

Technical Appendix

Indicators of Higher Education Equity in the United States: 2026 Historical Trend Report

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Change Log

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This Appendix includes technical information for replicating the data visualizations presented in this report. It includes additional figures, tables, and methodological notes not included in the section of this report. Notes and Figures are ordered under the headings of the sections for which they were presented in the main body of the report.

Setting the Stage Technical Notes

Statistical Testing Results

Table A1 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant. See the *Statistical Testing* and *Variance and Standard Error Calculations* section for more information on the methods used to calculate the values used for statistical testing. Most estimates are derived from federal surveys that employ complex sample designs, which require extra effort to compute the inputs required for accurate statistical testing.

Table A1: Statistical test results verifying the differences mentioned in the Setting the Stage Chapter

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold	
Benefits of Fairness and Equity	S.3	Health Assistance: Medicaid/CHIP versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	183.19	0.0000	0.0500	*
Benefits of Fairness and Equity	S.3	Nutrition Assistance: SNAP versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	85.50	0.0000	0.0500	*
Benefits of Fairness and Equity	S.3	Nutrition Assistance: WIC versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	83.50	0.0000	0.0500	*
Benefits of Fairness and Equity	S.3	Cash Assistance: SSI versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	52.87	0.0000	0.0500	*
Benefits of Fairness and Equity	S.3	Cash Assistance: TANF versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	3.70	0.0061	0.0500	*
Benefits of Fairness and Equity	S.3	Shelter Assistance: Energy Aid versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	7.57	0.0000	0.0500	*

Benefits of Fairness and Equity	S.3	Shelter Assistance: Rental Subsidies versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	14.22	0.0000	0.0500	*
Benefits of Fairness and Equity	S.3	Social Insurance: Social Security versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	38.62	0.0000	0.0500	*
Benefits of Fairness and Equity	S.3	Social Insurance: Medicare versus Education level differences (reduced usage with higher levels)	Logistic Regression (F-test)	37.88	0.0000	0.0500	*
Benefits of Fairness and Equity	S.4	Prisoners: College degree or more versus Prisoners: Less than high school	t Test	49.87	0.0000	0.0500	*
Benefits of Fairness and Equity	S.4	Prisoners: College degree or more versus Prisoners: High school graduate	t Test	67.17	0.0000	0.0500	*
Benefits of Fairness and Equity	S.4	Prisoners: College degree or more versus Prisoners: Some college	t Test	82.20	0.0000	0.0500	*
Benefits of Fairness and Equity	S.5	College Graduate versus All other groups	No test - cited directly from the source study (Sylte et al., 2025)				
Measuring Fairness and Equity: First-Generation Students	S.6	Percentage of First Generation in 1996 versus Percentage of First Generation in 2020	t Test	17.50	0.0000	0.0500	*
Measuring Fairness and Equity: First-Generation Students	S.6	Public 4-year first-generation percent versus Public 2-year first-generation percent	t Test	-25.17	0.0000	0.0083	*
Measuring Fairness and Equity: First-Generation Students	S.6	Private nonprofit 4-year first-generation percent versus Public 2-year first-generation percent	t Test	-21.83	0.0000	0.0083	*
Measuring Fairness and Equity: First-Generation Students	S.6	Public 4-year first-generation percent versus Private not-for-profit less-than-4-year first-generation percent	t Test	-24.49	0.0000	0.0083	*
Measuring Fairness and Equity: First-Generation Students	S.6	Private nonprofit 4-year first generation percent versus Private not-for-profit less-than-4-year first generation percent	t Test	-23.70	0.0000	0.0083	*
Measuring Fairness and Equity: First-Generation Students	S.6	Public 4-year first-generation percent versus Private for-profit first-generation percent	t Test	-13.92	0.0000	0.0083	*

Measuring Fairness and Equity: First-Generation Students	S.6	Private nonprofit 4-year first-generation percent versus Private for-profit first-generation percent	t Test	-15.89	0.0000	0.0083	*
Measuring Fairness and Equity: First-Generation Students	S.7	Percentage of First Generation in 1996 versus Percentage of First Generation in 2020	t Test	17.50	0.0000	0.0500	*
Measuring Fairness and Equity: Race	S.8	Low-income student versus High-income students	t Test	-21.85	0.0000	0.0500	*
Measuring Fairness and Equity: Race	S.8	First-generation students versus Students whose parents have a bachelor's degree or above	t Test	-26.37	0.0000	0.0167	*
Measuring Fairness and Equity: Race	S.8	First-generation students low-income students versus Non-first generation and high-income students	t Test	-37.19	0.0000	0.0167	*
Measuring Fairness and Equity: Race	S.8	First-generation and high-income students versus Non-first generation and high-income students	t Test	-20.10	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.9	Asian versus 60% (Below)	t Test	-4.90	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.9	White versus 60% (Below)	t Test	-5.09	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.9	Black/African American versus 60% (Above)	t Test	7.22	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.9	American Indian/Alaskan Native versus 60% (Above)	t Test	2.21	0.0271	0.0033	NS
Measuring Fairness and Equity: Race	S.9	Hispanic or Latino versus 60% (Above)	t Test	14.24	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.10	Total percentage in 2012 versus Total percentage in 2022	t Test	37.10	0.0000	0.0071	*
Measuring Fairness and Equity: Race	S.10	Asian versus 2022: 50% (Below)	t Test	-49.81	0.0000	0.0071	*
Measuring Fairness and Equity: Race	S.10	White versus 2022: 50% (Below)	t Test	-34.04	0.0000	0.0071	*
Measuring Fairness and Equity: Race	S.10	Black/African American versus 2022: 50% (Above)	t Test	28.92	0.0000	0.0071	*
Measuring Fairness and Equity: Race	S.10	Pacific Islander versus 2022: 50% (Above)	t Test	4.87	0.0000	0.0071	*

Measuring Fairness and Equity: Race	S.10	American Indian/Alaskan Native versus 2022: 50% (Above)	t Test	12.84	0.0000	0.0071	*
Measuring Fairness and Equity: Race	S.10	Hispanic or Latino versus 2022: 50% (Above)	t Test	55.45	0.0000	0.0071	*
Measuring Fairness and Equity: Race	S.11	1972 Asian versus 2009 Asian	t Test	6.27	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.11	1972 White versus 2009 White	t Test	15.56	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.11	1972 Black/African American versus 2009 Black/African American	t Test	7.11	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.11	1972 Hispanic or Latino versus 2009 Hispanic or Latino	t Test	6.32	0.0000	0.0033	*
Measuring Fairness and Equity: Race	S.11	1990 White Attainment versus 2024 White Attainment	t Test	-70.41	0.0000	0.0050	*
Measuring Fairness and Equity: Race	S.11	1990 Black/African American Attainment versus 2024 Black/African American Attainment	t Test	-78.31	0.0000	0.0050	*
Measuring Fairness and Equity: Race	S.11	1990 Asian Attainment versus 2024 Asian Attainment	t Test	-84.15	0.0000	0.0050	*
Measuring Fairness and Equity: Race	S.11	1990 Hispanic Attainment versus 2024 Hispanic Attainment	t Test	-62.80	0.0000	0.0050	*
Measuring Fairness and Equity: Race	S.12	High Income Quartile: Black/African American versus High Income Quartile: White	t Test	-9.67	0.0000	0.0500	*
Measuring Fairness and Equity: Race	S.12	High Income Quartile: Hispanic versus High Income Quartile: White	t Test	-12.34	0.0000	0.0500	*
Measuring Fairness and Equity: Race	S.12	High Income Quartile: Black/African American versus High Income Quartile: Asian	t Test	-6.47	0.0000	0.0500	*
Measuring Fairness and Equity: Race	S.12	High Income Quartile: Hispanic versus High Income Quartile: Asian	t Test	-6.98	0.0000	0.0500	*

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020), in order to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Figure S.1: Unmet Need

The estimates for Figure S.1 were calculated using the National Center for Education Statistics, National Postsecondary Student Aid Study (National Center for Education Statistics, 2020). Estimates are based on all students in the survey, regardless of the type of institution attended (e.g., public 4-year, private non-profit 4-year, 2-year public, etc.) and the student's dependency status. The unmet need is calculated by subtracting the total grant aid (TOTGRT) from the total cost of education (BUDJETAJ) to obtain the net cost of attendance accounting for grants (NETCST3). This was subtracted from the expected family contribution (EFC) from the Free Application for Federal Student Aid (FAFSA). A positive value indicates that financial aid from scholarships and grants (which do not need to be repaid) did not cover the full cost of education, and the student's family does not have the resources to cover the gap under the federal need formulas. A negative value for unmet financial need indicates that the student received funds despite having sufficient financial resources to cover the cost of attendance.

The estimates and standard errors used for Figure S.1 are displayed in Table A2. Note that adjusted unmet need was used in the final figure. The adjusted unmet need estimates were further adjusted to cap the negative unmet need, ensuring that the maximum negative values do not exceed the cost of attendance. The income quartile distributions are as follows:

- Lowest Quartile: \$0 - \$17,158
- Second Quartile: \$17,159 - \$40,982
- Third Quartile: \$40,982 - \$93,080
- Top Quartile: Above \$93,081

The source data for this table was generated on the Datalab Powerstats website (<https://nces.ed.gov/datalab>). The quick retrieve code to replicate the source data for this analysis is: kagvdd.

Table A2: Estimates and standard errors for Figure S.1: Average unmet financial need of students attending postsecondary institutions after taking into account grants and scholarships in 2020 dollars, by income quartile: 2019-2020 academic year (Indicator STS 13)

	Total Grants	Net Price Minus Grants	Expected Family Contribution	Unmet Need	Adjusted Unmet Need
Estimates					
Total	5,927.51	16,261.67	13,148.43	3,113.25	3,113.25
Lowest Income Quartile	5,936.65	12,655.20	317.73	12,337.47	12,337.47
Second Income Quartile	6,266.68	12,679.00	2,018.96	10,660.04	10,660.04
Third Income Quartile	5,865.05	15,388.16	7,772.97	7,615.19	7,615.19
Highest Income Quartile	5,641.67	24,355.04	42,488.93	(18,133.89)	(5,641.67)
Standard Errors					
Total	86.13	143.40	185.12	234.17	234.17
Lowest Income Quartile	90.75	173.61	53.43	181.65	181.65
Second Income Quartile	108.82	147.92	48.15	155.56	155.56
Third Income Quartile	135.59	210.51	108.24	236.70	236.70
Highest Income Quartile	148.83	300.52	610.95	680.86	148.83

NOTES: Weighted estimates and standard errors have been calculated using methods that account for the complex sample design employed during data collection. A positive value indicates that financial aid from scholarships and grants (which do not need to be repaid) did not cover the full cost of education, and the student's or the student's family does not have the resources to cover the gap under the federal need formulas. A negative value for unmet financial need indicates that the student received funds despite having sufficient financial resources to cover the cost of attendance. Adjusted unmet need is a more conservative estimate of unmet need, considering the maximum possible cost of attendance.

SOURCE: National Postsecondary Student Aid Study, 2020 Undergraduate Student, National Center for Education Statistics (National Center for Education Statistics, 2020b, 2025a). Analysis by authors.

Figure S.2: Life-time earnings

The data on lifetime earnings are derived from the Georgetown University Center on Education and the Workforce (CEW), which uses data from the American Community Survey (ACS) of the U.S. Census Bureau from 2009 to 2019 to calculate synthetic lifetime earnings. The data are limited to individuals aged 25 to 64 years who worked full-time and for whom earnings data were available. Their sample consisted of 1,200 observations to produce an average of 30 observations per year (Carnevale et al., 2021). The earnings data were adjusted using a regional price index. For this report, we inflated the dollar amounts to 2024 dollars.

Figure S.3: Means-tested social safety net programs

The U.S. Census Bureau conducts an annual longitudinal survey called the Survey of Income and Program Participation (SIPP) that “provides comprehensive information on the dynamics of income, employment, household composition, and government program participation. SIPP is also a leading source of data on economic well-being, family dynamics, education, wealth, health insurance, child care, and food security” (U.S. Census Bureau, 2025e). Data compiled for 2022 provides the percentage and population for those who receive social safety net benefits by educational attainment. These programs include: Medicaid/Children’s Health Insurance Program (CHIP), the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the free or reduced price school lunch program, Special Supplemental Nutrition (SSI), Temporary Assistance for Needy Families (TANF), Low-Income Home Energy Assistance Program, Section 8 vouchers, public housing, Social Security, Medicare, and unemployment compensation.

To generate the estimates, we used the *Who is Receiving Social Safety Net Benefits?* Dashboard (U.S. Census Bureau, 2024d) with supplemental analysis of the public-use microdata (U.S. Census Bureau, 2025a, 2025e). Table A3 lists the actual point estimates used for the figure.

Table A3: Estimates and standard errors for Figure S.3: Percentage of working-age adults from 18 to 65 years old who participate in means-tested social safety net benefit programs, by educational attainment: 2022 (Indicator STS 14b)

	All	No High School Diploma	High School Diploma	Some College	Associate Degree	Bachelor's Degree	Advanced Degree
Estimates							
Health Assistance							
Medicaid/CHIP	19.7	40.9	28	24.5	18.5	8.5	4.1
Nutrition Assistance							
SNAP	9.8	23.3	14.1	12.2	9.3	3.3	1.3
WIC	0.9	1.4	1.2	1.1	0.7	0.5	0.4
Free or Reduced Price School Lunch	0.4	4.3	‡	‡	‡	‡	‡
Cash Assistance							
SSI	3.1	8.8	5.2	2.8	2.3	0.5	0.5
TANF	0.3	0.7	0.6	0.3	0.4	0.2	‡
Shelter Assistance							
Energy Aid	3.8	6.5	5.8	4.4	3.3	1.7	1.1
Rental Subsidies	2.9	6.6	4.2	3.9	2.8	0.7	0.4
Social Insurance							
Social Security	6.1	10	9.4	6.4	6.9	2.6	2.1
Medicare	5.4	8.9	8.7	5.7	5.5	2.2	1.4
Unemployment Compensation	1.3	1	1.6	1.7	1.1	1.1	0.9
Standard Errors							
Health Assistance							
Medicaid/CHIP	0.7	2.5	1.3	1.7	1.8	0.9	0.8
Nutrition Assistance							
SNAP	0.5	2.3	1	1.2	1.3	0.5	0.4
WIC	0.1	0.5	0.3	0.3	0.3	0.2	0.3
Free or Reduced Price School Lunch	0.1	0.9	‡	‡	‡	‡	‡
Cash Assistance							

SSI	0.2	1.1	0.6	0.5	0.7	0.2	0.3
TANF	0.1	0.4	0.2	0.2	0.3	0.1	‡
Shelter Assistance							
Energy Aid	0.3	1.1	0.7	0.7	0.8	0.4	0.3
Rental Subsidies	0.2	1.1	0.6	0.7	0.7	0.7	0.2
Social Insurance							
Social Security	0.3	1.3	0.7	0.7	1	0.4	0.5
Medicare	0.3	1.2	8.7	0.8	0.9	0.4	0.4
Unemployment Compensation	1.3	0.4	1.6	0.4	0.5	0.3	0.3

‡ Estimate not available due to program eligibility, or the estimate rounds to zero.

SOURCE: 2022 Survey of Income and Program Participation (SIPP) (U.S. Census Bureau, 2024d, 2025e). Analysis by authors.

Figure S.4: Corrections

Data for Figure S.4 are from the Bureau of Justice Statistics' 2016 Survey of Prison Inmates (SPI). “Data from the 2016 SPI were collected through face-to-face interviews with a nationally representative sample of 24,848 state and federal prisoners from January through October 2016. The sample estimates were weighted to represent the total state and sentenced federal prison populations at year-end 2015” (Bureau of Justice Statistics, 2016a). Data on educational attainment reflect the highest level of education completed prior to admission, excluding GED attainment. The data were retrieved from the 2016 SPI Data Analysis Tool (Bureau of Justice Statistics, 2016b). Estimates were replicated on the microdata file in order to generate reliable standard error estimates using jackknife replicate weights. Estimates and standard errors are presented in Table A4.

Table A4: Estimates and standard errors for Figure S.4: Percentage distribution of state and federal prisoners, age 25 and over, by highest level of education completed: 2016 (Indicator STS 14c)

	Estimates	Standard Errors
Estimates		
Less than high school	61.0	0.65
High school graduate	22.3	0.42
Some college	12.3	0.32
College degree or more	4.5	0.22

NOTES: Education completed is based on the highest level of education completed prior to admission, excluding GED attainment. Data analysis conducted using the SPI Data Analysis Tool (SPI DAT; <https://spi-data.bjs.ojp.gov/dashboard>). Retrieved October 2025.

SOURCE: 2016 Survey on Prison Inmates (Bureau of Justice Statistics, 2016a, 2016b). Analysis by authors.

Figure S.5: Life Expectancy

The Global Burden of Disease US Health Disparities Collaborators, a partner of the Institute for Health Metrics and Evaluation (IHME), published research that estimates a person's life expectancy based on their educational attainment. Data were derived for persons 25 years and older, using death records from the US National Vital Statistics System. Population estimates were generated from the decennial census, the American Community Survey, and the National Center for Health Statistics. The source suggest using caution with the data as they note that there can be errors in the death certificates, their estimates are subject to survey sampling errors, their estimates do not take in the quality of education as they suggest this could have an effect on a person's health, their estimates also do not take into consideration that educational attainment may increase with age, and do not account for the effects from the COVID-19 pandemic (Sylte et al., 2025). Estimates and confidence intervals used for the figure are presented in Table A5.

Table A5: Estimates and confidence intervals for Figure S.5: Life expectancy by educational attainment for males and females: 2019 (Indicator STS 14d)

	Male		Female		Both	
	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval	Estimate	95% Confidence Interval
Less than high school	70.9	[70.52 - 71.35]	76.6	[76.15 - 77.02]	73.5	[73.20 - 73.82]
High school graduate	74.4	[74.07 - 74.86]	80.2	[79.89 - 80.60]	77.3	[77.02 - 77.58]
Some college	79.8	[79.44 - 80.22]	84.2	[83.78 - 84.67]	82.1	[81.86 - 82.46]
College graduate	82.7	[82.46 - 83.06]	85.9	[85.48 - 86.25]	84.2	[83.95 - 84.43]

SOURCE: United States Life Expectancy by County and Educational Attainment 2000-2019 (Institute for Health & Evaluation, 2025; Sylte et al., 2025).

Figure S.6: First-Generation Enrollment by Institutional Sector

Estimates for Figure S.6 use data from the National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS). NPSAS is a cross-sectional study of all students attending postsecondary education institutions that receive federal student financial aid in Title IV of the Higher Education Act. The first-generation estimates for Figure S.6 were produced using the DataLab PowerStats application on the National Center for Education Statistics' website (<https://nces.ed.gov/datalab>). The QuickRetrieve codes for the estimates are "imtnmq" for NPSAS:96 through NPSAS:18 and "jrviqe" for NPSAS:20. Estimates and standard errors represented in the Figure are presented in Table A6.

Table A6: Estimates and standard errors for Figure S.6: Percentage of first-generation degree-seeking students, by institutional sector: 1996 and 2020 (Indicator STS 15)

	1995-96 Academic Year	2019-20 Academic Year
Estimates		
Public 4-year and above	60.5	47.6
Private nonprofit 4-year and above	57.9	41.1
Public 2-year	73.8	64.6
Private nonprofit less than 4-year	75.3	72.0
Private for profit	81.7	71.8
Standard Errors		
Public 4-year and above	1.17	0.38
Private nonprofit 4-year and above	2.16	0.92
Public 2-year	0.84	0.56
Private nonprofit less than 4-year	4.50	8.09
Private for for-profit	1.68	1.70

NOTES: Weighted estimates and standard errors have been calculated using methods that account for the complex sample design employed during data collection. See the appendix for all estimates and standard errors.

SOURCE: National Postsecondary Student Aid Student (1996 and 2020) (National Center for Education Statistics, 2020b).

Figure S.7: First-Generation and Bachelor's Attainment Rates

Estimates for use data from the National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS) and the Current Population Survey, March Annual Supplement from the United States Census Bureau (U.S. Census Bureau, 2024c). NPSAS is a cross-sectional study of all students attending postsecondary education institutions that receive federal student financial aid in Title IV of the Higher Education Act. The CPS is a household survey that provides estimates on issues such as education, health, and key statistics of the national labor force. The data represent students who are attending degree-granting institutions in the United States and adults aged 25 years and older.

The first-generation estimates for Figure S.7 were produced using the DataLab PowerStats application on the National Center for Education Statistics' website (<https://nces.ed.gov/datalab>). The QuickRetrieve codes for the estimates are "imtnmq" for NPSAS:96 through NPSAS:18 and "jrviqe" for NPSAS:20. Estimates and standard errors represented in the Figure are presented in **Table A7**. Rates prior to 1996 are included in Table A6, but the parental education question was asked differently in earlier surveys.

The data on U.S. bachelor's degree attainment are derived from tables in the Pell Institute's Postsecondary Opportunity data library (Mortenson & Brunt, 2025). Bachelor's degree attainment data is derived from the Current Population Survey, March Annual Social and Economic Supplement (1989 – 2023). Data was derived from released tables, the CPS Table Creator, and the Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025c).

The 1996 standard errors were derived using the Generalized Variance Function using the published alpha and beta parameters (U.S. Census Bureau, 1996). The standard errors for 2020 were derived from downloaded data from the [IPUMS CPS website](#) using replicate weights (Flood et al., 2025). The attainment rates for the figure can be reviewed in Table A8.

Table A7: First-generation estimates and standard errors for : Percentage of first-generation students and the U.S. bachelor’s attainment rate for adults 25 years and older: 1996-2020 (Indicator STS 16)

Year	First Generation	Parent with a bachelor’s degree
Estimates		
1990	61.5	38.5
1993	62.1	37.9
1996	66.5	33.5
2000	60.4	39.6
2004	57.9	42.1
2008	60.2	39.8
2012	60.7	39.3
2016	54.6	45.4
2020	53.1	46.9
Standard Errors		
1990	0.56	0.56
1993	0.49	0.49
1996	0.65	0.65
2000	0.45	0.45
2004	0.33	0.33
2008	0.24	0.24
2012	0.28	0.28
2016	0.29	0.29
2020	0.31	0.31

NOTES: The question was asked slightly differently after 1993, without explicitly asking if students "don't know," and these students were removed from the analysis, accounting for between zero and 3.9% depending on the year. Details may not sum to totals due to rounding. These estimates were generated using NCES' DataLab website (<https://nces.ed.gov/datalab>). The Quick retrieve codes used to generate these estimates are sxvpru for 1990, ynsfro for 1993, imtnmq for 1996-2016, and jrviqe for 2000.

SOURCE: National Postsecondary Student Aid Student (1996, 2000, 2004, 2008, 2012, 2016, and 2020) (National Center for Education Statistics, 2020b) and the Current Population Survey, Annual Social and Economic Supplement (U.S. Census Bureau, 2024b). This figure was first published by Simone and Christopher (2005).

