.80	3.23
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	394.11	35.93	28.00	1.28	1.65
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	365.61	27.07	20.67	1.31	1.72

See notes at end of table.

**Table L-20. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for B&B:16-eligible sample members of another race: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	72.44	2.72	1.67	1.63	2.65
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.49	0.07	0.05	1.29	1.66
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	53.13	3.09	1.87	1.65	2.73
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	32,675.67	1,882.24	1,406.37	1.34	1.79
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.91	0.56	0.36	1.58	2.49
Summary statistics						
Minimum		†	†	†	1.28	1.65
25th percentile		†	†	†	1.48	2.19
Median		†	†	†	1.60	2.56
75th percentile		†	†	†	1.64	2.70
Maximum		†	†	†	1.90	3.62

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics. "Another race" for this subset of sample members is defined as non-White, non-Black, non-Hispanic, and non-Asian.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).



**Table L-21. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for male B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	321.04	1.07	0.64	1.66	2.74
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	16,420.18	243.05	215.91	1.13	1.27
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	48.48	0.68	0.63	1.09	1.18
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	29.28	0.88	0.57	1.53	2.35
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	19,081.83	332.26	266.40	1.25	1.56
NPSAS institutional control: Public	CONTROL = 1	65.16	0.66	0.60	1.11	1.23
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	31.31	0.62	0.58	1.07	1.15
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	20.51	0.75	0.51	1.47	2.17
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	37.47	0.87	0.61	1.44	2.07
Age, as of BA completion	B2AGEATBA (mean)	25.86	0.11	0.08	1.31	1.73
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	62.01	0.87	0.61	1.43	2.04
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	41.63	0.22	0.15	1.49	2.22
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	66.52	0.85	0.59	1.44	2.08
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	74.75	0.84	0.55	1.54	2.37
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	8.98	0.50	0.36	1.40	1.97
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	252.72	9.56	5.82	1.64	2.70
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	58,452.24	848.16	538.55	1.57	2.48
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	23.74	0.80	0.53	1.49	2.23
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.14	0.01	0.01	1.37	1.87
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	12.26	0.37	0.27	1.39	1.92
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	79.70	0.55	0.32	1.68	2.84
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	13.30	0.61	0.43	1.43	2.04
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	304.66	10.11	6.97	1.45	2.10
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	342.48	10.48	7.20	1.45	2.12

See notes at end of table.

**Table L-21. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for male B&B:16-eligible sample members: 2020—Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	72.43	1.00	0.56	1.77	3.15
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.24	0.03	0.02	1.62	2.62
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	55.81	1.03	0.62	1.65	2.73
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	29,336.68	702.73	519.95	1.35	1.83
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.28	0.10	0.07	1.50	2.25
Summary statistics						
Minimum		†	†	†	1.07	1.15
25th percentile		†	†	†	1.37	1.87
Median		†	†	†	1.45	2.10
75th percentile		†	†	†	1.54	2.37
Maximum		†	†	†	1.77	3.15

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).