Table A8: U.S. attainment estimates for Figure S.7: Percentage of first-generation students and the U.S. bachelor's attainment rate for adults 25 years and older: 1996-2020 (Indicator STS 17)

Year	Population 25 Years and Over (000)	High School Graduate or Higher		Bachelor's Degree or Higher	
		Number (000)	Percent	Number (000)	Percent
2023	227,674	208,147	91.4%	87,312	38.3%
2022	226,274	206,341	91.2%	85,218	37.7%
2021	224,580	204,526	91.1%	85,037	37.9%
2020	223,058	202,850	90.9%	83,701	37.5%
2019	221,478	199,503	90.1%	79,816	36.0%
2018	219,835	197,420	89.8%	76,922	35.0%
2017	216,920	194,373	89.6%	74,099	34.2%
2016	215,017	191,566	89.1%	71,901	33.4%
2015	212,136	187,551	88.4%	68,944	32.5%
2014	209,285	184,823	88.3%	66,877	32.0%
2013	206,898	182,384	88.2%	65,507	31.7%
2012	204,580	179,300	87.6%	63,288	30.9%
2011	201,540	176,508	87.6%	61,346	30.4%
2010	199,925	174,223	87.1%	59,841	29.9%
2009	198,286	171,868	86.7%	58,573	29.5%
2008	196,308	169,963	86.6%	57,785	29.4%
2007	194,318	166,582	85.7%	55,846	28.7%
2006	191,883	163,979	85.5%	53,746	28.0%
2005	189,365	161,347	85.2%	52,377	27.7%
2004	186,872	159,134	85.2%	51,753	27.7%
2003	185,185	156,584	84.6%	50,378	27.2%
2002	182,140	153,272	84.2%	48,697	26.7%
2001	180,386	151,900	84.2%	47,235	26.2%
2000	175,230	147,399	84.1%	44,855	25.6%
1999	173,754	144,940	83.4%	43,811	25.2%
1998	172,209	142,647	82.8%	41,984	24.4%
1997	170,583	140,065	82.1%	40,695	23.9%
1996	168,325	137,615	81.8%	39,656	23.6%
1995	166,441	135,938	81.7%	38,231	23.0%
1994	164,510	133,090	80.9%	36,485	22.2%
1993	163,014	130,806	80.2%	35,496	21.8%

1991	158,697	124,466	78.4%	33,911	21.4%
1989	154,162	118,362	76.8%	32,553	21.1%

NOTES: Data for 2007 to 2018 were calculated using the CPS Table Creator, and 2019 to 2023 data were calculated using the Census's Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025c).

SOURCE: Postsecondary Opportunity Data Archive (Mortenson & Brunt, 2025) analysis from the Current Population Survey, Annual Social and Economic Supplement (U.S. Census Bureau, 2024c). Analysis by authors.

Figure S.8: Attainment Rates for Low-Income and First-Generation Students

Figure S.8 uses data calculated from the NCES's 2012/17 Beginning Postsecondary Students Longitudinal Study (National Center for Education Statistics, 2017). Income in the figure uses the threshold used for TRIO grant programs from income thresholds that are established by law and are set at an adjusted income at or below 150% of the federal poverty line. First-generation is defined as neither parent nor guardian having attained a bachelor's degree. First-generation status is defined as having neither parent nor guardian having attained a bachelor's degree. The figure uses a variable derived by NCES, which includes those indicating that they don't know of their parent's attainment as first-generation. Estimates can be replicated using the quick-retrieve code "ajawzj" on NCES' DataLab website (National Center for Education Statistics, 2025a). The estimates and standard errors for this figure are presented in Table A9.

Table A9: Estimates and standard errors for Figure S.8: Percentage of bachelor’s degree recipients for first-time beginning students attending a postsecondary institution in 2012, by low-income and first-generation student status: 2017 (Indicator STS 16)

	Member of the group	All others
Estimates		
First-generation	23.0	58.7
Low-income	17.0	46.9
First-generation/Income subgroups		
Low-income and first-generation	14.1	45.5
First-generation and not low-income	30.4	69.6
Low-income and not first-generation	30.4	37.2
Neither low-income nor first-generation	63.9	23.7
Standard Errors		
First-generation	0.84	1.06
Low-income	0.70	1.18
First-generation/Income subgroups		
Low-income and first-generation	0.72	1.10
First-generation and not low-income	1.23	1.23
Low-income and not first-generation	1.83	0.98
Neither low-income nor first-generation	1.13	0.79

NOTES: This figure uses the TRIO eligibility criteria in the estimates. TRIO income thresholds are established by law and are set at an adjusted income at or below 150% of the federal poverty line. First-generation is defined as neither parent nor guardian having attained a bachelor’s degree. Estimates were generated using DataLab ((National Center for Education Statistics, 2025a) using the quick-retrieve code ajawzj.

SOURCE: 2012/17 Beginning Postsecondary Students Longitudinal Study (National Center for Education Statistics, 2017). Analysis by authors.

Figure S.9: First-Generation High School Students by Race

Figure S.9 uses data calculated from the NCES's National Longitudinal Study of 1972, High School and Beyond Longitudinal Study of 1980, National Educational Longitudinal Study of 1988, Educational Longitudinal Study 2002, and the High School Longitudinal Study of 2009, and uses the educational attainment of a parent(s) to determine first-generation status. First-generation status is defined as having neither parent nor guardian having attained a bachelor's degree. Caution is necessary when using this data, especially when observing small differences; however, standard errors are available to test for differences between groups. Estimates and standard errors for this figure are presented in Table A10.

All the estimates over time represent the views of high school students at different points in their education, and the survey populations varied across each of the surveys. The 1972 study sampled high school seniors, the 1980 study sampled sophomores. In 1988, the sample targeted 8th graders (but the data were pulled from a high school follow-up in 1992). The 2002 study sampled sophomores, and the 2009 study sampled freshmen. Categories of race/ethnicity have also shifted over time, but groups were developed to approximate the closest race and ethnicity groups.

The analysis for all estimates except for NLS-72 was conducted in NCES' DataLab (National Center for Education Statistics, 2025a) Web-based application (<https://nces.ed.gov/datalab>). The quick-retrieve codes to replicate the tables are as follows: hnvqpb for HS&B:80, ozrwpj for NELS:88, omgysh for ELS:2002, and pxgeqm for HSLS:09. NLS-72 data were downloaded from the ICPSR repository (National Center for Education Statistics, 1999).

Table A10: Estimates and standard errors for Figure S.9: Percentage of high school students who had the potential to be first-generation college students by race/ethnicity: 1972 to 2009 selected years (Indicator STS 7a)

	1972	1980	1992	2002	2009
Estimates					
Total	77.6	84.4	72.7	62.3	63.9
Asian	75.3	75.4	50.9	47.9	43.7
White	74.8	83.2	66.1	57.2	54.7
More than one race			81.0	63.0	64.0
Black or African American	91.4	91.4	83.7	68.9	75.3
American Indian/Alaskan	89.1	86.4	88.3	70.6	80.7
Hispanic or Latino	92.7	89.2	87.2	78.8	80.5
Standard Errors					
Total	0.73	0.63	0.71	0.79	0.94
Asian	4.26	4.21	4.06	2.57	3.32
White	0.81	0.72	1.01	0.96	1.05
More than one race			2.60	2.58	2.13
Black or African American	0.83	1.24	2.08	1.27	2.11
American Indian/Alaskan	2.37	3.01	4.93	6.08	9.39
Hispanic or Latino	1.28	1.42	1.37	1.36	1.44

NOTES: First-generation is defined as no parent or guardian having attained a bachelor's degree. Estimates and standard errors for this figure are in Appendix A. All years represent the views of high school students, but at different times in their education, and the survey populations varied across each of the surveys. The 1972 study sampled high school seniors, the 1980 study sampled sophomores. In 1988, the sample targeted 8th graders (but the data were pulled from a high school follow-up in 1992). The 2002 study sampled sophomores, and the 2009 study sampled freshmen. Categories of race/ethnicity have also shifted over time, but groups were developed to approximate the closest race groups.

SOURCE: National Longitudinal Study of 1972 (NLS-72) (National Center for Education Statistics, 1999), High School and Beyond Longitudinal Study of 1980 (HS&B:80), National Education Longitudinal Study of 1988 (NELS:88), Education Longitudinal Study of 2002 (ELS:2002), and the High School Longitudinal Study of 2009 (HSLS:09). Most estimates were generated from NCES' DataLab application (National Center for Education Statistics, 2025a). An earlier version of this figure was included in Cahalan and Curtin's (2004) report on the Upward Bound program. The quick-retrieve codes are as follows: hnvqpb for HS&B:80, ozrpwj for NELS:88, omgysh for ELS:2002, and pxgeqm for HSLS:09. NLS-72 data were downloaded from the ICPSR repository (National Center for Education Statistics, 1999). Analysis by authors.

Figure S.10: First Generation Children Under 18 by Race

The data presented in Figure S.10 are published in the NCES's Digest of Education Statistics (National Center for Education Statistics, 2023c) and are sourced from the U.S. Census Bureau's American Community Survey (ACS). The data provide estimates of the percentages of parents of children under 18 who had not completed a bachelor's degree in 2012 and 2022, by race/ethnicity. The ACS is a household survey, and the estimates represent the percentage of all children under 18 years old residing in the sampled household. Estimates and standard errors are presented in Table A9.

Table A11: Estimates and standard errors for Figure S.10: Percentage of children under 18 with the potential to be first-generation college by race/ethnicity: 2012 and 2022 (Indicator STS 7b)

	2012	2022
Estimates		
Total	62.6	53.2
American Indian/Alaska Native	80.6	74.1
Asian	34.3	25.6
Black	77.1	67.6
Hispanic	82.0	71.6
Pacific Islander	79.1	67.2
White	52.4	43.0
Some other race ⁴	59.0	45.4
Two or more races	58.5	47.7
Standard Errors		
Total	0.17	0.19
American Indian/Alaska Native	1.55	1.88
Asian	0.58	0.49
Black	0.49	0.61
Hispanic	0.41	0.39
Pacific Islander	3.86	3.53
White	0.21	0.21
Some other race ⁴	3.12	1.77
Two or more races	0.70	0.56

⁴ Respondents who wrote in some other race that was not included as an option on the questionnaire.

NOTES: First-generation is defined as no parent or guardian having attained a bachelor's degree

SOURCE: U.S. Census Bureau, American Community Survey (ACS), 2012 and 2022 from the 2023 Digest of Education Statistics (National Center for Education Statistics, 2023c).

Figure S.11: Bachelor's or Higher Degrees in the U.S. Population

The findings for Figure S.11 are based on the U.S. Census Bureau's (2025b) Current Population Survey and its decennial census of the population, published in Table A-2. As noted in their documentation, the data represent people who are 25 years and over. Caution should be considered when interpreting the data between 1940 and 2024, as classifications used for race/ethnicity have changed over time. For instance, data for Blacks from 1940 to 1962 include respondents from other races. The estimates used for the figure are displayed in Table A12.

Variance estimates were calculated for 1990 and 2024 to be used in statistical testing using the Generalized Variance function (see the Variance and Standard Error calculation section). In 1990, parameters were not provided for White or Asian. The technical documentation recommended using parameters for the Total as an estimate for White. The Hispanic parameters were used to estimate 1990 Asian standard errors. The components used to compute the variances are displayed in Table A13.

Table A12: Estimates for Figure S.11: Percentage of the population 25 years of age and older who attained a bachelor’s degree or higher by race/ethnicity: selected years 1940-2024 (Indicator STS 7d)

Year	1940-1990					1991-2024						
	All people	White	Non-Hispanic White	Black	Hispanic (any race) Asian	Year	All people	White	Non-Hispanic White	Black	Hispanic (any race) Asian	
1940	4.6	4.9		1.3	4.0	1991	21.4	22.2		11.5	9.7	
1947	5.4	5.7		2.5		1992	21.4	22.1		11.9	9.3	
1950	6.2			2.3	7.5	1993	21.9	22.6	23.8	12.2	9.0	
1952	7.0			2.4		1994	22.2	22.9	24.3	12.9	9.1	
1957	7.6	8.0		2.9		1995	23.0	24.0	25.4	13.2	9.3	
1959	8.1	8.6		3.3		1996	23.6	24.3	25.9	13.6	9.3	
1960					11.3	1997	23.9	24.6	26.2	13.3	10.3	
1962	8.9	9.5		4.0		1998	24.4	25.0	26.6	14.7	11.0	
1964	9.1	9.6		3.9		1999	25.2	25.9	27.7	15.4	10.9	
1965	9.4	9.9		4.7		2000	25.6	26.1	28.1	16.5	10.6	
1966	9.8	10.4		3.8		2001	26.2	26.6	28.7	15.7	11.1	
1967	10.1	10.6		4.0		2002	26.7	27.2	29.4	17.0	11.1	
1968	10.5	11.0		4.3		2003	27.2	27.6	30.0	17.3	49.8	
1969	10.7	11.2		4.6		2004	27.7	28.2	30.6	17.6	49.4	
1970	11.0	11.6		4.5	20.4	2005	27.7	28.1	30.6	17.6	50.2	
1971	11.4	12.0		4.5		2006	28.0	28.4	31.0	18.5	49.7	
1972	12.0	12.6		5.1		2007	28.7	29.1	31.8	18.5	52.1	
1973	12.6	13.1		6.0		2008	29.4	29.8	32.6	19.6	52.6	
1974	13.3	14.0		5.5	5.5	2009	29.5	29.9	32.9	19.3	52.3	
1975	13.9	14.5		6.4	6.3	2010	29.9	30.3	33.2	19.8	52.4	
1976	14.7	15.4		6.6	6.1	2011	30.4	31.0	34.0	19.9	50.3	
1977	15.4	16.1		7.2	6.2	2012	30.9	31.3	34.5	21.2	51.0	
1978	15.7	16.4		7.2	7.0	2013	31.7	32.0	35.2	21.8	53.2	
1979	16.4	17.2		7.9	6.7	2014	32.0	32.3	35.6	22.2	52.3	
1980	17.0	17.8	17.4	7.9	32.9	7.9	2015	32.5	32.8	36.2	22.5	53.9
1981	17.1	17.8		8.2	7.7	7.7	2016	33.4	33.7	37.3	23.3	55.9
1982	17.7	18.5		8.8	7.8	7.8	2017	34.2	34.5	38.1	23.9	54.8
1983	18.8	19.5		9.5	7.9	7.9	2018	35.0	35.2	38.8	25.2	56.5
1984	19.1	19.8		10.4	8.2	8.2	2019	36.0	36.3	40.1	26.1	58.1
1985	19.4	20.0		11.1	8.5	8.5	2020	37.5	37.5	41.3	27.8	61.1
1986	19.4	20.1		10.9	8.4	8.4	2021	37.9	37.9	41.9	28.1	61.0
1987	19.9	20.5		10.7	8.6	8.6	2022	37.7	37.9	41.8	27.6	59.3
1988	20.3	20.9		11.2	10.1	10.1	2023	38.3	38.3	42.3	28.7	62.1
1989	21.1	21.8		11.8	9.9	9.9	2024	38.7	38.6	42.7	29.6	61.0
1990	21.3	22.0	23.8	11.3	36.6	9.2						22.2

NOTES: The “White” race category is defined as “A person having origins in any of the original peoples of Europe, the Middle East, or North Africa. It includes people who indicate their race as “White” or report entries such as Irish, German, Italian, Lebanese, Arab, Moroccan, or Caucasian.” The “White non-Hispanic” category was first reported in 1980. This category “Includes people who reported White and no other race group and did not report Hispanic origin.” White non-Hispanic excludes those persons who indicated they were of Hispanic origin. Persons of Hispanic origin may be of any race. Data classifications have evolved, allowing for the separate identification of Hispanic ethnicity in 1980 and the option to select more than one race starting in 2003. From 1940 to 1962, data for “Black” may include data from other races. Data from 1940 to 1970 for Asians are from the decennial census.

SOURCE: U.S. Census Bureau (2025b) and Scaniello and Day (2006). Analysis by authors.

Table A13: Standard errors used for statistical testing in Figure S.11: Percentage of the population 25 years of age and older who attained a bachelor’s degree or higher by race/ethnicity: selected years 1940-2024 (Indicator STS 7d)

	Population Estimate	Beta Parameter	Percentage Estimate	Standard Error
2024 estimates and parameters				
White	229,800,000	4,081	42.7	0.21
Black/African American	229,800,000	3,665	29.6	0.18
Asian, Pacific Islander, Native American	229,800,000	3,341	61.0	0.19
Hispanic	229,800,000	3,331	22.2	0.16
1990 estimates and parameters				
White	156,538,000	2468	23.8	0.17
Black/African American	156,538,000	3339	11.3	0.15
Asian, Pacific Islander, Native American	156,538,000	3339	36.6	0.22
Hispanic	156,538,000	3339	9.2	0.13

NOTES: The generalized variance function was used to calculate the standard errors for the years 1990 and 2024. The parameters were pulled from the Current Population Survey technical documentation (U.S. Census Bureau, 1996, 2024c).

SOURCE: U.S. Census Bureau (2025b) and Scaniello and Day (2006). Analysis by authors.

Figure S.12: Income Quartiles by Race

Results shown in Figure S.12 are derived from the U.S. Census Bureau’s Current Population Survey using the microdata access tool (U.S. Census Bureau, 2025d). This data is a continuation of a table once published by the U.S. Census Bureau, but it has been discontinued. Quartiles are calculated using family income and are limited to dependent family members who are 18 to 24 years old. For those who chose more than one race, or another race other than Black, White, or Asian, are included in the “other” category. Hispanics may be of any race. For the income distribution of the quartiles, please refer to the notes for Indicator 1. The historic data are part of the Postsecondary Opportunity (PEO) Data Archive (Mortenson & Brunt, 2025). Table A14 displays the estimates used in the figure.

Variance estimates were calculated for the quartiles for each race using the Generalized Variance function (see the Variance and Standard Error calculation section). The components used to compute the variances are displayed in Table A15.

Table A14: Estimates used in Figure S.12: Percentage distribution of the family income quartiles of dependent 18- to 24-year-olds by race/ethnicity: 2023 (Indicator STS 8b(iii))

	First Quartile	Second Quartile	Third Quartile	Fourth Quartile
White, Non-Hispanic	17.8	23.1	28.8	30.4
Black/African American	37.8	30.3	18.7	13.2
Asian	20.7	21.4	22.7	35.2
Hispanic	41.6	27.1	18.7	12.6

NOTES: Annual data collected by the Census and reported by the BLS yearly are from the October supplement to the Current Population Survey (CPS), a national sample of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment.

SOURCE: Postsecondary Opportunity Data Archive (Mortenson & Brunt, 2025) using the October Current Population Survey School Enrollment Supplement dataset (U.S. Census Bureau, 2023a). Estimates generated using the U.S. Census Bureau, Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025d).

Table A15: Standard errors used for statistical testing in Figure S.12: Percentage distribution of the family income quartiles of dependent 18- to 24-year-olds by race/ethnicity: 2023 (Indicator STS 8b(iii))

	Parameter Inputs		Standard Error Estimates			
	Population Count	Beta	First Quartile	Second Quartile	Third Quartile	Fourth Quartile
White, Non-Hispanic	9,545,534	4251	0.81	0.89	0.96	0.97
Black/African American	2,788,008	5416	2.14	2.03	1.72	1.49
Asian	1,189,793	4868	2.59	2.62	2.68	3.06
Hispanic	5,002,741	5163	1.58	1.43	1.25	1.07

NOTES: Annual data collected by the Census and reported by the BLS yearly are from the October supplement to the Current Population Survey (CPS), a national sample of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment. The data used to calculate the student errors using the Generalized Variance Function were drawn from the technical documentation from the CPS October Supplement (U.S. Census Bureau, 2023a).

SOURCE: Postsecondary Opportunity Data Archive (Mortenson & Brunt, 2025) using the October Current Population Survey School Enrollment Supplement dataset (U.S. Census Bureau, 2023a). Estimates generated using the U.S. Census Bureau Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025d).

1. Indicator 1 (Who Enrolls in Higher Education?) Technical Notes

Definitions used for Indicator 1

Definitions for the indicators and information about classifications are as follows.

The College Participation Rate is defined as the percent of dependent 18- to 24-year-olds who are not still enrolled in high school and are enrolled in any postsecondary education, as measured by the Current Population Survey (CPS) and American Community Survey (ACS).

The High School Graduates College Continuation Rate is defined as the percentage of dependent 18- to 24-year-old high school graduates who are enrolled in college, as measured by the CPS. The High School Graduates College Continuation Rate is higher than the Cohort College Participation Rate because it is contingent upon high school graduation.

Race/Ethnicity categories and titles (for example, “Black,” “Black or African American”) are reported as they are presented in each data source. As race/ethnicity categories have changed over time and vary by study, race/ethnicity categories and titles used in this report also vary based on the original data sources. More recent studies utilize race and ethnicity variables that comply with federal requirements for collecting race separately from ethnicity, allowing respondents to select more than one choice for race. In instances in which the labeling for race/ethnicity has changed over time for the same data source, we report the current labels.

Dependency Status is a tax designation indicating that students or adults receive financial support from other sources (a parent or guardian) and, in such situations, can be claimed on a tax return as a dependent, yielding tax benefits to the tax filer. Dependency status in other Indicators may differ from this definition and is not related to the Dependency definitions related to the Free Application for Federal Student Aid (FAFSA). In earlier years, when Federal surveys did not report dependency status, we created the most similar group.

Statistical Testing Results

Table A16 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant. See the *Statistical Testing* and *Variance and Standard Error Calculations* section for more information on the methods used to calculate the values used for statistical testing. Table A17 documents the results of equivalency tests for select estimates, which were conducted to determine if the estimates were equivalent.

Table A16: Statistical test results verifying the differences mentioned for Indicator 1

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold	
Who enrolls in higher education - Indicator 1a	1.1	1970 lowest income quartile versus 2023 lowest income quartile	t-test	-7.94	0.0000	0.010	*
Who enrolls in higher education - Indicator 1a	1.1	1970 second income quartile versus 2023 second income quartile	t-test	-3.75	0.0002	0.010	*
Who enrolls in higher education - Indicator 1a	1.1	1970 third income quartile versus 2023 third income quartile	t-test	-4.64	0.0000	0.010	*
Who enrolls in higher education - Indicator 1a	1.1	2023 highest income quartile versus 2023 lowest income quartile	t-test	15.05	0.0000	0.010	*
Who enrolls in higher education - Indicator 1a	1.1	1970 college participation income gap versus 2023 college participation income gap	t-test	3.70	0.0061	0.010	*
Who enrolls in higher education - Indicator 1b	1.2	1970 lowest income quartile versus 2023 lowest income quartile	t-test	-3.97	0.0001	0.008	*
Who enrolls in higher education - Indicator 1b	1.2	1970 second income quartile versus 2023 second income quartile	t-test	-3.35	0.0008	0.008	*
Who enrolls in higher education - Indicator 1b	1.2	1970 third income quartile versus 2023 third income quartile	t-test	-5.46	0.0000	0.008	*
Who enrolls in higher education - Indicator 1b	1.2	1970 college participation income gap versus 2023 college participation income gap	t-test	2.02	0.0431	0.008	NS
Who enrolls in higher education - Indicator 1b	1.2	1970 lowest income quartile versus 1970 highest income quartile	t-test	-18.43	0.0000	0.008	*
Who enrolls in higher education - Indicator 1b	1.2	2023 lowest income quartile versus 2023 highest income quartile	t-test	-9.60	0.0000	0.008	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Black students in the lowest income quartile versus Black students in the highest income quartile	t-test	-3.78	0.0002	0.050	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Hispanic students in the lowest income quartile versus Hispanic students in the highest income quartile	t-test	-5.01	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	White students in the lowest income quartile versus White students in the highest income quartile	t-test	-7.78	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the lowest income quartile versus Black	t-test	6.37	0.0000	0.003	*

		students in the lowest income quartile					
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the lowest income quartile versus Hispanic students in the lowest income quartile	t-test	8.41	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the lowest income quartile versus White students in the lowest income quartile	t-test	7.51	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the second income quartile versus Black students in the second income quartile	t-test	4.63	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the second income quartile versus Hispanic students in the second income quartile	t-test	8.53	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the second income quartile versus White students in the second income quartile	t-test	7.00	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the third income quartile versus Black students in the third quartile	t-test	1.96	0.0500	0.003	NS
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the third income quartile versus Hispanic students in the third quartile	t-test	4.06	0.0000	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the third income quartile versus White students in the third income quartile	t-test	2.69	0.0072	0.003	NS
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the highest income quartile versus Black students in the highest income quartile	t-test	1.49	0.1357	0.003	NS
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the highest income quartile versus Hispanic students in the highest income quartile	t-test	3.02	0.0026	0.003	*
Who enrolls in higher education - Indicator 1d(ii)	1.3	Asian students in the highest income quartile versus White students in the highest income quartile	t-test	2.96	0.0031	0.003	*

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020) to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Table A17: Statistical test results verifying equivalencies mentioned for Indicator 1

Chapter Section	Figure	Comparison	Method	Traditional test (p_{trad})	Equivalence Test-Left Tail (p_{left})	Equivalence Test-Right Tail (p_{right})	
Who enrolls in higher education - Indicator 1a	2.1	1970 highest income quartile versus 2023 highest income quartile	t-test	0.6009	0.0002	0.0000	*
Who enrolls in higher education - Indicator 1a	2.2	1970 highest income quartile versus 2023 highest income quartile	t-test	0.1235	0.0017	0.0000	*
Who enrolls in higher education – Indicator 1b	2.2	1970 college participation income gap versus 2023 college participation income gap	t-test	0.0431	0.0010	0.4529	NS
Who enrolls in higher education - Indicator 1d(ii)	2.3	White students in the lowest income quartile versus Black students in the lowest income quartile	t-test	0.5655	0.1298	0.7145	NS
Who enrolls in higher education - Indicator 1d(ii)	2.3	White students in the lowest income quartile versus Hispanic students in the lowest income quartile	t-test	0.3540	0.0232	0.6765	NS
Who enrolls in higher education - Indicator 1d(ii)	2.3	Black students in the lowest income quartile versus Hispanic students in the lowest income quartile	t-test	0.9403	0.3320	0.4119	NS
Who enrolls in higher education - Indicator 1d(ii)	2.3	Asian students in the lowest income quartile versus Asian students in the highest income quartile	t-test	0.8418	0.0464	0.1113	NS

* Statistically significant test.

NS: Not statistically significant.

NOTES: Equivalence tests require that the traditional test for difference is not statistically significant, and both the left- and right-tailed tests are statistically significant. While three statistical tests need to be computed, no adjustments for multiple comparison tests are required (Rogers et al., 1993). For a p-value threshold of 0.05, each tail of the test is divided into two, so each tail uses a threshold of $p < 0.025$.

SOURCE: Analysis by authors.

Figure 1.1: College Participation Rate

For Figure 1.1, 2.2, and 2.3, the annual data are collected by the US Census Bureau and reported by the Bureau of Labor Statistics (BLS) yearly from the October supplement to the Current Population Survey (CPS), a national sample of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment. Due to small sample sizes, estimates for disaggregated data have larger sampling errors than estimates for the total. Results are derived using the Microdata Access Tool (U.S. Census Bureau, 2025d). This data is a continuation of a table once published by the U.S. Census Bureau, but it has been discontinued. Quartiles are calculated using family income and are limited to dependent family members who are 18 to 24 years old and are high school graduates. The historic data are part of the Postsecondary Opportunity (PEO) Data Archive (Mortenson & Brunt, 2025). The 2023 values used to develop the quartiles are as follows:

- Lowest Quartile: \$0 - \$55,337
- Second Quartile: \$55,338 - \$98,670
- Third Quartile: \$98,671 - \$160,457¹
- Top Quartile: Above \$160,457

Note that the quartile groups are not equal for Figure 1.1 because the high school graduate quartile values were used on the college participation rate (regardless of attaining a high school diploma). For Figure 1.2 and Figure 1.3, the quartile groups are equal in size. Table A18 displays the estimates used in the figure, and Table A19 documents the calculations of standard errors. The standard errors from 1970 were calculated using the interpolation tables provided in the documentation (U.S. Census Bureau, 1976). The 2023 standard error were calculated using the Generalized Variance Function using and the design factors reported in the documentation (U.S. Census Bureau, 2023a).

¹ The upper limit for the third quartile was estimated based on the observed distribution of grouped data.

Table A18: Estimates for Figure 1.1: College participation rate: Percentage of 18 to 24 year old dependents in the general population by family income quartile: 1970-2023 (Indicator 1a)

Year	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile	Year	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile
1970	28.2	47.1	57.4	73.5	1997	37.3	57.7	69.0	82.9
1971	29.0	46.1	55.1	71.0	1998	38.0	57.3	69.1	81.9
1972	28.9	46.8	56.7	68.2	1999	38.3	58.6	69.2	78.5
1973	28.0	45.2	57.8	66.2	2000	35.5	56.0	69.0	75.1
1974	27.8	42.3	53.3	68.8	2001	36.8	54.0	67.9	78.6
1975	29.9	43.5	56.7	70.1	2002	38.3	57.8	69.0	75.7
1976	28.6	47.3	58.1	71.4	2003	41.5	58.5	67.5	80.2
1977	29.1	43.6	53.5	71.9	2004	37.6	56.9	69.9	82.7
1978	29.0	42.6	55.1	65.5	2005	40.2	59.3	71.1	80.5
1979	28.4	42.4	54.6	62.1	2006	38.4	58.4	67.5	81.1
1980	27.3	43.5	56.7	63.0	2007	40.0	59.9	70.1	80.3
1981	27.4	43.4	60.5	62.7	2008	41.1	58.3	71.1	80.6
1982	26.6	43.3	56.0	67.7	2009	41.4	58.7	70.2	84.2
1983	26.6	42.3	55.9	68.5	2010	46.5	57.9	67.1	81.6
1984	26.0	44.6	59.8	67.7	2011	44.5	59.0	68.5	81.5
1985	27.2	43.6	60.2	71.3	2012	44.6	59.8	68.4	81.0
1986	28.1	44.2	58.7	72.1	2013	44.5	57.7	66.8	77.2
1987	31.4	50.6	60.1	75.2	2014	45.4	58.2	67.3	79.7
1988	32.2	50.2	63.2	75.3	2015	46.2	57.7	68.2	78.2
1989	32.5	49.2	60.1	73.2	2016	46.2	58.7	70.2	78.1
1990	32.4	51.0	63.9	74.8	2017	47.9	56.1	68.3	78.3
1991	30.0	52.9	67.7	78.8	2018	51.5	56.7	67.0	75.4
1992	37.0	54.7	69.0	81.3	2019	48.4	55.8	66.8	77.5
1993	36.6	54.7	70.9	84.5	2020	47.8	59.7	67.2	78.5
1994	38.4	53.9	68.9	81.8	2021	43.2	57.1	67.5	75.2
1995	36.9	56.0	67.1	84.4	2022	43.9	55.0	66.9	79.0
1996	38.6	58.8	66.6	80.7	2023	42.4	54.5	66.4	74.4

NOTES: The College Participation Rate is tabulated based on the total number in the cohort year and includes those who have not completed high school. Information on school enrollment and work activity is collected monthly in the Current Population Survey (CPS), a national survey of about 60,000 households, which provides information on employment and unemployment. Each October, a supplement to the CPS gathers information about school enrollment.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Estimates generated using the U.S. Census Bureau, Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025d). Analysis by author.

Table A19: Standard errors for Figure 1.1: College participation rate: Percentage of 18 to 24 year old dependents in the general population by family income quartile: 1970 and 2023 (Indicator 1a)

	Base Count (y)	Design factor (1970) or Beta (2023)	Base Standard Error from Interpolation Table	Estimated Standard Error
1970				
Lowest Income Quartile	3,449,000	0.7	1.1	0.8
Second Income Quartile	2,536,000	0.7	1.4	1.0
Third Income Quartile	2,368,000	0.7	1.6	1.1
Highest Income Quartile	2,283,000	0.7	1.4	1.0
2023				
Lowest Income Quartile	5,317,709	4,616	N/A	1.6
Second Income Quartile	4,833,157	4,616	N/A	1.7
Third Income Quartile	4,698,543	4,616	N/A	1.6
Highest Income Quartile	4,603,878	4,616	N/A	1.4

NOTES: The College Participation Rate is tabulated based on the total number in the cohort year and includes those who have not completed high school. Information on school enrollment and work activity is collected monthly in the Current Population Survey (CPS), a national survey of about 60,000 households, which provides information on employment and unemployment. Each October, a supplement to the CPS gathers information about school enrollment.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Design factors and base standard errors for 1970 were derived from the technical documentation provided by the U.S. Census Bureau (1976). Parameters for 2023 were documented in the 2023 October supplement technical documentation (U.S. Census Bureau, 2023b). Analysis by author.

Figure 1.2: High School Graduate Continuation Rate by Income

Refer to the documentation provided for Figure 1.1 above for a description of the data sources and methods used to categorize income groups. Table A20 displays the estimates used in the figure, and Table A21 documents the calculations of standard errors.

Table A20: Estimates for Figure 1.2: High school graduate college continuation rate: Percentage of high school graduates who continue to college, by family income quartile: 1970-2023 (Indicator 1b)

Year	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile	Year	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile
1970	45.8	56.2	64.0	79.0	1997	57.9	70.6	77.2	89.0
1971	46.9	56.6	62.5	76.6	1998	59.1	70.4	77.2	88.3
1972	45.5	56.1	64.4	73.6	1999	56.7	70.3	77.0	85.8
1973	43.6	53.6	64.5	71.6	2000	54.4	67.1	76.2	81.7
1974	43.9	52.4	60.1	74.1	2001	56.5	67.6	76.5	84.5
1975	46.6	53.7	63.1	75.1	2002	56.5	70.4	79.9	82.8
1976	44.6	56.4	65.5	76.3	2003	59.1	69.7	76.5	87.6
1977	46.0	53.5	60.4	76.4	2004	55.7	69.2	78.5	89.0
1978	45.1	51.9	62.0	70.9	2005	58.6	71.1	79.9	87.0
1979	44.5	52.4	61.1	67.3	2006	56.4	69.5	76.5	88.1
1980	42.1	53.3	63.4	68.6	2007	57.4	72.4	79.0	86.5
1981	43.0	53.2	66.9	68.6	2008	57.7	68.6	79.3	87.2
1982	42.1	52.5	62.1	72.4	2009	58.9	70.2	78.4	90.1
1983	41.5	52.3	62.8	73.8	2010	63.9	69.7	76.5	88.1
1984	39.5	54.1	66.0	72.4	2011	62.1	71.3	77.6	89.6
1985	40.8	52.7	66.6	75.6	2012	61.6	71.9	77.6	88.6
1986	42.0	54.3	65.0	77.3	2013	59.8	69.0	76.6	85.8
1987	46.1	60.6	67.2	79.4	2014	59.9	69.0	76.7	87.3
1988	48.0	59.4	70.0	79.9	2015	61.0	68.0	76.1	86.3
1989	48.3	59.4	67.8	78.5	2016	60.8	68.2	79.3	86.7
1990	47.7	61.4	70.0	79.4	2017	63.1	65.1	77.4	86.6
1991	46.6	63.7	74.0	83.3	2018	64.5	66.4	76.8	83.9
1992	55.6	65.9	76.2	86.1	2019	60.2	65.8	75.8	84.5
1993	53.7	65.7	78.5	88.8	2020	59.0	68.5	75.4	85.4
1994	56.3	66.0	76.6	87.0	2021	55.3	66.0	74.4	82.2
1995	56.1	67.9	75.9	89.6	2022	55.6	64.1	75.0	85.0
1996	58.0	70.7	75.2	86.1	2023	53.7	62.7	74.3	81.6

NOTES: The High School Graduates College Continuation Rate is the percentage of 18- to 24-year-old high school graduates who were enrolled in a postsecondary education institution of any type.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Estimates generated using the U.S. Census Bureau, Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025d). Analysis by author.

Table A21: Standard errors for Figure 1.2: High school graduate college continuation rate: Percentage of high school graduates who continue to college, by family income quartile: 1970 and 2023 (Indicator 1b)

	Base Count (y)	Design factor (1970) or Beta (2023)	Base Standard Error from Interpolation Table	Estimated Standard Error
1970				
Lowest Income Quartile	2,125,000	0.7	1.6	1.1
Second Income Quartile	2,125,000	0.7	1.5	1.1
Third Income Quartile	2,125,000	0.7	1.5	1.1
Highest Income Quartile	2,125,000	0.7	1.3	0.9
2023				
Lowest Income Quartile	4,199,266	4,616	N/A	1.6
Second Income Quartile	4,199,266	4,616	N/A	1.7
Third Income Quartile	4,199,266	4,616	N/A	1.6
Highest Income Quartile	4,199,266	4,616	N/A	1.4

NOTES: The High School Graduates College Continuation Rate is the percentage of 18- to 24-year-old high school graduates who were enrolled in a postsecondary education institution of any type.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Design factors and base standard errors for 1970 were derived from the technical documentation provided by the U.S. Census Bureau (1976). Parameters for 2023 were documented in the 2023 October supplement technical documentation (U.S. Census Bureau, 2023b). Analysis by author.

Figure 1.3: High School Graduate Continuation Rate by Race/Ethnicity

Refer to the documentation provided for Figure 1.1 above for a description of the data sources and methods used to categorize income groups. Table A22 presents the estimates and standard errors used in the figure, and Table A23 documents the calculations of the standard errors.

Table A22: Estimates and standard errors for Figure 1.3: High school graduate college continuation rate: Percentage of high school graduates who continue to college, by race/ethnicity and family income quartiles: 2023 (Indicator 1d(ii))

Race/Ethnicity	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile
Estimates				
Asian	93.1	94.3	89.2	92.1
Black	51.7	65.8	74.7	81.7
Hispanic	51.3	53.1	65.2	76.3
White	55.1	64.3	76.0	81.5
Standard Errors				
Asian	4.11	3.53	4.52	3.18
Black	5.04	5.04	5.86	6.16
Hispanic	2.81	3.30	3.81	4.14
White	2.98	2.42	1.89	1.64

NOTES: The High School Graduates College Continuation Rate is the percentage of 18- to 24-year-old high school graduates who were enrolled in a postsecondary education institution of any type.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 2023 October Current Population Survey School Enrollment Supplement. Estimates generated using the U.S. Census Bureau, Microdata Access Tool (MDAT) (U.S. Census Bureau, 2025d). Analysis by author.

Table A23: Beta parameters used to compute standard errors for Figure 1.3: High school graduate continuation rate: Percentage of high school graduates who continue to college, by race/ethnicity and family income quartiles: 2023 (Indicator 1d(ii))

Race/Ethnicity	Age (18-24 years old)	Income	Greater Beta Used for Computation
Asian	5,496	4,868	5,496
Black	8,431	5,416	8,431
Hispanic	4,703	5,163	5,163
White	4,789	4,251	4,789

NOTES: The High School Graduates College Continuation Rate is the percentage of 18- to 24-year-old high school graduates who were enrolled in a postsecondary education institution of any type.

SOURCE: U.S. Census Bureau (2023b).

Figure 1.4: First Generation Students in Higher Education

Estimates for Figure 1.4 were calculated using the National Center for Education Statistics, National Postsecondary Student Aid Study, 2020, and use the educational attainment of a parent(s) to calculate the percentage of undergraduates who are classified as first-generation (neither parent has a bachelor's degree). The quick retrieve code used to generate the estimates in DataLab is yeywnx. The estimates and standard errors derived from DataLab are displayed in Table A24.

Table A24: Estimates and standard errors for Figure 1.4: Percentage distribution of undergraduate students by parents' educational attainment: 2020 (Indicator h(ii))

	High school or less	Some college	Bachelor's degree or higher
Estimates	25.8	28.4	45.8
Standard Errors	0.26	0.28	0.28

NOTES: A first-generation college student is defined as an undergraduate whose parents do not hold a bachelor's degree or higher. "Some college" includes students who attained associate's degrees.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Postsecondary Student Aid Study (NPSAS:2020) (National Center for Education Statistics, 2020b). Tabulated using NCES PowerStats. Analysis by authors.

2. Indicator 2 (What Types of Higher Education Institutions do Students Attend?) Technical Notes

Definitions used for Indicator 2

The sources of data for Equity Indicator 2 are: 1) Integrated Postsecondary Education Data System (IPEDS), which has collected institutional-level data on U.S. postsecondary educational institutions since 1986² (National Center for Education Statistics, 2025b); 2) NCES high school longitudinal studies ; 3) 2018 Barron's Admissions Competitiveness Index (Barron's College Division, 2018).

IPEDS Federal Grant Aid. IPEDS does not collect data on a student's family income but does collect aggregate data on institutional characteristics that provide reasonable proxies.³ In Indicator 2, we report the percentage of full-time, first-time degree-seeking undergraduate students receiving "federal grants." Federal grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Departments of Veterans Affairs and Labor. We report federal grant aid because separate Pell Grant data were not reported separately in IPEDS prior to 2009. Note that during the COVID pandemic period, additional Federal Grant aid was made available, so estimates may temporarily peak during that time.

Federal Pell Grant Receipt. Eligibility for Pell Grants is based on family income, family size, the number of family members attending college, and other factors, regardless of whether students are dependent or independent. However, a dependent student's Pell Grant eligibility is based on parents' family income, and an independent student's eligibility is based on the student's income plus any spousal income. In the 2024-25 award year, approximately 7.3 million students received a Pell Grant at a total cost of \$38.6 billion. This figure was down from a peak of 9.4 million students in 2011-12 during the Great Recession. In the 2024-25 award year, the maximum Pell Grant award was \$7,395 (Ma, 2025).

Socioeconomic Status. Socioeconomic status (SES) is a composite included in each of the NCES' high school longitudinal studies (National Center for Education Statistics, 1999, 2000, 2015b, 2022, 2024).⁴ The SES composite is based on data from the parent questionnaires or imputed from the student questionnaires. For the five NCES longitudinal studies, SES is based on five equally weighted components. These

² In 1986, the IPEDS system was initiated. Prior to this date, the U.S. Department of Education collected institutional data through other data collection systems such as the Higher Education General Information Survey (HEGIS) series, the immediate predecessor to IPEDS.

³ Current IPEDS measures include the percent of undergraduates receiving Pell Grants, percent of full-time, first-time (FTFT) undergraduates receiving Pell Grants, and percent of full-time, first-time (FTFT) undergraduates receiving federal grant aid.

⁴ These include the National Longitudinal Study, representing the scheduled high school graduating class of 1972 (NLS); High School and Beyond Study, representing the scheduled high school graduating class of 1982 (HS&B); National Education Longitudinal Study, representing the scheduled high school graduating class of 1992 (NELS); Education Longitudinal Study (ELS), representing the scheduled high school graduating class of 2004, and High School Longitudinal Study (HSL) representing the scheduled high school graduating class of 2013.

components are father's/guardian's education, mother's/guardian's education, family income, father's/guardian's occupational prestige score, and mother's/guardian's occupational prestige score.

Institutional Selectivity. Selectivity is measured in three different ways, but they are all related to the same construct. Some indicators use Barron's Admissions Competitiveness Index (Barron's College Division, 2018), which is based on measures such as the percentage of applicants admitted, students' high school class rank, and students' college entrance exam scores. NCES has published Barron's datasets corresponding to years in which students in the longitudinal studies typically first enrolled in a postsecondary institution. Some indicators utilize selectivity measures that were included in the NCES High School Longitudinal Studies and are derived from the Integrated Postsecondary Education Data System's Carnegie classification variables on the Institutional Characteristics file (National Center for Education Statistics, 2024, 2025a). We have also derived selectivity from IPEDS using the methods outlined in the National Postsecondary Student Aid Study (National Center for Education Statistics, 2020b, 2025a), which equally weights the admissions rate and the admissions 50th percentile estimated test score. See the specific indicator in the notes about the selectivity measure that was available for use, depending on the data sources used for the estimates.

Statistical Testing Results

Statistical tests were conducted for all estimates in this chapter that were derived from a sample survey. Estimates derived from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) come from a census of Title IV postsecondary institutions. Since these statistics are not subject to sampling errors, any differences mentioned in the text are considered real differences in the population, and no statistical tests were required. Efforts were made to ensure that any differences mentioned were meaningful. Indicators 2a through 2e did not require statistical testing.

For estimates derived from sample surveys, Table A25 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant.