**Table L-22. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for female B&B:16-eligible sample members: 2020**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Cumulative undergraduate GPA	GPA (mean)	331.54	0.66	0.48	1.39	1.92
Cumulative amount borrowed in federal student loans, as of 2020	FEDCUM1 (mean)	19,543.02	180.06	180.94	1.00	0.99
Cumulative amount of Pell Grant funds: Ever received	PELLCUM > 0	52.66	0.51	0.50	1.01	1.02
Highest education attained by either parent: Bachelor's degree	PAREduc = 6	27.93	0.64	0.45	1.42	2.03
Total amount in loans borrowed for undergraduate degree	BORAMT1 (mean)	22,155.93	242.28	217.61	1.11	1.24
NPSAS institutional control: Public	CONTROL = 1	62.46	0.49	0.49	1.02	1.03
Field of study: Undergraduate (10 categories): STEM	B2MAJORS4Y = 1,2,3	14.97	0.43	0.36	1.20	1.44
Highest degree completed between BA completion and B&B:16/20 interview: Master's degree	B2HIDEG = 5	26.84	0.67	0.44	1.51	2.28
Enrolled in a degree/certificate program, within 4 years of BA completion: Enrolled	B2ENRPG = 1	44.56	0.74	0.50	1.49	2.21
Age, as of BA completion	B2AGEATBA (mean)	26.12	0.11	0.07	1.46	2.12
Employment and enrollment history, within 4 years of BA completion: Had employment only	B2EEHIST = 2	54.79	0.77	0.50	1.55	2.41
Hours worked per week in all current jobs, 4 years after BA completion	B2ALLHRS4YRS (mean)	39.29	0.18	0.13	1.43	2.04
Family status, 4 years after BA completion (considering all dependents): Unmarried, no dependent	B2MARCHB = 1	61.94	0.73	0.49	1.51	2.27
Had retirement account, as of B&B:16/20 survey	B2RETIRE = 1	73.21	0.64	0.44	1.45	2.11
Currently working as a regular classroom teacher, 4 years after BA completion	B2CURREGTCH = 1	17.58	0.43	0.38	1.14	1.29
Current monthly payment on federal student loans, 4 years after BA completion	B2FEDPAY (mean)	224.40	6.27	4.40	1.42	2.03
Most recent employer, within 4 years of BA completion: Ending/recent annualized pay	B2YR4SALRCNT (mean)	46,444.67	411.90	283.71	1.45	2.11
Took a graduate or professional entrance exam, 4 years after BA completion	B2GRDEXM = 1	26.41	0.66	0.44	1.50	2.24
Number of colleges, universities, or trade schools enrolled, within 4 years of BA completion	B2NUMSCH (mean)	1.15	0.01	0.01	1.69	2.85
Months between BA completion and first postbachelor's enrollment, within 4 years of BA completion	B2BATOPBA (mean)	13.04	0.28	0.20	1.42	2.03
Percentage of months employed, within 4 years of BA completion	B2PCEMP (mean)	78.46	0.42	0.26	1.61	2.61
Most recent job, within 4 years of BA completion: Occupation, 23 categories: Business and financial operation occupations	B2OCC23RCNT = 2	9.47	0.44	0.29	1.51	2.28
Distance (in miles) between residence and BA degree institution, as of B&B:16/20 survey	B2DISTINSTR (mean)	292.63	10.71	5.57	1.92	3.69
Current monthly payment on student loans, as of 2020	B2LNPAY (mean)	317.37	9.32	5.74	1.62	2.64

See notes at end of table.

**Table L-22. Design effects for selected variables using analysis weight C (B&B:16/20 and B&B:16/17 respondents) for female B&B:16-eligible sample members: 2020—  
Continued**

Variable	Defined as	Percent or dollar estimate	Design standard error	Simple random sample standard error	DEFT <sup>1</sup>	DEFF <sup>2</sup>
Satisfaction with choice of undergraduate major, as of B&B:16/20 survey: Satisfied or very satisfied with major	B2MAJCHO = 1,2	75.59	0.70	0.43	1.62	2.61
Number of employers, within 4 years of BA completion	B2NUMEMP (mean)	2.50	0.02	0.01	1.59	2.53
Undergraduate education worth the financial cost, as of B&B:16/20 survey	B2WORTHUG = 1	56.32	0.73	0.50	1.46	2.15
Cumulative amount borrowed for undergraduate and graduate education, 4 years after BA completion	B2BORAMT3 (mean)	36,177.07	516.64	429.36	1.20	1.45
Spent time not working for pay due to coronavirus pandemic, within 4 years of BA completion	B2CVNEMP = 1	0.47	0.11	0.07	1.66	2.74
Summary statistics						
Minimum		†	†	†	1.00	0.99
25th percentile		†	†	†	1.39	1.92
Median		†	†	†	1.46	2.12
75th percentile		†	†	†	1.55	2.41
Maximum		†	†	†	1.92	3.69

† Not applicable.

<sup>1</sup> DEFT is the square root of the survey design effect (DEFF) and can also be defined as the ratio of the design-based standard error over the standard error that would have been obtained from a simple random sample of the same size (if that were practical).

<sup>2</sup> DEFF, 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 were practical).

NOTE: BA = bachelor's degree; GPA = grade point average; NPSAS = National Postsecondary Student Aid Study; STEM = science, technology, engineering, and mathematics.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (B&B:16/20).