Table A25: Statistical test results verifying the differences mentioned for Indicator 2

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold	
What types of higher education institutions do students attend? - Indicator 2f	2.6	Highest SES quintile in highest selectivity versus Lowest SES quintile in highest selectivity	Logistic regression - Odds Ratio	8.41	0.0000	0.050	*
What types of higher education institutions do students attend? - Indicator 2f	2.6	Highest SES quintile not enrolled versus Lowest SES quintile not enrolled	t-test	-13.00	0.0000	0.050	*
What types of higher education institutions do students attend? - Indicator 2g	2.7	Black/African American students not enrolled in postsecondary education versus White students not enrolled in postsecondary education	t-test	3.44	0.0006	0.005	*
What types of higher education institutions do students attend? - Indicator 2g	2.7	Black/African American students not enrolled in postsecondary education versus Asian students not enrolled in postsecondary education	t-test	5.84	0.0000	0.005	*
What types of higher education institutions do students attend? - Indicator 2g	2.7	Hispanic students not enrolled in postsecondary education versus White students not enrolled in postsecondary education	t-test	3.70	0.0061	0.005	NS
What types of higher education institutions do students attend? - Indicator 2g	2.7	Hispanic students not enrolled in postsecondary education versus Asian students attending non-competitive institutions	t-test	2.91	0.0036	0.005	*
What types of higher education institutions do students attend? - Indicator 2g	2.7	Amer. Indian/Alaska Native, not enrolled in postsecondary education, versus White students attending non-competitive institutions	t-test	0.69	0.4880	0.005	NS
What types of higher education institutions do students attend? - Indicator 2g	2.7	Amer. Indian/Alaska Native, not enrolled in postsecondary education, versus Asian students attending non-competitive institutions	t-test	0.73	0.4643	0.005	NS
What types of higher education institutions do students attend? - Indicator 2g	2.7	Hispanic students attending non-competitive institutions versus White students attending non-competitive institutions	t-test	3.05	0.0023	0.005	*
What types of higher education institutions do	2.7	Hispanic students attending non-competitive institutions versus	t-test	2.86	0.0043	0.005	*

students attend? - Indicator 2g		Asian students attending non-competitive institutions					
What types of higher education institutions do students attend? - Indicator 2g	2.7	Hispanic students attending non-competitive institutions versus Black/African American students attending non-competitive institutions	t-test	2.27	0.0231	0.005	NS
What types of higher education institutions do students attend? - Indicator 2g	2.7	Asian students in highly competitive institutions versus Hispanic students in competitive institutions	t-test	4.95	0.0000	0.005	*
What types of higher education institutions do students attend? - Indicator 2g	2.7	Asian students in highly competitive institutions versus Black/African American students in competitive institutions	t-test	8.07	0.0000	0.005	*
What types of higher education institutions do students attend? - Indicator 2g	2.7	White students in competitive institutions versus Hispanic students in competitive institutions	t-test	2.57	0.0102	0.005	NS
What types of higher education institutions do students attend? - Indicator 2g	2.7	White students in competitive institutions versus Black/African American students in competitive institutions	t-test	10.96	0.0000	0.005	*

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020) to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Figure 2.1: Students Receiving Federal Grants by Institution Level

Indicators 2a, 2b, and 2c were drawn from the Digest of Education Statistics (National Center for Education Statistics, 2023i) Table 331.20. At the time of publication, the data for 2023-24 had not been updated in the Digest Tables. Data from the most current year were pulled directly from the IPEDS data center (National Center for Education Statistics, 2025b).

The data used for the table comes from the IPEDS Institutional Characteristics and Student Financial Aid (SFA) components using the 2024 collection year (which matches to the SFA 2023-24 academic year survey). The cohort was filtered using the following characteristics:

- Title IV institutions (see PSET4FLG)
- Institutions within the United States (excluding the territories, but including Washington, DC; see OBEREG)
- Excludes administrative units(see SECTOR).
- Is degree-granting (see DEGGRANT)

The variables used for this analysis included:

- Total number of full-time first-time degree/certificate seeking undergraduates - financial aid cohort (SCUGFFN)
- Number of full-time first-time undergraduates awarded federal grant aid (FGRNT_N)
- Institutional level based on the highest degree awarded (ICLEVEL)

The figure is a percentage distribution of federal grant recipients and those that have not had federal grants by the institutional level, as shown in Table A26.

Table A26: Estimates from Figure 2.1 Percentage distribution of full-time, first-time degree-seeking undergraduate students who did and did not receive federal grants (including Pell Grants) by level of institution attended: 2004 and 2024 (Indicator 2a)

	Federal grant recipients	Non-Federal grant recipients
Total	100.0	100.0
2003-04		
4-year	55.3	69.7
2-year	44.7	30.3
2023-24		
4-year	68.7	82.6
2-year	31.3	17.4

NOTES: Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Department of Veterans Affairs and the Department of Labor. Estimates may not sum to totals due to rounding.

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023i). Data from 2023-24 were updated using the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 2.2.: Student Receiving Federal Grants by Institution Control

Refer to the documentation provided for Figure 2.1 above for a description of the data sources and methods used to categorize to generate estimates for the table. The additional variable used to generate this table was institution control (or the type of governance at the institution – public, private nonprofit, or private for-profit). The figure is a percentage distribution of federal grant recipients and those that have not had federal grants by the institutional control, as shown in Table A27 and Table A28.

Table A27: Federal grant recipients of first-time full-time student estimates from Figure 2.2.: Percentage distributions of full-time, first-time degree-seeking undergraduate federal grant recipients and nonrecipients, by control of institution attended: 2004 to 2024 (Indicator 2b)

Year	Public	Private Non-Profit	Private For-Profit	Total
2024	72.6	17.5	9.9	100.0
2023	73.8	16.7	9.4	100.0
2022	76.0	16.4	7.5	100.0
2021	72.8	18.1	9.1	100.0
2020	73.4	18.2	8.4	100.0
2019	72.1	19.1	8.8	100.0
2018	72.1	18.7	9.1	100.0
2017	69.2	19.9	10.9	100.0
2016	70.5	18.2	11.3	100.0
2015	70.1	17.1	12.8	100.0
2014	69.4	15.3	15.3	100.0
2013	68.5	15.2	16.3	100.0
2012	67.4	14.6	18.0	100.0
2011	65.5	14.9	19.6	100.0
2010	56.2	12.6	31.2	100.0
2009	61.6	14.7	23.6	100.0
2008	60.0	15.1	25.2	100.0
2007	62.1	16.1	21.9	100.0
2006	60.5	16.1	23.5	100.0
2005	62.0	16.5	21.5	100.0
2004	64.0	17.9	18.1	100.0

NOTES: Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Department of Veterans Affairs and the Department of Labor. Estimates may not sum to totals due to rounding.

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023i). Data from 2023-24 were updated using the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Table A28: Non-federal grant recipients of first-time full-time student estimates from Figure 2.2:: Percentage distributions of full-time, first-time degree-seeking undergraduate Federal Grant recipients and nonrecipients, by control of institution attended: 2004 to 2022 (Indicator 2b)

Year	Public	Private Non-Profit	Private For-Profit	Total
2024	72.3	24.6	3.1	100.0
2023	70.8	25.9	3.3	100.0
2022	64.2	31.1	4.7	100.0
2021	70.3	26.0	3.7	100.0
2020	71.8	25.0	3.2	100.0
2019	71.9	25.3	2.9	100.0
2018	71.4	25.0	3.6	100.0
2017	71.2	25.0	3.8	100.0
2016	71.6	24.8	3.6	100.0
2015	70.9	25.3	3.8	100.0
2014	70.4	24.8	4.7	100.0
2013	69.7	25.0	5.3	100.0
2012	69.9	24.8	5.3	100.0
2011	70.4	23.8	5.8	100.0
2010	69.2	21.8	9.0	100.0
2009	69.9	22.3	7.8	100.0
2008	68.0	22.0	10.1	100.0
2007	65.8	21.4	12.8	100.0
2006	67.9	22.6	9.5	100.0
2005	68.6	23.2	8.2	100.0
2004	69.8	23.0	7.2	100.0

NOTES: Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Department of Veterans Affairs and the Department of Labor. Estimates may not sum to totals due to rounding.

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023i). Data from 2023-24 were updated using the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 2.3: Students Receiving Federal Grants by Sector

Refer to the documentation provided for Figure 2.1 above for a description of the data sources and methods used to categorize to generate estimates for the table. The additional variable used to generate this table was institution sector, which is a combination of level (2-year/4-year) and is defined by the highest degree offered, as well as control or governance (public, private non-profit, and private for-profit). Figure 3.3 presents a percentage rather than a percentage distribution, as seen in Indicators 2a and 2b. Table A29 includes the estimates that were used to create the figure.

Table A29: Estimates from Figure 2.3: Percentage of full-time, first-time degree/certificate-seeking undergraduate students receiving Federal Grants by sector: 2001-2024 (Indicator 2c)

Year	Private Non-Profit 2-Year	Private For-Profit 2-Year	Private For-Profit 4-Year	Public 2-Year	Public 4-Year	Private Non-Profit 4-Year
2001	49.2	58.0	36.1	35.2	26.6	27.4
2004	53.5	62.2	47.5	39.0	28.4	28.5
2005	55.3	63.5	52.2	39.7	28.3	27.2
2006	51.6	63.6	46.8	38.0	26.6	26.0
2007	47.6	63.4	32.5	37.5	26.6	25.8
2008	53.3	65.0	51.5	39.1	28.0	26.7
2009	59.3	66.6	57.8	41.5	28.1	26.9
2010	66.9	74.0	75.9	49.7	34.4	32.4
2011	73.3	76.8	73.6	55.7	38.9	35.4
2012	76.3	75.2	75.5	58.2	39.1	33.9
2013	67.1	70.9	73.5	56.3	37.8	33.1
2014	70.6	73.0	72.5	56.0	37.9	33.1
2015	74.3	74.0	71.9	55.6	37.5	32.6
2016	81.8	72.3	65.5	52.4	36.8	31.9
2017	81.7	70.1	63.6	51.9	36.4	31.5
2018	84.1	67.2	62.4	53.0	37.9	32.6
2019	81.4	70.8	65.4	52.2	37.3	32.6
2020	84.7	77.4	69.2	60.5	48.9	42.8
2021	79.5	74.5	67.8	60.6	48.8	41.2
2022	73.0	69.5	62.6	71.5	56.1	39.3
2023	73.3	69.6	63.1	57.3	37.9	30.5
2024	73.3	71.6	66.1	52.8	38.3	32.5

NOTES: Federal Grant aid is comprised primarily of Pell Grants but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Department of Veterans Affairs and the Department of Labor. The institution sector is a combination of level (2-year/4-year) and is defined by the highest degree offered and control or governance (public, private non-profit, and private for-profit).

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023). Data from 2023-24 were updated using the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025). Analysis by authors.

Figure 2.4: Income, Socioeconomic Status, and Institutional Selectivity

The estimates from this table were derived from the Integrated Postsecondary Education Data System Header, Institutional Characteristics, and Student Financial Aid survey components. Selectivity was derived from the process outlined in the National Postsecondary Student Aid Study (National Center for Education Statistics, 2020) selectivity indicator (SELECTV), which combines the acceptance rate, admissions test scores, and the open access indicator from the Integrated Postsecondary Education Data System. The measure was adapted to include open-access institutions.

The cohort was filtered using the following characteristics:

- Title IV institutions (see PSET4FLG), including those that are not primarily postsecondary
- Institutions within the United States (excluding the territories, but including Washington, DC; see OBEREG)
- Excludes U.S. Service institutions (OBEREG)
- Excludes administrative units (see SECTOR).
- Is degree-granting (see DEGGRANT)

The variables used for this analysis included:

- Number of applicants (APPLCN)
- Number of applicants admitted to the institution (ADMSSN)
- SAT 25th Percentile Math score for the institution (SATMT25)
- SAT 25th Percentile Verbal score for the institution (SATVR25)
- SAT 75th Percentile Math score for the institution (SATMT75)
- SAT 75th Percentile Verbal score for the institution (SATVR75)
- ACT Composite 25th Percentile score for the institution (ACTCM25)
- ACT Composite 75th Percentile score for the institution (ACTCM75)
- SAT 50th Percentile Math score for the institution (SATMT50) for 2023-24 only
- SAT 50th Percentile Verbal score for the institution (SATVR50) or 2023-24 only
- ACT Composite 50th Percentile score for the institution (ACTCM50) or 2023-24 only
- Number of full-time first-time undergraduates awarded federal grant aid (FGRNT_N)
- Institutional level based on the highest degree awarded (ICLEVEL)
- Open admissions policy flag (OPENADMP)

Selectivity was calculated by equally weighting the admissions rate (the number of those admitted divided by the number of applicants) and admissions test scores. If a measure was missing from the analysis (such as a test score for test-optional institutions), the other measure was used. Institutions with an open admissions policy were placed in a separate category. Institutions with zero applicants were excluded from the measure for that year. SAT and ACT scores were derived into a single measure by using the concordance table provided by ACT and presented in Table A30. The 50th percentile was used in 2023-24, and an estimate of the 50th percentile was used by taking the midpoint between the 25th percentile and 75th percentile scores in the other years.

For institutions where both selectivity and admissions rate measures were present, the quartile of each measure was derived. Because lower admissions rates reflect higher selectivity, the quartiles were reversed so that the highest quartile reflected the lowest admissions rate. The quartiles were then summed and divided by two. If only one quartile was available, it was used in place of the two. The average quartile scores were then subsetted into three groups with the lowest quartile having the lowest selectivity (averages between zero and 1.49), the second two quartiles defined as moderate selectivity (averages between 1.5 and 3.49), and very selective with quartiles above 3.5.

The percentage of students receiving Pell grants from the Student Financial Aid component were split into quartiles as well. The estimates for the figure are presented in Table A31.

Table A30: SAT-ACT concordance table used to calculate the selectivity index in Figure 2.4

ACT Composite Score	SAT Combined Score	SAT Range
36	1590	1570-1600
35	1540	1530-1560
34	1500	1490-1520
33	1460	1450-1480
32	1430	1420-1440
31	1400	1390-1410
30	1370	1360-1380
29	1340	1330-1350
28	1310	1300-1320
27	1280	1260-1290
26	1240	1230-1250
25	1210	1200-1220
24	1180	1160-1190
23	1140	1130-1150
22	1110	1100-1120
21	1080	1060-1090
20	1040	1030-1050
19	1010	990-1020
18	970	960-980
17	930	920-950
16	890	880-910
15	850	830-870
14	800	780-820
13	760	730-770
12	710	690-720
11	670	650-680
10	630	620-640
9	590	590-610

SOURCE: The College Board and ACT (2018)

Table A31: Estimates from Figure 2.4: Percentage distribution of the proportion of Pell students attending degree-granting colleges and universities in quartiles, by selectivity level: 2008-09 to 2023-23, selected academic years (Indicator 2d(i))

	Highest proportion of Pell students (4th Quartile)	Second-highest proportion of Pell students (3rd Quartile)	Second-lowest proportion of Pell students (2nd Quartile)	Lowest proportion of Pell students (1st Quartile)
Open Admissions, 2-year colleges				
2008-09	27.4	23.8	24.1	24.6
2013-14	27.1	27.8	24.1	21.0
2018-19	26.9	22.2	28.0	22.9
2023-24	27.3	23.1	27.8	21.8
Open Admissions, 4-year colleges				
2008-09	37.0	30.1	20.3	12.6
2013-14	46.0	19.7	18.8	15.6
2018-19	46.0	19.7	18.8	15.6
2023-24	41.1	19.1	19.6	20.2
Minimally Selective, 4-year colleges				
2008-09	26.0	38.0	20.7	15.3
2013-14	38.3	33.8	17.1	10.8
2018-19	38.3	33.8	17.1	10.8
2023-24	31.7	38.6	16.6	13.1
Moderately Selective, 4-year colleges				
2008-09	11.3	24.8	24.8	27.3
2013-14	10.9	32.4	32.4	24.4
2018-19	10.9	32.4	32.4	24.4
2023-24	13.9	30.9	30.9	23.8
Very Selective, 4-year colleges				
2008-09	17.4	14.5	15.1	53.1
2013-14	12.7	13.8	16.8	56.8
2018-19	12.7	13.8	16.8	56.8
2023-24	13.5	14.3	16.5	55.8

NOTES: Selectivity was derived from the process outlined in the National Postsecondary Student Aid Study (National Center for Education Statistics, 2020b) selectivity indicator (SELECTV) using a combination of the acceptance rate, admissions test scores, and the open access indicator in the Integrated Postsecondary Education Data System. The measure was adapted to include open-access institutions.

SOURCE: U.S. Department of Education, Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 2.5: Students Receiving Federal Grants by Institutional Selectivity

Data for Indicator 2e are calculated using data from IPEDS, are downloaded using their “Custom Data Files” data tool, and are based on degree-granting institutions. The variables used to classify institutions are derived from the Institutional Characteristics, Fall Enrollment, and Student Financial Aid components. The number of schools is based on the collection year, and institutional classification information for the school reflects the year of collection. Data are only for schools with complete level/control/sector information. The selectivity categories for the institutions are grouped based on the Barron’s Admission Competitiveness Index of 2019; however, schools that are for-profit, but are in a Barron's category, are included in the calculations as for-profit and not in the Barron's categories.

The 2023-24 IPEDS Variables used to develop the figure include:

- ICLEVEL: Level of institution
- CONTROL: Control of institution
- EFTOTAL: Grand total, all students undergraduate total
- SFA2324: total number of full-time, first-time, degree/certificate-seeking undergraduates-financial aid cohort
- FGRNT_N: Number of full-time first-time undergraduates awarded federal grant aid

The estimates used in the figures are found in Table A32 and Table A33.

Table A32: Noncompetitive estimates used for Figure 2.5: Average percentage of full-time, first-time degree/certificate-seeking undergraduate students who were awarded federal grants by institutional selectivity: 2000 to 2024 (Indicator 2e)

Year	Private For-Profit (All Levels)	Non-competitive	Less Competitive	2-Year (Public & Private Non-Profit)	4-Year Not Ranked (Public & Private Non-Profit)
2000	54.4	49.4	45.3	38.6	45.8
2001	54.3	51.6	44.0	40.1	46.3
2002	57.1	47.4	45.7	42.0	45.5
2003	59.6	52.4	46.3	43.6	47.5
2004	57.8	52.0	47.1	43.8	47.9
2005	57.3	52.2	45.8	44.3	44.0
2006	58.1	51.4	44.4	43.0	44.2
2007	56.2	50.0	44.6	42.1	44.3
2008	58.4	48.7	41.9	39.6	46.2
2009	63.3	48.0	41.9	42.0	46.4
2010	74.9	56.2	48.3	50.1	53.9
2011	77.3	58.2	52.5	56.1	58.4
2012	76.9	59.4	52.7	58.8	60.0
2013	73.4	57.5	51.9	56.6	58.6
2014	73.7	56.8	51.6	56.3	59.6
2015	75.0	57.6	51.3	55.8	58.0
2016	72.0	55.8	50.9	53.8	55.9
2017	70.0	54.6	51.2	54.7	53.6
2018	66.7	56.2	53.3	54.7	54.4
2019	70.1	55.0	52.9	53.7	54.0
2020	74.9	65.6	63.2	61.0	62.0
2021	72.7	66.0	63.3	61.2	58.0
2022	68.6	75.8	69.6	71.4	66.9
2023	68.8	52.4	54.6	58.0	53.8
2024	68.6	59.1	55.4	55.1	52.8

NOTES: Federal grant aid is comprised primarily of Pell Grants, but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Departments of Veterans Affairs and Labor. The data represent institutional averages in each category. The selectivity measure excludes for-profit institutions, 2-year institutions, special institutions, and unranked 4-year institutions as defined by Barron's Admissions Competitiveness Index.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) and Barron's Admissions Competitiveness Index (Barron's College Division, 2018). Analysis by authors.

Table A33: Competitive estimates used for Figure 2.5: Average percentage of full-time, first-time degree/certificate-seeking undergraduate students who were awarded Federal Grants by institutional selectivity: 2000 to 2024 (Indicator 2e)

Year	Competitive	Special	Very Competitive	Highly Competitive	Most Competitive
2000	34.3	30.9	27.2	19.4	15.2
2001	33.1	31.3	25.8	18.3	13.8
2002	34.7	30.5	27.0	18.8	13.9
2003	35.2	35.7	27.2	18.0	13.8
2004	35.3	34.3	26.6	19.0	14.1
2005	34.2	34.6	25.7	19.1	13.7
2006	32.1	29.6	24.5	17.1	13.1
2007	32.5	31.2	23.8	16.7	14.1
2008	30.2	27.0	22.3	17.5	14.6
2009	30.5	29.8	22.0	17.1	14.6
2010	36.9	32.5	26.7	21.3	17.3
2011	41.6	33.9	30.1	23.5	18.7
2012	41.3	32.4	29.8	22.3	17.7
2013	40.3	31.6	28.8	21.3	17.1
2014	40.4	31.5	28.8	20.9	17.2
2015	40.4	30.5	28.5	20.7	16.8
2016	39.7	29.6	28.0	20.1	16.5
2017	39.5	28.4	27.4	20.1	16.2
2018	41.1	29.9	28.9	20.7	16.7
2019	40.6	29.2	28.5	20.8	17.1
2020	52.4	34.5	43.9	29.3	23.9
2021	51.5	35.5	41.7	33.5	27.9
2022	56.4	33.0	47.5	37.2	25.5
2023	40.5	26.4	28.1	21.4	17.6
2024	44.5	36.8	33.1	24.1	17.8

NOTES: Federal grant aid is comprised primarily of Pell Grants, but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Departments of Veterans Affairs and Labor. The data represent institutional averages in each category. The selectivity measure excludes for-profit institutions, 2-year institutions, special institutions, and unranked 4-year institutions as defined by Barron's Admissions Competitiveness Index.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) and Barron's Admissions Competitiveness Index (Barron's College Division, 2018). Analysis by authors.

Figure 2.6: Socioeconomic Status and Postsecondary Attendance by Institutional Selectivity

The High School Longitudinal Study (HSLS) provides the data for Indicator 2f. This survey is a study of students who were in the 9th grade in 2009 with various follow-up interviews in 2012, 2013, and 2016. Data were downloaded using NCES's Datalab (National Center for Education Statistics, 2025a). The quintile categories are based on the family's socioeconomic circumstances (parent/guardians' education, occupation, and family income), and institutional selectivity is based on IPEDS's selectivity categories. The quick-retrieve code to replicate the table is "gwjflw" and to replicate the logistic regression is "lpaebv." The variables used to generate this table are X4PS1SELECT, X4X2SESQ5, and X3HSCOMPSTAT (filtering for high school graduates and equivalent). The W4STUDENT weight was used for the table, using replicate weights to adjust for the design effects of the complex survey design. The estimates used in the figure are found in Table A34.

Table A34. Estimates and standard errors for Figure 2.6: Percentage distribution of 2009 9th graders who graduated from high school by institutional selectivity of first postsecondary institution attended after high school graduation by SES quintile (Indicator 2f)

	Highly selective, 4-year institution	Moderately selective, 4-year institution	Inclusive, 4-year institution	Selectivity not classified	Never enrolled in postsecondary education
Estimates					
Total	13.5	20.4	6.2	37.1	22.8
First quintile (lowest)	4.1	11.4	4.7	42.6	37.3
Second quintile	6.2	15.9	6.3	41.3	30.2
Third quintile	7.2	18.3	6.5	42.0	26.1
Fourth quintile	14.6	26.7	7.7	35.2	15.6
Fifth quintile (highest)	33.3	29.5	5.8	24.5	7.0
Standard Errors					
Total	0.60	0.63	0.41	0.82	0.76
First quintile (lowest)	1.10	1.25	0.71	1.69	2.24
Second quintile	0.75	1.18	0.86	1.84	1.64
Third quintile	0.74	1.27	0.73	2.03	1.63
Fourth quintile	0.91	1.33	0.79	1.49	1.05
Fifth quintile (highest)	1.47	0.97	0.63	1.23	0.64

NOTES: This chart is based on a sample of 2009 entering high school students who graduated or attained an equivalent high school diploma after 2013. The variables used to generate this table are X4PS1SELECT, X4X2SESQ5, and X3HSCOMPSTAT. The W4STUDENT weight was used for the table, using replicate weights to adjust for the design effects of the complex survey design.

SOURCE: U.S. Department of Education, National Center for Education Statistics, High School Longitudinal Study (HSL:2009) (National Center for Education Statistics, 2024). Tabulated using NCES PowerStats (National Center for Education Statistics, 2025a). Analysis by authors.

Figure 2.7: Race/Ethnicity and Postsecondary Attendance by Institutional Selectivity

The High School Longitudinal Study (HSLS) provides the data for Indicator 2f (National Center for Education Statistics, 2024). This survey is a study of students who were in the 9th grade in 2009 with various follow-up interviews in 2012, 2013, and 2016. Data were downloaded using NCES's Datalab (National Center for Education Statistics, 2025a). The quintile categories are based on the family's socioeconomic circumstances (parent/guardians' education, occupation, and family income), and institutional selectivity is based on IPEDS's selectivity categories. The quick-retrieve code to replicate the table is "ngckwe." The variables used to generate this table are X4PS1SELECT, X1RACE, and X3HSCOMPSTAT (filtering for high school graduates and equivalent). The W4STUDENT weight was used for the table, using replicate weights to adjust for the design effects of the complex survey design. The estimates used in the figure are found in Table A35.

Table A35: Estimates and standard errors for Figure 2.7: Percentage distribution of 2009 9th graders who graduated from high school by institutional selectivity of enrollment after high school graduation by race/ethnicity (Indicator 2g)

	Highly selective, 4-year institution	Moderately selective, 4-year institution	Inclusive, 4-year institution	Selectivity not classified	Never enrolled in postsecondary education
Estimates					
Total	13.5	20.4	6.2	37.1	22.8
Amer. Indian/Alaska Native, non-Hispanic	8.3	14.5	6.4	33.8	37.0
Asian, non-Hispanic	32.1	21.2	3.6	31.7	11.4
Black/African-American, non-Hispanic	5.1	18.9	11.2	35.8	29.0
Hispanic, no race specified	7.3	11.3	2.6	49.0	29.8
Hispanic, race specified	6.7	13.6	5.5	49.8	24.3
More than one race, non-Hispanic	8.7	18.3	5.6	43.2	24.2
Native Hawaiian/Pacific Islander, non-Hispanic	7.9	14.1	13.0	47.9	17.1
White, non-Hispanic	17.3	23.8	5.7	32.3	20.9
Standard Errors					
Total	0.60	0.63	0.41	0.82	0.76
Amer. Indian/Alaska Native, non-Hispanic	7.55	7.16	4.71	10.15	6.78
Asian, non-Hispanic	3.25	2.27	1.23	2.76	2.03
Black/African-American, non-Hispanic	0.78	1.70	1.41	2.12	2.22
Hispanic, no race specified	3.81	4.21	1.41	5.41	5.96
Hispanic, race specified	1.18	1.56	0.90	2.32	1.84
More than one race, non-Hispanic	1.17	1.70	0.98	3.10	2.33
Native Hawaiian/Pacific Islander, non-Hispanic	8.87	7.89	7.55	15.56	9.74
White, non-Hispanic	0.80	0.74	0.48	0.93	0.74

NOTES: Federal grant aid is comprised primarily of Pell Grants, but also includes Federal Supplemental Educational Opportunity Grants (FSEOG) and grants from federal agencies other than the U.S. Department of Education, such as the Departments of Veterans Affairs and Labor. The data represent institutional averages in each category. The selectivity measure excludes for-profit institutions, 2-year institutions, special institutions, and unranked 4-year institutions as defined by Barron's Admissions Competitiveness Index.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) and Barron's Admissions Competitiveness Index (Barron's College Division, 2018). Analysis by authors.

3. Indicator 3 (Is cost a barrier to higher education access and completion?)

Definitions used for Indicator 3

Indicator 3 drew primarily from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b), the Digest of Education Statistics (National Center for Education Statistics, 2023g), and the National Postsecondary Student Aid Study (National Center for Education Statistics, 2020b). Drawing on definitions derived within these data collections, we rely on the following measures.

College Cost is reported annually by institutions to the U.S. Department of Education through IPEDS and include tuition, fees, and room and board. Average costs in this report are weighted by undergraduate full-time enrollment but do not account for residency status. In-state tuition and required fees were used for public institutions.

Cost of Attendance (COA) is the total cost, on average, to attend college each year. The COA includes tuition and fees; on-campus room and board (or a housing and food allowance for off-campus students), and allowances for books, supplies, transportation, loan fees, and, if applicable, dependent care. It can also include other expenses like an allowance for the rental or purchase of a personal computer, costs related to a disability, and costs for eligible study abroad programs. COA is institutionally derived and used by the federal government in determining a student's financial need.

Maximum Pell Grant is the largest Pell Grant award allowed by federal law. The average Pell Grant award is lower than the maximum. In award year 2024-25, Pell Grant amounts are scheduled to range from a 10 percent minimum of \$750 to a maximum of \$7,395 (Glick, 2025).

Expected Family Contribution (EFC) has been used historically and is used for the time span of data reported to estimate eligibility and amount of Pell Grant Aid. Starting in the 2024-25, the EFC was replaced by the Student Aid Index (SAI), but most calculations used in this chapter use the old EFC calculations as new data has not been collected using the SAI.⁵ EFC was calculated by the federal government from information submitted on the Free Application for Federal Student Aid (FAFSA) and determines a student's eligibility for federal student aid. The EFC was determined using formulas mandated by Congress in the Higher Education Act of 1965, as amended, and takes account of indicators of financial strength such as income, assets, and family size. The EFC was combined with the cost of attendance (COA) and the student's enrollment intensity (e.g., full-time, part-time) to determine the amount of the Federal Pell Grant award. Tuition could be used to calculate the amount of the Pell Grant award for students enrolled at low-tuition schools (if tuition is less than the current maximum Pell Grant). The lower the EFC, the greater a student's demonstrated financial need. The amount of the Federal Pell Grant award generally increases as

⁵ The most significant changes to the calculation of the SAI include the removal of the number of family members in college for the eligibility calculation, the possibility that the SAI can be negative, the elimination of alternate EFCs for enrollment for a period other than 9 months, and the elimination of the Simplified Needs Test (SNT) and Auto-Zero calculations, replaced with similar calculations. Despite these changes, the new SAI is used for Pell Grant determination.

the EFC decreases. An applicant with the minimum EFC of zero will generally receive the maximum Pell award up to the applicant's COA for the year. Proportionally smaller awards are made to part-time students.

Dependency Status. For the purposes of determining federal financial aid, applicants are classified according to specified criteria as: dependent, independent with dependents or independent without dependents. Generally, persons under 24 are classified as dependent students unless they are married or otherwise meet specified special circumstances. Students under 24 and not meeting the special circumstances are classified as dependents regardless of whether their parents provide them with any financial support. For dependent students, the parents' tax returns are used to estimate EFC. For independent students, the applicant's, and spouse's income (if applicable) are used to determine the EFC. See Indicator 1 for a detailed description of the special circumstances criteria.

Unmet Need, as we are defining it in this report, is the financial need remaining after the Expected Family Contribution (EFC) and all grants and other discounts (but not loans) are subtracted from the cost of attendance (COA). Unmet need may be negative (meaning that students that have had their need met have a surplus of funds above and beyond what they require to pay for college).

Statistical testing

Statistical tests were conducted for all estimates in this chapter that were derived from a sample survey. Estimates derived from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) comes from a census of Title IV postsecondary institutions. Since these statistics are not subject to sampling error, any differences reported in the text are considered real population differences, and no statistical tests were required. Efforts were made to ensure that any differences mentioned were meaningful.

For estimates derived from the National Postsecondary Student Aid Study, Table A36 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant.

Table A36: Statistical test results verifying the differences mentioned for Indicator 3

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	1990 first (lowest) income quartile versus 2020 first (lowest) income quartile	t-test	-25.34	0.0000	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	1990 second income quartile versus 2020 second income quartile	t-test	-24.33	0.0000	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	1990 third income quartile versus 2020 third income quartile	t-test	-20.36	0.0000	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	1990 fourth (highest) income quartile versus 2020 fourth (highest income) quartile	t-test	6.30	0.0000	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	1990 first (lowest) income quartile versus 1990 fourth (highest) income quartile	t-test	3.70	0.0061	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	2020 first (lowest) income quartile versus 2020 fourth (highest income) quartile	t-test	29.30	0.0000	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	2020 second income quartile versus 2020 third income quartile	t-test	17.27	0.0000	0.006 *
Is cost a barrier to higher education access and completion? - Indicator 3c(i)	3.5	2020 second income quartile versus 2020 fourth (highest income) quartile	t-test	28.46	0.0000	0.006 *

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020), in order to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Figure 3.1: Average College Costs by Control/Governance of the College/University

The data for Figure 3.1 come from the Digest of Education Statistics table 330.10 (National Center for Education Statistics, 2023g) and was updated by the authors with final data from 2022-23 and 2023-24 and provisional data from 2024-25 in the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). The data used to supply the figure are located in Table A37 and Table A38. Cost data were weighted by full-time equivalent students. FTE was computed using the estimated equivalents reported in the IPEDS glossary:

The number of FTE students is calculated based on fall student headcounts as reported by the institution on the IPEDS Enrollment (EF) component (Part A). The full-time equivalent (headcount) of the institution's part-time enrollment is estimated by multiplying the factors noted below times the part-time headcount. These are then added to the full-time enrollment headcounts to obtain an FTE for all students enrolled in the fall. This formula is used to produce an FTE that is used annually in the Digest of Education Statistics.

- Part-time undergraduate enrollment
- Public 4-year (.403543)
- Private (not-for-profit and for-profit) 4-year (.392857)
- Public 2-year and <2-year (.335737)
- All other institutions (.397058)
- Part-time graduate enrollment
- Public 4-year (.361702)
- Private (not-for-profit and for-profit) 4-year (.382059)

The following filters were used to derive the dataset:

- 50 states and the District of Columbia (excludes outlying areas)
- Room and board are based on full-time undergraduate students.
- Degree-granting institutions
- Includes U.S. service academies.
- Title IV federal financial aid programs.
- Excludes administrative units.

Table A37: Estimates in current dollars for Figure 3.1 Average college costs (undergraduate tuition, fees, and room and board) charged for full-time students in degree-granting postsecondary institutions, by institutional level and control: 1974-75 to 2024-25

Year	4-Year	2-Year	Average for All	4-Year	2-Year	Year	4-Year	2-Year	Average for All	4-Year	2-Year
	Private Non-Profit and For-Profit	Private Non-Profit and For-Profit		Public	Public		Private Non-Profit and For-Profit	Private Non-Profit and For-Profit		Public	Public
1975	3,404	2,591	1,983	1,647	1,339	2001	21,856	14,907	10,820	8,653	4,839
1976	3,669	2,711	2,103	1,780	1,386	2002	22,896	15,825	11,380	9,196	5,137
1977	3,977	2,971	2,275	1,935	1,491	2003	23,787	17,753	12,014	9,787	5,601
1978	4,240	3,148	2,411	2,038	1,590	2004	25,070	19,558	12,953	10,674	6,012
1979	4,609	3,389	2,587	2,145	1,691	2005	26,260	20,297	13,793	11,426	6,375
1980	5,013	3,751	2,809	2,327	1,822	2006	27,333	21,404	14,634	12,108	6,492
1981	5,594	4,303	3,101	2,550	2,027	2007	28,919	20,284	15,486	12,799	6,815
1982	6,330	4,746	3,489	2,871	2,224	2008	30,226	21,686	16,227	13,429	6,977
1983	7,126	5,364	3,877	3,196	2,390	2009	31,232	22,723	17,045	14,212	7,549
1984	7,759	5,571	4,167	3,433	2,534	2010	31,847	24,463	17,650	15,036	7,708
1985	8,451	6,203	4,563	3,682	2,807	2011	32,517	23,101	18,475	15,919	8,079
1986	9,228	6,512	4,885	3,859	2,981	2012	33,677	23,605	19,401	16,787	8,617
1987	10,039	6,384	5,206	4,138	2,989	2013	35,071	23,355	20,233	17,475	8,927
1988	10,659	7,078	5,494	4,403	3,066	2014	36,599	23,870	20,995	18,100	9,283
1989	11,474	7,967	5,869	4,678	3,183	2015	37,988	24,327	21,729	18,632	9,585
1990	12,284	8,670	6,207	4,975	3,299	2016	39,534	24,375	22,439	19,204	9,914
1991	13,237	9,302	6,562	5,243	3,467	2017	41,465	24,888	23,091	19,488	10,090
1992	14,258	9,632	7,077	5,693	3,623	2018	43,131	25,596	23,833	20,049	10,280
1993	15,009	9,903	7,452	6,020	3,799	2019	44,671	28,580	24,619	20,597	10,951
1994	15,904	10,406	7,931	6,365	3,996	2020	45,925	26,744	25,280	21,035	11,060
1995	16,602	11,170	8,306	6,670	4,137	2021	46,215	25,664	25,906	21,337	11,560
1996	17,612	11,563	8,800	7,014	4,217	2022	47,930	27,349	26,858	21,832	11,605
1997	18,442	11,954	9,206	7,334	4,404	2023	48,275	28,413	27,148	22,151	11,578
1998	19,070	12,921	9,588	7,673	4,509	2024	49,751	29,538	28,197	23,029	12,151
1999	19,929	13,319	10,076	8,027	4,604	2025	51,440	29,669	29,129	23,809	12,874
2000	20,737	14,045	10,430	8,274	4,730						

NOTES: College Costs are reported annually by institutions to the U.S. Department of Education through IPEDS and include tuition, fees, and room and board. Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates but not adjusted to reflect student residency. Room and board costs are based on full-time students.

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023g). Final data for 2022-23, 2023-24 and provisional data for 2024-25 academic years were updated using the Integrated Postsecondary Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Table A38: Estimates in constant 2025 dollars for Figure 3.1 Average college costs (undergraduate tuition, fees, and room and board) charged for full-time students in degree-granting postsecondary institutions, by institutional level and control: 1974-75 to 2024-25

Year	4-Year	2-Year	Average for All	4-Year Public	2-Year Public	Year	4-Year	2-Year	Average for All	4-Year Public	2-Year Public
	Private Non-Profit and For-Profit	Private Non-Profit and For-Profit					Private Non-Profit and For-Profit	Private Non-Profit and For-Profit			
1975	20,370	15,505	11,867	9,853	8,013	2001	39,731	27,099	19,669	15,731	8,797
1976	20,758	15,339	11,901	10,069	7,842	2002	40,974	28,321	20,366	16,457	9,194
1977	21,128	15,783	12,087	10,280	7,919	2003	41,620	31,063	21,020	17,125	9,801
1978	20,937	15,543	11,904	10,062	7,849	2004	42,727	33,333	22,077	18,192	10,246
1979	20,440	15,030	11,470	9,511	7,498	2005	43,288	33,459	22,738	18,835	10,510
1980	19,585	14,657	10,975	9,093	7,117	2006	43,649	34,181	23,369	19,336	10,367
1981	19,811	15,240	10,984	9,033	7,179	2007	44,903	31,496	24,045	19,874	10,583
1982	21,118	15,835	11,641	9,578	7,420	2008	45,197	32,428	24,265	20,080	10,433
1983	23,034	17,339	12,531	10,331	7,724	2009	46,869	34,099	25,579	21,327	11,328
1984	24,043	17,262	12,913	10,637	7,851	2010	47,019	36,118	26,059	22,199	11,380
1985	25,285	18,561	13,652	11,015	8,399	2011	46,540	33,064	26,443	22,785	11,563
1986	27,107	19,129	14,348	11,334	8,756	2012	47,223	33,099	27,205	23,539	12,083
1987	28,452	18,091	14,753	11,726	8,470	2013	48,468	32,276	27,962	24,150	12,337
1988	29,008	19,262	14,953	11,983	8,343	2014	49,772	32,462	28,551	24,614	12,624
1989	29,791	20,685	15,237	12,146	8,263	2015	51,599	33,044	29,514	25,308	13,020
1990	30,258	21,357	15,290	12,255	8,127	2016	53,030	32,697	30,099	25,761	13,299
1991	31,289	21,988	15,510	12,392	8,196	2017	54,461	32,688	30,328	25,596	13,252
1992	32,716	22,103	16,240	13,064	8,313	2018	55,298	32,817	30,556	25,704	13,180
1993	33,441	22,065	16,604	13,412	8,464	2019	56,253	35,990	31,002	25,937	13,790
1994	34,549	22,606	17,230	13,827	8,680	2020	57,128	33,267	31,446	26,167	13,757
1995	35,071	23,597	17,545	14,091	8,739	2021	54,909	30,491	30,780	25,351	13,734
1996	36,137	23,727	18,057	14,392	8,652	2022	52,727	30,086	29,545	24,017	12,767
1997	36,993	23,979	18,466	14,712	8,834	2023	51,006	30,021	28,684	23,404	12,233
1998	37,665	25,521	18,936	15,156	8,907	2024	51,060	30,315	28,939	23,635	12,471
1999	38,511	25,738	19,471	15,511	8,898	2025	51,440	29,669	29,129	23,809	12,874
2000	38,770	26,258	19,500	15,469	8,843						

NOTES: College Costs are reported annually by institutions to the U.S. Department of Education through IPEDS and include tuition, fees, and room and board. Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates but not adjusted to reflect student residency. Room and board costs are based on full-time students.

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023g). Final data for 2022-23, 2023-24 and provisional data for 2024-25 academic years were updated using the Integrated Postsecondary Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 3.2: Average Cost of Attendance for Full-Time Undergraduates Compared to Average Pell Grants

Figure 3.2 uses the same average cost data sources as displayed in Figure 3.1. In addition, statistics were pulled from *Trends in College Pricing and Student Aid* (Ma & Pender, 2025), Digest of Education Statistics (National Center for Education Statistics, 2023g), Pell End of Year Reports (U. S. Department of Education, 2025), and Summary Pell Grant Statistics to compare average costs, Pell Grant maximums, and Pell Grant averages. Final data for 2022-23, 2023-24, and provisional data for 2024-25 academic years were updated using the Integrated Postsecondary Data System (National Center for Education Statistics, 2025b). All numbers were adjusted for inflation using the Consumer Price Index. The values used to populate the figure are displayed in Table A39.

Table A39: Estimates used for Figure 3.2 Average costs (tuition and required fees plus room and board) for full-time undergraduate enrollment and maximum and average Pell Grant awards (1973-74 to 2024-25) (in constant 2024 dollars) (Indicator 3b(i))

Year	Average Cost	Pell Maximum	Pell Average	Year	Average Cost	Pell Maximum	Pell Average
1973	12,427	3,193	1,910	1999	19,500	5,884	3,606
1974	11,867	6,681	4,021	2000	19,669	6,011	3,717
1975	11,901	8,163	4,436	2001	20,366	6,642	4,070
1976	12,087	7,718	4,184	2002	21,020	6,975	4,248
1977	11,904	7,247	3,924	2003	22,077	6,905	4,215
1978	11,470	7,698	3,916	2004	22,738	6,725	4,114
1979	10,975	7,777	4,013	2005	23,369	6,505	3,945
1980	10,984	6,662	3,356	2006	24,045	6,302	3,861
1981	11,641	5,763	2,929	2007	24,265	6,521	4,006
1982	12,531	5,851	3,119	2008	25,579	6,893	4,328
1983	12,913	5,669	3,193	2009	26,059	7,823	5,418
1984	13,652	5,736	3,355	2010	26,443	7,984	5,514
1985	14,348	6,122	3,728	2011	27,205	7,740	4,958
1986	14,753	6,010	3,724	2012	27,962	7,583	4,890
1987	14,953	5,799	3,598	2013	28,551	7,601	4,893
1988	15,237	5,834	3,711	2014	29,514	7,593	4,880
1989	15,290	5,818	3,638	2015	30,099	7,643	4,934
1990	15,510	5,520	3,479	2016	30,328	7,600	4,886
1991	16,240	5,528	3,524	2017	30,556	7,576	5,159
1992	16,604	5,366	3,450	2018	31,002	7,614	5,170
1993	17,230	4,993	3,268	2019	31,446	7,601	5,169
1994	17,545	4,868	3,179	2020	30,780	7,690	5,156
1995	18,057	4,816	3,118	2021	29,545	7,519	4,926
1996	18,466	4,938	3,153	2022	28,684	7,391	4,835
1997	18,936	5,277	3,315	2023	28,939	7,613	5,076
1998	19,471	5,773	3,611	2024	29,149	7,395	5,321

NOTES: College costs are weighted by undergraduate total full-time enrollment at all types of institutions, as reported by NCES. College costs include tuition, fees, and room and board. The maximum Pell Grant is the highest amount allowed by law. The average Pell Grant awarded each year is lower than the maximum, as most students do not receive the maximum.

SOURCE: *Trends in College Pricing and Student Aid* (Ma & Pender, 2025), Digest of Education Statistics (National Center for Education Statistics, 2023g), Pell End of Year Reports (U. S. Department of Education, 2025), and Summary Pell Grant Statistics. Final data for 2022-23, 2023-24, and provisional data for 2024-25 academic years were updated using the Integrated Postsecondary Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 3.3: Percentage of College Costs Covered by the Pell Grant

Figure 3.3 is another visual representation of Figure 3.2 computing a percentage of the values in Table A39. The percentages used to create the figure are presented in Table A40.

Table A40: Estimates used for Figure 3.3: Percentage of average costs (tuition and required fees plus room and board) covered by the maximum Pell Grant: 1974-75 to 2024-25 (Indicator 3b(ii))

Year	Percent	Year	Percent
1974	56.3	2000	30.6
1975	68.6	2001	32.6
1976	63.9	2002	33.2
1977	60.9	2003	31.3
1978	67.1	2004	29.6
1979	70.9	2005	27.8
1980	60.7	2006	26.2
1981	49.5	2007	26.9
1982	46.7	2008	26.9
1983	43.9	2009	30.0
1984	42.0	2010	30.2
1985	42.7	2011	28.4
1986	40.7	2012	27.1
1987	38.8	2013	26.6
1988	38.3	2014	25.7
1989	38.1	2015	25.4
1990	35.6	2016	25.1
1991	34.0	2017	24.8
1992	32.3	2018	24.6
1993	29.0	2019	24.2
1994	27.7	2020	25.0
1995	26.7	2021	25.4
1996	26.7	2022	25.8
1997	27.9	2023	26.3
1998	29.7	2024	25.2
1999	30.2		

NOTES: College costs are weighted by undergraduate total full-time enrollment at all types of institutions, as reported by NCES. College costs include tuition, fees, and room and board. The maximum Pell Grant is the highest amount allowed by law. The average Pell Grant awarded each year is lower than the maximum, as most students do not receive the maximum.

SOURCE: *Trends in College Pricing and Student Aid* (Ma & Pender, 2025), Digest of Education Statistics (National Center for Education Statistics, 2023g), Pell End of Year Reports (U. S. Department of Education, 2025), and Summary Pell Grant Statistics. Final data for 2022-23, 2023-24, and provisional data for 2024-25 academic years were updated using the Integrated Postsecondary Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 3.4: Unmet Need by Income Level

The data used for Figure 3.4 and use data from the National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS). NPSAS is a cross-sectional study of all students attending postsecondary education institutions that receive federal student financial aid in Title IV of the Higher Education Act. The net price estimates Figure 3.4 were produced using the DataLab PowerStats application (National Center for Education Statistics, 2025a) on the National Center for Education Statistics' website (<https://nces.ed.gov/datalab>). The estimates use the percentiles reported in each study and the cost of attendance minus grants (NETCST3, depending on the study). "Student need after accounting for grant aid" (SNEED3) was not used because negative values were converted to zeros. As such, estimates were computed by subtracting mean estimates and calculating pooled variance/standard errors by hand. Unlike the data presented in Figure S.1, the negative unmet need was not adjusted based on the cost of attendance. In other words, the unmet need in Figure 3.4 can exceed the cost of attendance at the institutions.

Data are filtered for dependent (DEPEND) full-time students attending one institution (ATTNSTAT). The QuickRetrieve codes for the estimates are:

- "rigcdm" for NPSAS:90,
- "wacyww" for NPSAS:93,
- "ibfyiy" for NPSAS:96,
- "bsolls" for NPSAS:2000,
- "sajlin" for NPSAS:04,
- "vrnqvb" for NPSAS:08,
- "wgkgqe" for NPSAS:12,
- "kuttey" for NPSAS:16, and
- "bmpevt" for NPSAS:20.

Estimates and standard errors represented in the figures are presented in Table A41. Estimates were further adjusted using the Consumer Prices Index. The adjusted estimates are presented in Table A42.

Table A41: Estimates and standard errors in current dollars for Figure 3.4 Unmet financial need of dependent full-time undergraduates attending one institution for a full year, by family income quartile: 1990 to 2020 (Indicator 3c(i))

	First (Lowest) Income Quartile	Second Income Quartile	Third Income Quartile	Fourth (Highest) Income Quartile
Estimates				
1990	3,585	1,344	(2,199)	(9,637)
1993	4,841	3,256	1,605	(9,853)
1996	6,407	5,456	1,822	(7,332)
2000	7,281	5,832	1,475	(10,193)
2004	8,960	7,276	2,446	(12,417)
2008	10,782	8,904	2,423	(13,251)
2012	13,268	12,915	8,126	(7,609)
2016	14,484	14,368	6,966	(19,632)
2020	16,304	15,370	6,242	(30,261)
Standard Errors				
1990	107	190	177	424
1993	164	196	207	468
1996	215	198	245	411
2000	170	171	183	294
2004	179	152	173	385
2008	155	178	195	432
2012	209	184	265	521
2016	412	277	395	1,099
2020	295	363	384	1,561

NOTE: Unmet need is defined as what remains after Expected Family Contribution (EFC) and all grants and discounts that do not have to be repaid are subtracted from the average Cost of Attendance (COA). Loans are not considered a discount. In some cases, negative unmet need can exceed the cost of attendance (no adjustments were made).

SOURCE: National Postsecondary Student Aid Study (1990, 1993, 1996, 2000, 2004, 2008, 2012, 2016, and 2020) (National Center for Education Statistics, 2020b). Analysis by authors.

Table A42: Estimates and standard errors in constant 2025 dollars for Figure 3.4 Unmet financial need of dependent full-time undergraduates attending one institution for a full year, by family income quartile: 1990 to 2020 (Indicator 3c(i))

	First (Lowest) Income Quartile	Second Income Quartile	Third Income Quartile	Fourth (Highest) Income Quartile
Estimates				
1990	8,830	3,311	(5,416)	(23,737)
1993	10,786	7,255	3,576	(21,951)
1996	13,147	11,195	3,739	(15,045)
2000	13,612	10,903	2,758	(19,057)
2004	15,271	12,401	4,169	(21,162)
2008	16,123	13,315	3,623	(19,815)
2012	18,605	18,109	11,394	(10,670)
2016	19,429	19,274	9,344	(26,334)
2020	20,281	19,119	7,765	(37,642)
Standard Errors				
1990	263	467	437	1,046
1993	365	437	461	1,043
1996	441	406	503	844
2000	317	319	342	550
2004	306	258	295	656
2008	232	266	291	647
2012	294	258	372	731
2016	552	372	531	1,474
2020	367	452	478	1,942

NOTE: Unmet need is defined as what remains after Expected Family Contribution (EFC) and all grants and discounts that do not have to be repaid are subtracted from the average Cost of Attendance (COA). Loans are not considered a discount. In some cases, negative unmet need can exceed the cost of attendance (no adjustments were made).

SOURCE: National Postsecondary Student Aid Study (1990, 1993, 1996, 2000, 2004, 2008, 2012, 2016, and 2020) (National Center for Education Statistics, 2020b). Analysis by authors.

4. Indicator 4 (How do students in the United States pay for college?)

Definitions for Indicator 4

Key terms used for Indicator 4 are defined as follows:

Net Price is Cost of Attendance (COA) Minus All Grant Aid. The Higher Education Act of 1965 (HEA), as amended, requires the U.S. Department of Education to make publicly available information on the average net price for each postsecondary institution participating in Title IV federal student aid programs. The HEA defines institutional net price as “the average yearly price actually charged to first-time, full-time undergraduate students receiving student aid at an institution of higher education after deducting aid.” Essentially, net price moves beyond an institution’s “sticker price” and provides students and families with an idea of how much a first-time, full-time undergraduate student who was awarded aid pays to attend a particular institution. The definition used for this report deducts after grant and scholarship aid, but not loan aid, from the published cost of attendance (COA).

Net Price of Attendance as a Percent of Average Family Income uses data from the various National Postsecondary Student Aid Surveys. The average family income for a quartile reflects the distribution of the NPSAS sample in the study year for dependent undergraduate students who attended a single institution for a full year. For the 2020 NPSAS, average family incomes for each quartile in 2022 dollars were as follows: First (lowest), \$21,481; Second, \$65,831, Third, \$125,821, and Fourth (highest), \$302,645

Dependent Student status has a specific definition for financial aid eligibility and is a student who is an undergraduate, unmarried, not a veteran, and younger than 24 years of age. For dependent students, parents’ income and assets are used to determine the Student Aid Index (SAI) (Expected Family Contribution (EFC) in earlier years) even if the parents have no intention of helping to pay students’ college expenses. In exceptional cases (e.g., parental child abuse, parental communication with the child prohibited by a court), the institution’s financial aid office may change a student’s status from dependent to independent.

Student Borrowing in this chapter, we include the percent borrowing and the average cumulative amounts borrowed at the time of bachelor’s, associate’s, and certificate completion from NPSAS. Using data from the Baccalaureate and Beyond Longitudinal Study data from a 4-year and 10-year follow-up of bachelor’s degree recipients for the 2008 cohort surveyed in 2012 and 2018, we include both undergraduate and graduate borrowing.

Statistical Testing

Statistical tests were conducted for all estimates in this chapter that were derived from a sample survey. Estimates derived from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) come from a census of Title IV postsecondary institutions. Since these statistics are not subject to sampling errors, any differences mentioned in the text are considered real differences in the population, and no statistical tests were required. Efforts were made to ensure that any differences mentioned were meaningful.

For estimates derived from sample surveys, Table A43 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant.

Table A43: Statistical test results verifying the differences mentioned for Indicator 4

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold
How do students in the United States pay for college? - Indicator 4a(i)	4.2	1990 lowest income quartile net price versus 1990 highest income quartile net price	t-test	-15.89	0.0000	0.050 *
How do students in the United States pay for college? - Indicator 4a(i)	4.2	2020 lowest income quartile net price versus 2020 highest income quartile net price	t-test	-33.46	0.0000	0.050 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	1990 lowest income quartile as a percent of income versus 2020 lowest income quartile as a percent of income	t-test	-21.64	0.0000	0.006 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	1990 second income quartile as a percent of income versus 2020 second income quartile as a percent of income	t-test	-23.41	0.0000	0.006 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	1990 third income quartile as a percent of income versus 2020 third income quartile as a percent of income	t-test	3.70	0.0061	0.006 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	1990 highest income quartile as a percent of income versus 2020 highest income quartile as a percent of income	t-test	-9.43	0.0000	0.006 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	2020 lowest income quartile net price as a percent of income versus 2020 second lowest income quartile net price as a percent of income	t-test	28.57	0.0000	0.006 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	2020 lowest income quartile net price as a percent of income versus 2020 third income quartile net price as a percent of income	t-test	36.14	0.0000	0.006 *
How do students in the United States pay for college? - Indicator 4b(ii)	4.3	2020 lowest income quartile net price as a percent of income versus 2020 highest income quartile net price as a percent of income	t-test	41.30	0.0000	0.006 *

How do students in the United States pay for college? - Indicator 4b(ii)	4.3	1990 lowest income quartile net price as a percent of income versus 2012 lowest income quartile net price as a percent of income	t-test	-9.90	0.0000	0.006	*
How do students in the United States pay for college? - Indicator 4c(ii)	4.5	2016 Percent who ever borrowed versus 2020 percent who ever borrowed	t-test	3.91	0.0001	0.010	*
How do students in the United States pay for college? - Indicator 4c(ii)	4.5	2000 for-profit percentage of students borrowed versus 2000 private nonprofit percentage of students borrowed	t-test	2.41	0.0169	0.010	N S
How do students in the United States pay for college? - Indicator 4c(ii)	4.5	2000 for-profit percentage of students borrowed versus 2000 public percentage of students borrowed	t-test	3.83	0.0002	0.010	*
How do students in the United States pay for college? - Indicator 4c(ii)	4.5	2020 for-profit percentage of students borrowed versus 2020 private nonprofit percentage of students borrowed	t-test	6.09	0.0000	0.010	*
How do students in the United States pay for college? - Indicator 4c(ii)	4.5	2020 for-profit percentage of students borrowed versus 2020 public percentage of students borrowed	t-test	7.17	0.0000	0.010	*
How do students in the United States pay for college? - Indicator 4c(ii)	4.5	2000 average amount borrowed versus 2020 average amount borrowed	t-test	-7.25	0.0000	0.050	*
How do students in the United States pay for college? - Indicator 4e(v)	4.6	Percentage of Black graduates who borrowed versus Percentage of White graduates who borrowed	t-test	8.73	0.0000	0.017	*
How do students in the United States pay for college? - Indicator 4e(v)	4.6	Percentage of Black graduates who borrowed versus Percentage of Hispanic or Latino graduates who borrowed	t-test	5.02	0.0000	0.017	*
How do students in the United States pay for college? - Indicator 4e(v)	4.6	Percentage of Black graduates who borrowed versus Percentage of Asian graduates who borrowed	t-test	8.98	0.0000	0.017	*
How do students in the United States pay for college? - Indicator 4e(v)	4.6	Black graduates amount borrowed versus White graduates amount borrowed	t-test	9.47	0.0000	0.050	*

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020) to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Figure 4.1: Higher Education Funding Responsibilities

The data from Figure 4.1 come from the National Income and Product Accounts (NIPA) produced by Bureau of Economic Analysis (2026a) and compiled in the Postsecondary Opportunity Data Archive (Mortenson & Brunt, 2025). NIPA is used by BEA to develop estimates of Gross Domestic Product, examining the overall spending by categories. This analysis examines the contributions to GDP from higher education spending, then computes a percentage split between personal expenditures, state/local expenditures, and federal government expenditures.

NIPA is not derived from a single survey. It is a framework of economic accounts that integrates data from a variety of sources, including administrative data, Census data, and sample survey data. Source data do not perfectly match BEA definitions, so BEA applies methodologies and models to adjust its data based on category, coverage, and timing (Bureau of Economic Analysis, 2026b). As such, there are no sampling errors, and analysts cannot compute standard errors. Differences between estimates are therefore considered real, but may be subject to errors unrelated to sampling. Table A44 lists the estimates used for Figure 4.1.

Table A44: Estimates for Figure 4.1: Percentage distribution of higher education funding responsibilities: 1952 to 2024 (Indicator 4a(i))

Year	Personal Consumption Expenditures	State/Local Expenditures	Federal Government Expenditures	Year	Personal Consumption Expenditures	State/Local Expenditures	Federal Government Expenditures
1952	50.0	50.0	0.0	1989	39.1	49.1	11.8
1953	53.3	46.7	0.0	1990	39.8	49.5	10.7
1954	53.3	46.7	0.0	1991	41.5	48.3	10.3
1955	52.9	47.1	0.0	1992	42.9	46.7	10.4
1956	52.6	47.4	0.0	1993	42.3	46.6	11.1
1957	50.0	50.0	0.0	1994	42.9	47.2	10.0
1958	50.0	50.0	0.0	1995	43.5	46.4	10.1
1959	50.0	50.0	0.0	1996	45.1	45.4	9.4
1960	44.1	50.0	5.9	1997	46.1	44.6	9.3
1961	44.4	50.0	5.6	1998	45.5	43.6	10.8
1962	45.0	47.5	7.5	1999	45.9	43.2	10.8
1963	45.5	47.7	6.8	2000	46.3	43.9	9.7
1964	46.9	46.9	6.1	2001	45.6	44.3	10.1
1965	47.4	43.9	8.8	2002	47.3	41.4	11.3
1966	45.6	44.1	10.3	2003	50.2	38.3	11.4
1967	42.2	44.6	13.3	2004	50.5	38.3	11.3
1968	41.5	48.9	9.6	2005	51.3	37.7	11.0
1969	41.7	50.0	8.3	2006	51.7	37.9	10.4
1970	40.3	50.4	9.3	2007	50.4	39.9	9.8
1971	39.6	51.7	8.7	2008	49.2	40.1	10.7
1972	39.6	52.4	7.9	2009	48.7	38.6	12.7
1973	39.9	53.4	6.7	2010	47.7	37.0	15.3
1974	37.8	55.7	6.5	2011	47.5	37.1	15.4
1975	34.7	57.6	7.6	2012	47.7	38.3	14.0
1976	34.0	56.5	9.5	2013	47.7	40.0	12.3
1977	33.4	56.1	10.5	2014	47.5	40.7	11.8
1978	33.6	56.0	10.4	2015	47.9	41.0	11.2
1979	33.2	54.8	12.0	2016	48.4	41.0	10.6
1980	33.0	52.9	14.1	2017	48.7	41.1	10.2
1981	33.0	52.2	14.7	2018	48.1	41.7	10.2
1982	35.3	52.9	11.8	2019	47.8	42.1	10.1
1983	36.2	50.8	13.1	2020	46.7	43.7	9.6
1984	37.5	50.8	11.7	2021	46.3	44.7	9.1
1985	37.3	51.0	11.7	2022	45.6	45.5	8.9
1986	38.3	50.9	10.8	2023	44.2	46.5	9.2
1987	39.4	50.2	10.4	2024	42.6	47.5	9.9
1988	39.7	49.7	10.6				

NOTES: National Income and Product Accounts (NIPA) data are periodically updated.

SOURCE: National Income and Product Accounts (NIPA) (Bureau of Economic Analysis, 2026a) and the Postsecondary Education Opportunity (PEO) Archive (Mortenson & Brunt, 2025).

Figure 4.2: Higher Education Net Average Price by Family Income

The data used for Figure 4.2 and use data from the National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS). NPSAS is a cross-sectional study of all students attending postsecondary education institutions that receive federal student financial aid in Title IV of the Higher Education Act. The net price estimates Figure 4.2 and were produced using the DataLab PowerStats application (National Center for Education Statistics, 2025a) on the National Center for Education Statistics' website (<https://nces.ed.gov/datalab>). The estimates use the percentiles reported in each study and the cost of attendance minus grants (NETCST3). Data are filtered for dependent (DEPEND) full-time students attending one institution (ATTNSTAT). The QuickRetrieve codes for the estimates are “kbbuyn” for NPSAS:90, “esxkmr” for NPSAS:93, “cidtmr” for NPSAS:96 through NPSAS:18 and “rbximr” for NPSAS:20. Estimates and standard errors represented in the figures are presented in Table A45. Estimates were further adjusted using the Consumer Prices Index. The adjusted estimates are presented in Table A46.

Table A45: Estimates and standard errors in nominal dollars for Figure 4.2: Average net price (cost of attendance minus grant/scholarship aid) for dependent full-time undergraduate students who attended one institution for a full year by family income quartile: 1990 to 2020 (in constant 2024 dollars) (Indicator 4b(i))

Year	First (Lowest) Income Quartile	Second Income Quartile	Third Income Quartile	Fourth (Highest) Income Quartile
Estimates				
1990	6,057	7,150	7,867	10,153
1993	7,298	8,608	9,407	12,297
1996	7,568	9,176	10,688	13,230
2000	8,501	11,176	12,729	15,014
2004	10,007	12,746	14,562	17,403
2008	11,837	15,449	18,426	22,281
2012	13,577	17,230	21,819	26,204
2016	14,994	17,814	22,403	29,439
2020	16,890	19,637	25,074	33,631
Standard Errors				
1990	84.0	86.9	115.5	243.7
1993	149.7	129.9	137.8	256.8
1996	225.5	195.8	208.7	332.2
2000	157.5	142.0	142.4	173.7
2004	186.7	138.1	133.2	193.9
2008	153.5	168.0	165.2	217.6
2012	217.5	174.2	210.2	286.8
2016	260.2	241.0	260.8	314.7
2020	295.5	322.2	284.5	451.4

NOTES: Net price of attendance is defined as the cost of attendance (COA) minus all grant aid and discounts, but not loans. Family income quartiles are based on the distribution of family income in each NPSAS survey.

SOURCE: National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS: 1990, 1993, 1996, 2000, 2004, 2008, 2012, 2016, and 2020). Analysis by authors.

Table A46: Estimates and standard errors in constant dollars for Figure 4.2: Average net price (cost of attendance minus grant/scholarship aid) for dependent full-time undergraduate students who attended one institution for a full year by family income quartile: 1990 to 2020 (in constant 2024 dollars) (Indicator 4b(i))

Year	First (Lowest) Income Quartile	Second Income Quartile	Third Income Quartile	Fourth (Highest) Income Quartile
Estimates				
1990	14,537	17,160	18,880	24,368
1993	15,843	18,686	20,420	26,695
1996	15,131	18,347	21,368	26,450
2000	15,485	20,359	23,187	27,350
2004	16,617	21,166	24,182	28,900
2008	17,246	22,509	26,845	32,463
2012	18,549	23,540	29,811	35,802
2016	19,597	23,283	29,281	38,477
2020	22,075	25,666	32,772	43,955
Standard Errors				
1990	201.6	208.5	277.1	584.8
1993	324.9	282.1	299.2	557.6
1996	450.8	391.4	417.2	664.1
2000	286.9	258.6	259.4	316.4
2004	310.0	229.4	221.3	322.1
2008	223.7	244.8	240.7	317.0
2012	297.1	238.1	287.2	391.9
2016	340.0	315.0	340.9	411.3
2020	358.1	390.5	344.8	547.1

NOTES: Net price of attendance is defined as the cost of attendance (COA) minus all grant aid and discounts, but not loans. Family income quartiles are based on the distribution of family income in each NPSAS survey.

SOURCE: National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS: 1990, 1993, 1996, 2000, 2004, 2008, 2012, 2016, and 2020). Analysis by authors.

Figure 4.3: Higher Education Average Net Price as a Percentage of Family Income

See the text for deriving Figure 4.2 for the methods used in creating Figure 4.3. In addition, the following Quick Retrieve codes were used to generate estimates of average dependent parent income by quartile: “cnlcm” for NPSAS:90, “tfyjdj” for NPSAS:93, “plrjys” for NPSAS:96 through NPSAS:16, and “pfbzm” for NPSAS:20. Standard errors were computed using pooled standard errors for calculating percentages. See the *Variance and Standard Error Calculations* section below. Table A47 lists the estimates and standard errors used to create the figure.

Table A47: Estimates and standard errors for Figure 4.3: Average net price as a percentage of average family income by income quartile for dependent full-time undergraduate students who attended one institution for a full year: 1990 to 2020 (Indicator 4b(ii))

Year	First (Lowest) Income Quartile	Second Income Quartile	Third Income Quartile	Fourth (Highest) Income Quartile
Estimates				
1990	57	24	17	11
1993	46	23	18	13
1996	57	26	18	12
2000	47	26	19	12
2004	56	28	20	13
2008	61	31	22	14
2012	88	37	26	15
2016	110	40	26	15
2020	119	44	28	15
Standard Errors				
1990	1.4	0.3	0.3	0.3
1993	1.0	0.4	0.3	0.3
1996	2.0	0.6	0.4	0.4
2000	1.5	0.6	0.4	0.3
2004	1.8	0.6	0.4	0.3
2008	1.9	0.7	0.4	0.4
2012	2.8	0.8	0.5	0.4
2016	3.6	0.9	0.5	0.4
2020	2.5	0.8	0.3	0.3

NOTES: Net price is tabulated based on all grants and scholarships, but does not include loans. Family income quartiles are based on the distribution of family income in each NPSAS survey.

SOURCE: National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS: 1990, 1993, 1996, 2000, 2004, 2008, 2012, 2016, and 2020). Analysis by authors.

Figure 4.4: Borrowing and Debt

The counts for this figure come directly from the National Student Loan Data System as reported by the Office of Federal Student Aid’s Federal Student Loan Portfolio (U. S. Department of Education, 2026). The dollar estimates were inflation-adjusted to 2025 dollars. Statistical tests were not required for these data as they are derived from a census. The numbers used to populate the figure are in Table A48.

Table A48: Counts and dollar amounts used for Figure 4.4: Number of federal borrowers, and cumulative amount of student debt (in constant 2025 dollars): 2003-2025 (Indicator 4c(i))

	Number of Student borrowers with Student Debt (in millions)	Amount of Outstanding Student Debt (in trillions of constant 2025 dollars)	Amount of Outstanding Student Debt (in trillions of current dollars)
2007	28.3	0.80	0.52
2008	29.9	0.86	0.58
2009	32.1	0.99	0.66
2010	34.3	1.11	0.75
2011	36.5	1.21	0.85
2012	38.3	1.33	0.95
2013	39.6	1.44	1.04
2014	40.7	1.54	1.13
2015	41.6	1.65	1.21
2016	42.3	1.73	1.29
2017	42.6	1.80	1.37
2018	42.9	1.85	1.44
2019	42.9	1.90	1.51
2020	42.9	1.95	1.57
2021	43.4	1.91	1.61
2022	43.5	1.80	1.63
2023	43.2	1.69	1.60
2024	42.7	1.68	1.64
2025	42.8	1.69	1.69

SOURCE: Federal Student Loan Portfolio, Office of Federal Student Aid (U. S. Department of Education, 2026).

Figure 4.5: Bachelor’s Degree Completers with Student Loans

Estimates for Figure 4.5 use data from the National Center for Education Statistics (2020b) National Postsecondary Student Aid Study (NPSAS). NPSAS is a cross-sectional study of all students attending postsecondary education institutions that receive federal student financial aid in Title IV of the Higher Education Act. The estimates were provided by the Digest of Education Statistics Table 331.95 (National Center for Education Statistics, 2023j) and inflation adjusted to 2025 dollars. The estimates and standard errors shown in the Figure 4.5 are presented in Table A49, Table A50, and Table A51.

Table A49: Percentage estimates and standard errors for Figure 4.5: Percentage of bachelor’s degree completers who ever received loans (federal and non-federal loans to students) and average amount borrowed among those who borrowed by institutional control: 1999-2000, 2003-04, 2007-08, 2011-12, 2015-16, and 2019-20

	All	Public	Private- nonprofit	Private for- profit
Estimates				
2000	77.2	60.0	66.2	77.2
2012	87.2	64.1	73.5	87.2
2016	86.5	66.4	69.2	86.5
2020	82.3	58.7	61.3	82.3
Standard Errors				
2000	0.70	0.80	1.16	4.41
2012	0.75	0.89	1.72	1.62
2016	0.62	0.69	1.75	1.95
2020	0.86	1.09	1.48	3.11

SOURCE: National Postsecondary Student Aid Study (NPSAS: 2000, 2012, 2016, and 2020) (National Center for Education Statistics, 2020b) and the Digest of Education Statistics (National Center for Education Statistics, 2023j). Analysis by author.

Table A50: Estimates and standard errors for the amount borrowed in current dollars for Figure 4.5: Percentage of bachelor’s degree completers who ever received loans (federal and non-federal loans to students) and average amount borrowed among those who borrowed by institutional control: 1999-2000, 2003-04, 2007-08, 2011-12, 2015-16, and 2019-20

	All	Public	Private- nonprofit	Private for- profit
Estimates				
2000	24,040	16,210	19,620	24,040
2012	40,040	25,640	32,310	40,040
2016	41,320	26,930	31,890	41,320
2020	40,970	27,430	33,910	40,970
Standard Errors				
2000	203.9	232.6	373.2	1,203.6
2012	456.2	454.0	1,181.4	798.2
2016	431.8	610.6	453.5	1,591.8
2020	592.7	511.2	1,035.1	3,588.7

SOURCE: National Postsecondary Student Aid Study (NPSAS: 2000, 2012, 2016, and 2020) (National Center for Education Statistics, 2020b) and the Digest of Education Statistics (National Center for Education Statistics, 2023j). Analysis by author.

Table A51: Estimates and standard errors for the amount borrowed in constant 2025 dollars for Figure 4.5: Percentage of bachelor’s degree completers who ever received loans (federal and non-federal loans to students) and average amount borrowed among those who borrowed by institutional control: 1999-2000, 2003-04, 2007-08, 2011-12, 2015-16, and 2019-20

	All	Public	Private- nonprofit	Private for- profit
Estimates				
2000	44,945	30,306	36,681	44,945
2012	56,145	35,953	45,306	56,145
2016	55,426	36,124	42,777	55,426
2020	50,964	34,121	42,182	50,964
Standard Errors				
2000	381.1	434.9	697.8	2,250.2
2012	639.6	636.7	1,656.6	1,119.3
2016	579.3	819.0	608.3	2,135.2
2020	737.2	635.9	1,287.6	4,464.1

SOURCE: National Postsecondary Student Aid Study (NPSAS: 2000, 2012, 2016, and 2020) (National Center for Education Statistics, 2020b) and the Digest of Education Statistics (National Center for Education Statistics, 2023j). Analysis by author.

Figure 4.6: Bachelor's degree graduates borrowing

Estimates for Figure 4.6 are derived from the 2008/18 Baccalaureate and Beyond Longitudinal Study (National Center for Education Statistics, 2020a) as published in the 10-year follow-up First Look publication (Cominole et al., 2021). Dollar estimates were inflation-adjusted to 2025 dollars. Percentage estimates and the amount borrowed in current and constant dollars are presented in

Table A52: Estimate and standard errors for Figure 4.6: Percentage of 2008 bachelor's degree recipients borrowing and the average amount (including non-borrowers) for undergraduate and graduate school in 2025 dollars, 10 years after completion, by race/ethnicity: 2018 (Indicator 4e(v))

	Percent who Borrowed	Average Amount Borrowed (Current Dollars)	Average Amount Borrowed (Constant 2025 Dollars)
Estimates			
White, not Hispanic or Latino	70.7	34,098	43,717
Black, not Hispanic or Latino	85.9	61,696	79,100
Hispanic or Latino	73.1	39,384	50,494
Asian, not Hispanic or Latino	59.6	37,012	47,453
Other or Two or More Races	75.9	37,877	48,562
Standard Errors			
White, not Hispanic or Latino	0.64	702	900
Black, not Hispanic or Latino	1.62	2,827	3,624
Hispanic or Latino	1.97	3,008	3,857
Asian, not Hispanic or Latino	2.44	3,982	5,105
Other or Two or More Races	2.68	4,177	5,355

NOTE: The Authors' calculation of the amount borrowed, including non-borrowers as zero, is based on published data on the percentage who borrowed and the average amount among those who borrowed using DataLab PowerStats (National Center for Education Statistics, 2025a).

SOURCE: 2008/18 Baccalaureate and Beyond Longitudinal Study (Cominole et al., 2021; National Center for Education Statistics, 2020a)

5. Indicator 5: (Do higher education attainment rates and outcomes vary by student characteristics?) Technical Notes

Definitions for Indicator 5

Definitions of terms not already provided in the report are presented below:

Bachelor’s Degree Attainment by Age 24 for Dependent Family Members. This Indicator reports estimated rates of bachelor’s degree attainment by age 24 by family income quartile for primary dependent family members using data from the October supplement to the Current Population Survey (CPS). CPS is the only available national annual data source that measures attainment by household income, but it has important limitations, and caution is warranted when interpreting the results. The CPS household survey data are reported in aggregate for cross-sectional groupings and include only individuals who were considered “dependent family members” of the household at the time of the CPS survey. Recent years have seen differential changes across income groups in dependency patterns and the time required to complete a bachelor’s degree. We use data from the NCES longitudinal studies to improve the calibration of the CPS estimates.⁶

Persistence and Completion Data from the Beginning Postsecondary Students Longitudinal Study (BPS). BPS tracks students who first enrolled in a postsecondary educational institution in the 2011-12 academic year. NCES began a new BPS cohort in 2019-20; however, this data is not yet available. Persistence and completion data are shown by parents’ income quartile for dependent students.

IPEDS Outcomes Component/Graduation Rates by Pell Grant Receipt. The IPEDS Outcomes Component provides cohort data on degree-seeking undergraduate students earning any formal award (certificate, associate’s, or bachelor’s degree) at the institution of first enrollment within 4 and 6 years. Pell Grant receipt data are shown by institution type and control status, and by institution acceptance rate.

Distributions of Associate and Bachelor’s Degrees Conferred by Race/Ethnicity Compared to Population Distributions. These measures use the annual IPEDS Completion Surveys to report the distributions of degrees conferred. We use Census data to compare the U.S. population distribution by race/ethnicity in 1980 and 2022.

Further Education, Early Career Earnings, and Unemployment for Recent Bachelor’s Degree Recipients. These Indicators are drawn from the NCES’s Baccalaureate and Beyond Longitudinal study (B&B) series. This report includes data on post-baccalaureate enrollment, annual income by parent income quartile and by major field of study, and unemployment for 2016 bachelor’s degree recipients 4 years after

⁶ See the methodological Figure 6.1 below for additional information. Caution is warranted when interpreting CPS estimates given the many underlying assumptions.

graduation in 2020 (B&B 2016/2020). In addition, the report incorporates High school graduate income from the Digest of Education Statistics.

Statistical Testing Results

Statistical tests were conducted for all estimates in this chapter that were derived from a sample survey. Estimates derived from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) comes from a census of Title IV postsecondary institutions. Since these statistics are not subject to sampling error, any differences reported in the text are considered real population differences, and no statistical tests were required.

Another data source from the U.S. Census, the Population and Housing Units Estimates (U. S. Census Bureau, 2022) estimates population counts from multiple administrative data sources between decennial Census collections. Since they do not use sampling methods to derive their estimates, there is no sampling error in the collection. Therefore, statistical testing was not used for this data source either.

For estimates derived from sample surveys, Table A53 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant. Table A54 documents the results of equivalency tests for select estimates, which were conducted to determine if the estimates were equivalent.

Table A53: Statistical test results verifying the differences mentioned for Indicator 5

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	1970 4th quartile attainment rate versus 2023 4th quartile attainment rate	t-test	-8.89	0.0000	0.005 *
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	1970 3rd quartile attainment rate versus 2023 3rd quartile attainment rate	t-test	-18.10	0.0000	0.005 *
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	1970 2nd quartile attainment rate versus 2023 2nd quartile attainment rate	t-test	-8.79	0.0000	0.005 *

Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	1970 1st quartile attainment rate versus 2023 1st quartile attainment rate	t-test	-6.16	0.0000	0.005	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	1970 gap between highest and lowest quartiles versus 2023 gap between highest and lowest quartiles	t-test	3.70	0.0061	0.005	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	Highest quartile percent change from 1970-2023 versus Lowest quartile percent change from 1970-2023	t-test	4.33	0.0000	0.005	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	Highest quartile percent change from 1970-2023 versus 2nd quartile percent change from 1970-2023	t-test	1.53	0.1272	0.005	N S
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	3rd quartile percent change from 1970-2023 versus Highest quartile percent change from 1970-2023	t-test	6.00	0.0000	0.005	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	3rd quartile percent change from 1970-2023 versus 2nd quartile percent change from 1970-2023	t-test	8.61	0.0000	0.005	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(i)	5.1	3rd quartile percent change from 1970-2023 versus Lowest quartile percent change from 1970-2023	t-test	11.82	0.0000	0.005	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii) Footnote	5.1	1970 2nd quartile attainment rate versus 1970 4th quartile attainment rate	t-test	-20.69	0.0000	0.025	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii) Footnote	5.1	1970 1st quartile attainment rate versus 1970 4th quartile attainment rate	t-test	-26.13	0.0000	0.025	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	2023 highest quartile attainment rate versus 2023 lowest quartile attainment rate	t-test	14.59	0.0000	0.004	*

Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	2023 highest quartile attainment rate versus 2023 2nd quartile attainment rate	t-test	10.27	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	2023 3rd quartile attainment rate versus 2023 lowest quartile attainment rate	t-test	12.27	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	2023 3rd quartile attainment rate versus 2023 2nd quartile attainment rate	t-test	8.01	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 2023 highest quartile attainment rate	t-test	-8.34	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 2023 3rd quartile attainment rate	t-test	-8.34	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 2023 2nd quartile attainment rate	t-test	6.01	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 2023 lowest quartile attainment rate	t-test	14.11	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 1970 highest quartile attainment rate	t-test	-21.70	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 1970 3rd quartile attainment rate	t-test	4.49	0.0000	0.004	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 1970 2nd quartile attainment rate	t-test	9.32	0.0000	0.050	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	5.2	25% reflecting equal quartiles versus 1970 lowest quartile attainment rate	t-test	16.09	0.0000	0.050	*

Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5c(v) and 5c(vi)	5.4	Lowest quartile completion status versus Highest quartile completion status	t-test	-15.48	0.0000	0.017	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5c(v) and 5c(vi)	5.4	Lowest quartile bachelor's completion status versus Highest quartile bachelor's completion status	t-test	-24.22	0.0000	0.017	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5c(v) and 5c(vi)	5.4	Lowest quartile, no degree percent versus Highest quartile, no degree percent	t-test	12.54	0.0000	0.017	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5d(i)	5.6	Lowest quartile family income at base year, income 4-years after graduation versus Highest quartile family income at base year, income 4-years after graduation	t-test	-7.40	0.0000	0.050	*
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5d(i)	5.6	Lowest quartile family income at base year, income 4-years after graduation versus High School Income between 25-34 years old	t-test	12.95	0.0000	0.05	*

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020), in order to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Table A54: Statistical test results verifying equivalencies mentioned for Indicator 5

Chapter Section	Figure	Comparison	Method	Traditional test (p _{trad})	Equivalence Test-Left Tail (p _{left})	Equivalence Test-Right Tail (p _{right})
Do higher education attainment rates and outcomes vary by student characteristics? - Indicator 5a(ii)	6.2	1970 highest and second highest quartile bachelor's attainment versus 2023 highest and second highest quartile bachelor's attainment	t-test	0.9364	0.0078	0.0124 *

* Statistically significant test.

NS: Not statistically significant.

NOTES: Equivalence tests require that the traditional test for difference is not statistically significant, and both the left- and right-tailed tests are statistically significant. While three statistical tests need to be computed, no adjustments for multiple comparison tests are required (Rogers et al., 1993). For a p-value threshold of 0.05, each tail of the test is divided into two, so each tail uses a threshold of $p < 0.025$.

SOURCE: Analysis by authors.

Figure 5.1: Bachelor’s Degree Attainment by Age 24, by Family Income Quartile

For Figure 5.1 and 5.2 are collected by the US Census Bureau and reported by the Bureau of Labor Statistics (BLS) yearly from the October supplement to the Current Population Survey (CPS), a national sample of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment. Due to small sample sizes, estimates for disaggregated data have larger sampling errors than estimates for the total. Results are derived using the Microdata Access Tool (U.S. Census Bureau, 2025d). Quartiles are calculated using family income and are limited to dependent family members aged 18 to 24 who are high school graduates. The historic data are part of the Postsecondary Opportunity (PEO) Data Archive (Mortenson & Brunt, 2025). The 2023 values used to develop the quartiles are as follows:

- Lowest Quartile: \$0 - \$55,337
- Second Quartile: \$55,338 - \$98,670
- Third Quartile: \$98,671 - \$160,457⁷
- Top Quartile: Above \$160,457

This figure presents a 3-year moving average of the estimated bachelor’s degree attainment rate by age 24 for dependent family members, based on CPS data calibrated with NCES high school longitudinal study data. Note that the quartile groups are not equal for Figure 5.1 because the high school graduate quartile values were used in calculating the bachelor’s degree attainment rate (regardless of whether a high school diploma was attained).

Table A55 displays the estimates used in the figure, and Table A56 documents the calculations of standard errors. The standard errors from 1970 were calculated using the interpolation tables provided in the documentation (U.S. Census Bureau, 1976). The 2023 standard errors were calculated using the Generalized Variance Function and the design factors reported in the documentation (U.S. Census Bureau, 2023a). For the change statistics, a the standard error was pooled using the method described in the *Pooled Variance and Standard Error Calculations* section below.

⁷ The upper limit for the third quartile was estimated based on the observed distribution of grouped data.

Table A55: Estimates for Figure 5.1: Estimated bachelor’s degree attainment by age 24 for dependent family members in the U.S. population, by family income quartile: 1970-2023 (Indicator 5a(i))

	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile		Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile
1970	6.2	10.9	14.9	40.2	1997	5.9	15.8	24.3	47.6
1971	6.4	9.9	15.0	39.7	1998	7.2	15.3	24.8	42.9
1972	6.2	11.3	17.3	37.2	1999	6.8	14.9	25.9	39.9
1973	6.2	10.3	20.8	35.4	2000	5.6	13.7	25.5	36.2
1974	5.9	9.5	19.6	36.6	2001	5.1	13.7	26.5	36.1
1975	7.1	9.1	19.7	38.4	2002	6.3	13.2	27.6	44.9
1976	7.0	10.1	17.3	38.6	2003	8.9	15.6	28.9	50.9
1977	7.2	9.6	16.9	37.6	2004	8.8	15.9	28.7	54.0
1978	6.9	9.4	18.0	33.3	2005	9.3	19.7	32.0	46.2
1979	6.5	9.3	18.9	30.7	2006	8.3	19.1	31.2	46.1
1980	6.5	10.3	21.0	33.6	2007	7.7	19.5	36.0	47.7
1981	6.6	9.7	23.2	37.5	2008	7.4	18.0	37.3	48.8
1982	6.4	10.0	22.1	45.0	2009	7.6	17.1	37.5	50.9
1983	6.9	9.7	21.6	47.1	2010	8.5	16.9	33.4	46.8
1984	6.5	11.4	23.2	50.0	2011	7.8	17.6	34.0	46.9
1985	6.7	10.9	23.3	56.3	2012	7.5	18.7	34.2	49.1
1986	5.4	11.4	22.4	56.5	2013	8.8	19.2	35.6	53.4
1987	5.4	12.6	24.7	57.9	2014	10.9	19.4	35.0	57.3
1988	6.0	13.1	27.8	54.6	2015	11.5	19.7	38.6	58.9
1989	8.2	12.4	25.7	55.8	2016	12.7	20.4	44.2	60.2
1990	7.4	13.0	25.3	57.2	2017	13.1	19.7	45.3	63.2
1991	5.7	14.4	25.0	60.1	2018	14.9	21.1	42.0	60.8
1992	5.9	14.6	25.6	58.7	2019	14.1	22.2	40.1	60.5
1993	6.9	14.9	28.7	57.0	2020	15.9	25.6	40.3	60.2
1994	7.3	14.8	27.9	53.8	2021	15.5	26.0	44.2	55.2
1995	6.2	16.3	26.6	55.6	2022	15.3	25.2	46.9	61.9
1996	5.6	18.0	23.5	48.1	2023	13.9	25.1	49.7	58.2

NOTES: This figure presents a 3-year moving average of the estimated bachelor’s degree attainment rate by age 24 for dependent family members, based on CPS data calibrated with data from the NCES high school longitudinal studies. Due to estimation assumptions and sampling error, caution is warranted when interpreting changes (especially single-year fluctuations) over time.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Analysis by authors.

Table A56: Standard errors for Figure 5.1: Estimated bachelor’s degree attainment by age 24 for dependent family members in the U.S. population, by family income quartile: 1970-2023 (Indicator 5a(i))

	Base Count (y)	Design factor (1970) or Beta (2023)	Base Standard Error from Interpolation Table	Estimated Standard Error
1970				
Lowes Income Quartile	3,449,000	1.0	0.5	0.5
Second Income Quartile	2,536,000	1.0	0.8	0.8
Third Income Quartile	2,368,000	1.0	1.0	1.0
Highest Income Quartile	2,283,000	1.0	1.2	1.2
2023				
Lowes Income Quartile	5,317,709	4,616	N/A	1.1
Second Income Quartile	4,833,157	4,616	N/A	1.4
Third Income Quartile	4,698,543	4,616	N/A	1.7
Highest Income Quartile	4,603,878	4,616	N/A	1.6

NOTES: This figure presents a 3-year moving average of the estimated bachelor’s degree attainment rate by age 24 for dependent family members, based on CPS data with calibrations from the NCES high school longitudinal studies. Due to estimation assumptions and sampling error, caution is warranted when interpreting changes (especially large single-year fluctuations) over time. See Appendix A for further discussion of the methodology and limitations.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Design factors and base standard errors for 1970 were derived from the technical documentation provided by the U.S. Census Bureau (1976). Parameters for 2023 were documented in the 2023 October supplement technical documentation (U.S. Census Bureau, 2023b). Analysis by author.

Figure 5.2: Percentage of Bachelor's Degrees by Family Income Quartile

For Figure 5.2, the annual data are collected by the US Census Bureau and reported by the Bureau of Labor Statistics (BLS) yearly from the October supplement to the Current Population Survey (CPS), a national sample of about 60,000 households. Each October, a supplement to the CPS gathers information about school enrollment. Due to small sample sizes, estimates for disaggregated data have larger sampling errors than estimates for the total. Results are derived using the Microdata Access Tool (U.S. Census Bureau, 2025d). This data is a continuation of a table once published by the U.S. Census Bureau, but it has been discontinued. Quartiles are calculated using family income and are limited to dependent family members who are 18 to 24 years old and have bachelor's degrees. The historic data are part of the Postsecondary Opportunity (PEO) Data Archive (Mortenson & Brunt, 2025). The 2023 values used to develop the quartiles are as follows:

- Lowest Quartile: \$0 - \$55,337
- Second Quartile: \$55,338 - \$98,670
- Third Quartile: \$98,671 - \$160,457⁸
- Top Quartile: Above \$160,457

Note that the quartile groups are not equal for Figure 5.2 because the high school graduate quartile values were used in the college participation rate (regardless of whether a high school diploma was attained). Table A57 displays the estimates used in the figure, and Table A58 documents the calculations of standard errors. The standard errors from 1970 were calculated using the interpolation tables provided in the documentation (U.S. Census Bureau, 1976). The 2023 standard error was calculated using the Generalized Variance Function and the design factors reported in the documentation (U.S. Census Bureau, 2023a).

⁸ The upper limit for the third quartile was estimated based on the observed distribution of grouped data.

Table A57: Estimates for Figure 5.2: Percentage distribution of bachelor’s degrees attained by dependent family members 18 to 24 years old by family income quartile: 1970-2023 (Indicator 5a(ii))

	Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile		Lowest Income Quartile	Second Income Quartile	Third Income Quartile	Highest Income Quartile
1970	12.1	15.7	20.1	52.1	1997	8.5	18.2	25.5	47.8
1971	12.5	14.8	20.7	52.0	1998	10.8	18.1	26.6	44.5
1972	11.8	16.3	23.6	48.2	1999	10.1	17.8	28.8	43.4
1973	11.6	14.7	27.8	45.9	2000	9.2	17.8	30.4	42.5
1974	11.3	14.3	26.8	47.7	2001	8.3	18.3	31.9	41.5
1975	13.0	13.2	25.6	48.3	2002	8.7	15.2	30.0	46.1
1976	13.0	14.4	23.3	49.3	2003	10.6	15.5	27.4	46.5
1977	13.9	14.4	23.2	48.5	2004	10.6	15.7	26.3	47.4
1978	13.7	14.6	25.8	45.9	2005	11.1	19.2	29.2	40.5
1979	13.3	15.1	27.8	43.8	2006	10.2	18.9	29.4	41.6
1980	12.1	15.3	28.3	44.3	2007	8.7	18.7	32.0	40.6
1981	11.6	13.4	28.8	46.2	2008	8.3	16.8	33.0	41.9
1982	10.6	12.8	25.8	50.8	2009	8.5	16.0	32.8	42.7
1983	11.0	12.3	24.8	51.9	2010	9.6	16.8	31.6	41.9
1984	9.6	13.5	24.8	52.1	2011	8.9	17.4	31.5	42.1
1985	9.2	12.1	23.7	54.9	2012	8.3	18.0	30.9	42.8
1986	7.5	13.1	23.0	56.4	2013	8.8	17.0	30.2	44.0
1987	7.1	13.5	24.7	54.7	2014	10.3	16.4	28.4	44.9
1988	7.9	13.7	27.2	51.2	2015	10.3	15.9	29.4	44.4
1989	10.5	12.9	25.0	51.6	2016	10.7	15.1	31.8	42.5
1990	9.5	13.6	24.1	52.8	2017	10.7	14.1	31.8	43.3
1991	7.5	14.8	23.4	54.3	2018	11.7	15.5	30.2	42.5
1992	7.6	15.0	24.2	53.2	2019	11.3	16.8	29.3	42.5
1993	8.4	15.0	26.6	50.1	2020	12.3	18.4	28.3	41.0
1994	9.1	15.5	26.5	48.9	2021	12.4	18.9	30.7	38.0
1995	8.0	16.7	25.4	49.9	2022	11.5	17.5	31.3	39.7
1996	7.9	20.1	24.6	47.5	2023	10.6	17.4	33.5	38.4

NOTES: This figure reports a 100% distribution of bachelor’s degrees among dependent 18- to 24-year-olds, as reported in the CPS data. Details may not sum to totals due to rounding.

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Analysis by authors.

Table A58: Standard errors for Figure 5.2: Percentage distribution of bachelor’s degrees attained by dependent family members 18 to 24 years old by family income quartile: 1970-2023 (Indicator 5a(ii))

	Base Count (y)	Design factor (1970) or Beta (2023)	Base Standard Error from Interpolation Table	Estimated Standard Error
1970				
Lowes Income Quartile	3,449,000	1.0	0.8	0.8
Second Income Quartile	2,536,000	1.0	1.0	1.0
Third Income Quartile	2,368,000	1.0	1.1	1.1
Highest Income Quartile	2,283,000	1.0	1.3	1.3
2023				
Lowes Income Quartile	5,317,709	4,616	N/A	1.0
Second Income Quartile	4,833,157	4,616	N/A	1.3
Third Income Quartile	4,698,543	4,616	N/A	1.6
Highest Income Quartile	4,603,878	4,616	N/A	1.6

NOTES: Standard errors were calculated using the Generalized Variance Function and the design factors reported in the documentation (U.S. Census Bureau, 2023a).

SOURCE: Postsecondary Education Opportunity (PEO) data archive (Mortenson & Brunt, 2025), U.S. Census Bureau (U.S. Census Bureau, 2023a), 1970-2023 October Current Population Survey School Enrollment Supplement. Analysis by authors.

Figure 5.3: Number and Percentage of Bachelor's Degrees Conferred by Sex

The data for Indicator 5a(iii) were drawn from the Digest of Education Statistics (National Center for Education Statistics, 2023d) Table 318.10. At the time of publication, the data for the 2022-23 and 2023-24 academic years had not been updated in the Digest tables. Data from the most current year were pulled directly from the IPEDS data center (National Center for Education Statistics, 2025b). The numbers were derived from the IPEDS Completions survey, using final data for up to and including the 2022-23 cohort and provisional data for the 2023-24 cohorts.

The cohort was filtered using the following characteristics:

- Title IV institutions (see PSET4FLG), including those that are not primarily postsecondary
- Institutions within the United States (excluding the territories, but including Washington, DC; see OBEREG)
- Includes U.S. Service institutions (OBEREG)
- Excludes administrative units (see SECTOR).
- Is degree-granting (see DEGGRANT)

The variables used for this analysis included:

- Grand total of bachelor's degrees (CTOTALT), first major (MAJORNUM)
- Grand total of bachelor's degrees for men (CTOTALM), first major (MAJORNUM)
- Grand total of bachelor's degrees for women (CTOTALW), first major (MAJORNUM)

The estimates for Figure 5.3 are presented in Table A59. Statistical tests weren't required for this section because the data were from a census of colleges and universities.

Table A59: Estimates for Figure 5.3: Number and percentage of bachelor's degrees conferred by sex: 1870-2024 (Indicator 5a(iii))

Year	Counts			Percentages		
	Males	Females	Total	Male	Female	Total
1870	7,993	1,378	9,371	85.3	14.7	100.0
1880	10,411	2,485	12,896	80.7	19.3	100.0
1890	12,857	2,682	15,539	82.7	17.3	100.0
1910	28,762	8,437	37,199	77.3	22.7	100.0
1920	31,980	16,642	48,622	65.8	34.2	100.0
1930	73,615	48,869	122,484	60.1	39.9	100.0
1940	109,546	76,954	186,500	58.7	41.3	100.0
1950	328,841	103,217	432,058	76.1	23.9	100.0
1960	254,063	138,377	392,440	64.7	35.3	100.0
1970	451,097	341,219	792,316	56.9	43.1	100.0
1980	473,611	455,806	929,417	51.0	49.0	100.0
1981	469,883	465,257	935,140	50.2	49.8	100.0
1982	473,364	479,634	952,998	49.7	50.3	100.0
1983	479,140	490,370	969,510	49.4	50.6	100.0
1984	482,319	491,990	974,309	49.5	50.5	100.0
1985	482,528	496,949	979,477	49.3	50.7	100.0
1986	485,923	501,900	987,823	49.2	50.8	100.0
1987	480,782	510,482	991,264	48.5	51.5	100.0
1988	477,203	517,626	994,829	48.0	52.0	100.0
1989	483,346	535,409	1,018,755	47.4	52.6	100.0
1990	491,696	559,648	1,051,344	46.8	53.2	100.0
1991	504,045	590,493	1,094,538	46.1	53.9	100.0
1992	520,811	615,742	1,136,553	45.8	54.2	100.0
1993	532,881	632,297	1,165,178	45.7	54.3	100.0
1994	532,422	636,853	1,169,275	45.5	54.5	100.0
1995	526,131	634,003	1,160,134	45.4	54.6	100.0
1996	522,454	642,338	1,164,792	44.9	55.1	100.0
1997	520,515	652,364	1,172,879	44.4	55.6	100.0
1998	519,956	664,450	1,184,406	43.9	56.1	100.0
1999	519,961	682,278	1,202,239	43.2	56.8	100.0
2000	530,367	707,508	1,237,875	42.8	57.2	100.0
2001	531,840	712,331	1,244,171	42.7	57.3	100.0
2002	549,816	742,084	1,291,900	42.6	57.4	100.0
2003	573,258	775,553	1,348,811	42.5	57.5	100.0
2004	595,568	804,192	1,399,760	42.5	57.5	100.0
2005	613,183	826,665	1,439,848	42.6	57.4	100.0
2006	630,502	854,602	1,485,104	42.5	57.5	100.0
2007	649,816	874,913	1,524,729	42.6	57.4	100.0
2008	668,184	895,550	1,563,734	42.7	57.3	100.0
2009	685,422	915,977	1,601,399	42.8	57.2	100.0
2010	706,660	943,259	1,649,919	42.8	57.2	100.0
2011	734,159	981,894	1,716,053	42.8	57.2	100.0
2012	765,772	1,026,391	1,792,163	42.7	57.3	100.0
2013	787,408	1,052,973	1,840,381	42.8	57.2	100.0
2014	801,905	1,068,245	1,870,150	42.9	57.1	100.0

2015	812,693	1,082,276	1,894,969	42.9	57.1	100.0
2016	821,746	1,099,004	1,920,750	42.8	57.2	100.0
2017	836,021	1,120,093	1,956,114	42.7	57.3	100.0
2018	844,979	1,135,686	1,980,665	42.7	57.3	100.0
2019	857,607	1,155,479	2,013,086	42.6	57.4	100.0
2020	861,384	1,177,298	2,038,682	42.3	57.7	100.0
2021	860,797	1,205,666	2,066,463	41.7	58.3	100.0
2022	835,231	1,179,578	2,014,809	41.5	58.5	100.0
2023	817,097	1,148,720	1,965,817	41.6	58.4	100.0
2024	814,844	1,140,233	1,955,077	41.7	58.3	100.0

NOTES: The years represented in this table represent the end of the academic year (i.e., 2024 represents the degrees conferred in the 2023-24 academic year). The data represent degree-granting Title IV institutions in the 50 states and the District of Columbia. Data through 1994-95 are for institutions of higher education and U.S. service academies, while later data are for degree-granting institutions and U.S. service academies. Degree counts are limited to degree-granting institutions as classified in the fall of the year following the reported data year. Prior to 1960, degree counts included professional degrees such as M.D., D.D.S., and law degrees.

SOURCE: Digest of Education Statistics Table 318.10 (National Center for Education Statistics, 2023d). Data from the 2021-22, 2022-23, and 2023-24 academic years were updated using the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 5.4: Enrollment and Completion Rates for First-Time Beginning Students

Indicator 5c(v) draws data from the 2012-17 Beginning Postsecondary Students (BPS) Longitudinal Study (National Center for Education Statistics, 2017) using data from the 4-year (2015) and 6-year (2017) follow-ups for the BPS:2011-12/17. It disaggregates enrollment and degree completion status by family income for dependent students for the 6-year follow-up in 2017.

The income quartiles used in the analysis are based on parents' income at the start of the National Postsecondary Student Aid Study from which the BPS sample is drawn. Dependent BPS:2012 parent income levels by quartile were as follows:

- Lowest, less than \$30,000;
- Second, \$30,000-\$63,499;
- Third, \$63,500-\$106,999, and
- Highest, \$107,000 or more.

The analysis was conducted using NCES' DataLab website (National Center for Education Statistics, 2025a) and can be replicated using the QuickRetrieve code fmrsxb using the WTA000 weight and analysis variables PROUT6, DEPINC, filtering by DEPEND and FLEVEL. Table A60 displays the estimates and standard errors used in the figures. Table A61 displays the estimates and standard errors for the categories used in statistical testing.

Table A60: Estimates and standard errors for Figure 5.4: Percentage distribution of the degrees and certificates earned by first-time dependent beginning students enrolled at 4-year or 2-year institutions in 2011-12, by family income quartile: 2017 (Indicator 5c(v))

	Attained certificate	Attained an associate degree	Attained a bachelor's degree	No degree, still enrolled	No degree, not enrolled; No degree, left without return
Estimates					
First (Lowest) Income Quartile	8.5	12.0	26.8	14.3	38.4
Second Income Quartile	6.2	12.1	36.5	15.2	30.0
Third Income Quartile	4.5	11.4	49.8	10.4	23.9
Fourth (Highest) Income Quartile	2.1	6.1	69.1	8.4	14.3
Standard Errors					
First (Lowest) Income Quartile	0.93	0.74	1.11	0.86	1.51
Second Income Quartile	0.70	0.79	1.26	1.08	1.34
Third Income Quartile	0.74	0.86	1.62	0.75	1.31
Fourth (Highest) Income Quartile	0.36	0.56	1.35	0.66	1.18

NOTES: Income quartiles are based on parents' income at the start of the NPSAS study from which the BPS sample is drawn. Dependent BPS:2012 parent income levels by quartile were as follows: Lowest, less than \$30,000; Second, \$30,000-\$63,499; Third, \$63,500-\$106,999, and Highest, \$107,000 or more. The analysis was conducted using NCES' DataLab website (National Center for Education Statistics, 2025a) and can be replicated using the QuickRetrieve code fmrsxb using the WTA000 weight and analysis variables PROUT6, DEPINC, filtering by DEPEND and FLEVEL.

SOURCE: 2012/17 Beginning Postsecondary Students Longitudinal Study (National Center for Education Statistics, 2017). Analysis by authors.

Table A61: Estimates and standard errors for the statistical tests used in Figure 5.4: Percentage distribution of the degrees and certificates earned by first-time dependent beginning students enrolled at 4-year or 2-year institutions in 2011-12, by family income quartile: 2017 (Indicator 5c(v))

	Attained a credential	No degree, still enrolled	No degree, not enrolled; No degree, left without return
Estimates			
First (Lowest) Income Quartile	47.3	14.3	38.4
Second Income Quartile	54.8	15.2	30.0
Third Income Quartile	65.7	10.4	23.9
Fourth (Highest) Income Quartile	77.3	8.4	14.3
Standard Errors			
First (Lowest) Income Quartile	1.44	0.86	1.51
Second Income Quartile	1.48	1.08	1.34
Third Income Quartile	1.29	0.75	1.31
Fourth (Highest) Income Quartile	1.29	0.66	1.18

NOTES: Income quartiles are based on parents' income at the start of the NPSAS study from which the BPS sample is drawn. Dependent BPS:2012 parent income levels by quartile were as follows: Lowest, less than \$30,000; Second, \$30,000-\$63,499; Third, \$63,500-\$106,999, and Highest, \$107,000 or more. The analysis was conducted using NCES' DataLab website (National Center for Education Statistics, 2025a) and can be replicated using the QuickRetrieve code qptdwn using the WTA000 weight and analysis variables PROUT6, DEPINC, filtering by DEPEND and FLEVEL.

SOURCE: 2012/17 Beginning Postsecondary Students Longitudinal Study (National Center for Education Statistics, 2017). Analysis by authors.

Figure 5.5: Graduation Rates for First-Time Full-Time Students

The estimates from this Figure 5.5 (Indicator 5c(vi)) were derived from the Integrated Postsecondary Education Data System Header (Institutional Characteristics), and Outcomes Measures (OM) components. The cohort was filtered using the following characteristics:

- Title IV institutions (see PSET4FLG), including those that are not primarily postsecondary
- Institutions within the United States (excluding the territories, but including Washington, DC; see OBEREG)
- Excludes U.S. Service institutions (OBEREG)
- Excludes administrative units (see SECTOR).
- Is degree-granting (see DEGGRANT)

The variables used for this analysis included:

- Adjusted 2016-17 cohort (OMACHRT) – 11 first-time, full-time entering, Pell Grant recipients and 12 for First-time, full-time entering, non-Pell Grant recipients
- Number of adjusted cohort receiving a certificate at 4 years (OMCERT4)
- Number of adjusted cohort receiving an associate’s degree at 4 years (OMASSC4)
- Number of adjusted cohort receiving a bachelor’s degree at 4 years (OMBACH4)
- Number of adjusted cohort receiving a certificate at 6 years (OMCERT6)
- Number of adjusted cohort receiving an associate’s degree at 6 years (OMASSC6)
- Number of adjusted cohort receiving a bachelor’s degree at 6 years (OMBACH6)

The estimates for the figure are presented in Table A62. Statistical tests weren’t required for this section because the data were from a census of colleges and universities. Table presents the raw estimates for the calculations in Table A63.

Table A62: Percentage estimates for Figure 5.5: Percentage distribution of certificates and degrees awarded for first-time, full-time students in four and six years, by Pell-Grant status in the student's first year: 2017-2024 (Indicator 5c(vi))

	2017	2018	2019	2020	2021	2022	2023	2024
Pell 4-year								
No Degree	71.4	72.1	72.3	70.5	69.3	68.1	66.0	64.7
Certificates	8.6	6.8	5.9	6.2	5.8	5.7	5.9	6.0
Associates	10.9	10.4	10.4	11.1	11.4	11.7	12.3	12.5
Bachelor's	9.1	10.7	11.4	12.3	13.5	14.5	15.7	16.8
Non-Pell 4-year								
No Degree	60.4	58.8	56.6	55.1	53.3	52.0	51.4	50.1
Certificates	3.6	3.0	2.7	2.8	2.8	2.9	2.9	2.9
Associates	9.2	8.6	8.5	8.8	9.1	9.2	9.5	9.6
Bachelor's	26.7	29.6	32.2	33.3	34.8	35.8	36.2	37.4
Pell 6-year								
No Degree	62.9	62.5	62.5	60.4	59.0	57.7	55.7	55.0
Certificates	8.7	7.0	6.0	6.2	5.8	5.7	6.0	6.1
Associates	12.3	12.1	12.0	12.7	13.0	13.3	13.8	13.8
Bachelor's	16.1	18.4	19.5	20.7	22.1	23.2	24.6	25.1
Non-Pell 6-year								
No Degree	47.5	45.3	42.8	41.5	40.0	39.2	39.1	38.6
Certificates	3.7	3.0	2.7	2.9	2.8	3.0	2.9	2.9
Associates	10.5	9.9	9.6	9.9	10.1	10.3	10.5	10.5
Bachelor's	38.3	41.8	44.9	45.8	47.1	47.6	47.5	48.0

NOTES: The years noted in the figure represent the end of the academic year for which the student graduated (i.e., 2024 represents the 2023-24 academic year). The cohorts of these students were formed four or eight years prior to the reporting date. For example, 2024 rates represent the cohort from 2016-17, and 2017 rates represent students in the cohort from the 2009-10 academic year. Data from 2017 to 2023 are final, while 2024 data are preliminary.

SOURCE: Integrated Postsecondary Education Data System, Outcomes Measures Survey 2017 through 2024 reporting years (National Center for Education Statistics, 2025b). Analysis by authors.

Table A63: Count estimates (in thousands) for Figure 5.5: Percentage distribution of certificates and degrees awarded for first-time, full-time students in four and six years, by Pell-Grant status in the student's first year: 2017-2024 (Indicator 5c(vi))

	2017	2018	2019	2020	2021	2022	2023	2024
Pell 4-year								
Total Adjusted Cohort	1,470	1,464	1,400	1,319	1,266	1,226	1,156	1,124
No Degree	1,050	1,055	1,013	930	878	834	763	727
Certificates	126	100	82	81	73	70	68	68
Associates	160	152	146	146	145	144	142	140
Bachelor's	134	156	159	162	171	178	182	189
Non-Pell 4-year								
Total Adjusted Cohort	1,720	1,541	1,467	1,481	1,480	1,494	1,536	1,544
No Degree	1,040	905	830	816	790	777	790	773
Certificates	62	46	39	42	41	44	44	45
Associates	159	133	125	130	134	138	146	148
Bachelor's	459	457	473	493	515	535	556	578
Pell 6-year								
Total Adjusted Cohort	1,470	1,464	1,400	1,319	1,266	1,226	1,156	1,124
No Degree	925	915	875	797	748	708	644	618
Certificates	128	102	84	82	74	70	69	68
Associates	180	177	168	167	165	163	159	155
Bachelor's	237	270	273	273	280	285	284	283
Non-Pell 6-year								
Total Adjusted Cohort	1,720	1,541	1,467	1,481	1,480	1,494	1,536	1,544
No Degree	817	698	628	614	592	585	601	596
Certificates	63	47	40	43	42	44	44	45
Associates	181	152	142	147	150	154	161	162
Bachelor's	659	644	658	678	697	711	730	742

NOTES: The years noted in the figure represent the end of the academic year for which the student graduated (i.e., 2024 represents the 2023-24 academic year). The cohorts of these students were formed four or eight years prior to the reporting date. For example, 2024 rates represent the cohort from 2016-17, and 2017 rates represent students in the cohort from the 2009-10 academic year. Data from 2017 to 2023 are final, while 2024 data are preliminary.

SOURCE: Integrated Postsecondary Education Data System, Completions Survey 2017 through 2024 reporting years (National Center for Education Statistics, 2025b). Analysis by authors.

Figure 5.6: Race/Ethnic Makeup of Degree Recipients versus the U.S. Population

The data for Figure 5.6 (Indicator 5d(i)) comes from the Digest of Education Statistics tables 101.20 (National Center for Education Statistics, 2023b), 321.30 (National Center for Education Statistics, 2023e), and 322.30 (National Center for Education Statistics, 2023f). The Digest draws the data from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) and the Population and Housing Unit Estimates program (U. S. Census Bureau, 2022).

Statistical tests weren't required for this section because the data were from a census of colleges and universities. The second data source, the population estimates at the U.S. Census Bureau, is not derived from sample surveys. Instead, Census uses a series of estimation techniques that draw on previous Census data and actual population counts (U. S. Census Bureau, 2025). As such, there are no sampling errors to adjust for. While measurement error may be present, it is not appropriate for statistical testing. Table A64 presents the estimates used for Figure 5.6.

Table A64: Estimates for Figure 5.6: Distributions of associate’s and bachelor’s degrees conferred to U.S. citizens and distribution of the civilian population by race/ethnicity: 1980 and 2022 (Indicator 5d(i))

	Civilian Population	18-24 Year-Old Population	Associate's Degrees Conferred	Bachelor's Degrees Conferred
1980				
White	79.7	77.3	84.2	88.5
Black	11.5	12.9	8.8	6.7
Hispanic	6.5	7.6	4.4	2.4
Asian/Pacific Islander	1.6	1.6	2.1	2.1
American Indian/Alaska Native	0.6	0.7	0.6	0.4
2022				
White	58.9	52.2	49.3	58.8
Black	12.6	13.8	12.3	10.4
Hispanic	19.1	23.8	26.7	17.0
Asian/Pacific Islander	6.3	5.9	6.8	8.9
American Indian/Alaska Native	0.7	0.8	0.8	0.5
Two or More Races	2.4	3.5	4.0	4.3

NOTES: The categories (White, Black, Asian/Pacific Islanders, American Indian/Alaska Native, and “Two or More Races”) exclude Hispanics. Race/ethnicity categories reflect the titles used at the time of reporting. Caution is warranted in interpreting this Indicator as categories for race and ethnicity classifications have changed over time. The category “Two or More Races” was not included in 1980. In 2022, in the population figures by the Census Bureau, Native Hawaiian and Other Pacific Islanders were classified separately from Asians and were 0.2 percent of the U.S. population. The inclusion of the “Two or More Races” category likely reduced the percentage of persons who classified themselves as Black, American Indian/Alaska Native, or Asian.

SOURCE: Digest of Education Statistics (National Center for Education Statistics, 2023b, 2023e, 2023f) and Population and Housing Unit Estimates (U. S. Census Bureau, 2022).

Figure 5.7: Graduates who are First-Generation College Students

That data used to populate Figure 5.7 comes from the First Look publication from the 2016/17 Baccalaureate and Beyond Longitudinal Study (Velez et al., 2019). Table A65 provides the estimates and standard estimates used to build Figure 5.7.

Table A65: Estimates and standard errors for Figure 5.7: Percentage distribution of first-time bachelor’s degree recipients by highest education attained by either parent: B&B:16/17 (Indicator 5e(i))

	First-time bachelor’s degree recipients in 2015-16	Standard Error
Highest education attained by either parent		
High school diploma or less	16.7	0.40
Some postsecondary education	25.2	0.48
Bachelor’s degree	28.8	0.41
Graduate or professional degree	29.3	0.47

NOTES: A first-generation college student is defined as an undergraduate whose parents do not hold a bachelor’s degree or higher. High school diploma or less includes the 0.2 percent of graduates who did not know either parent’s highest level of education. “Some postsecondary education” means that at least one parent attended a postsecondary institution and may have earned a credential up to an associate’s degree. However, neither parent earned a bachelor’s or advanced degree.

SOURCE: Baccalaureate and Beyond (B&B:16/17) First Look (Velez et al., 2019)

Figure 5.8: Bachelor's Degree Graduates' Income Four Years After Graduation

The estimates from Indicator 5f(iii) in Figure 5.8 were calculated using the National Center for Education Statistics, 2016/20 Baccalaureate and Beyond Longitudinal Study (National Center for Education Statistics, 2020a) and use the following income quartile thresholds of dependent student family income in the base year of the study:

- Lowest Quartile: \$0 - \$31,221
- Second Quartile: \$31,222 - \$68,750
- Third Quartile: \$68,751 - \$111,341
- Top Quartile: Above \$111,342

NCES' online data tool DataLab PowerStats (National Center for Education Statistics, 2025a) generated the estimates. The variables used for the table include:

- Income from all sources 4 years after graduation (averages without zeros; B2ALLINC4YRS)
- Dependent family income to develop quartiles (DEPINC),
- Dependency status as w filter (DEPEND),
- First bachelor's degree as a filter (DEGPRBA),
- Employment status (yes) as a filter (B2LFP4YR), and
- Full-time employee (35 or more hours) as a filter (B2ALLHRS4YRS).

The average annualized income reported in Indicator 5f(iii) excludes those who had another bachelor's degree prior to 2016, and those who were enrolled in any educational program in 2020. The quick-retrieve code used to generate the estimates in DataLab is hvqlyq.

The high school estimates come from the Digest of Education Statistics, Table 502.30, and are for full-time year-round workers aged 25 to 34 who have only received a bachelor's degree. The estimates and standard errors for Figure 5.8 are displayed in Table A66. All numbers were inflation-adjusted to 2024 dollars using the Consumer Price Index calendar-year averages.

Table A66: Estimates and standard errors for Figure 5.8: Average annualized income for dependent students who received bachelor’s degrees in 2016 who were not enrolled in education and who were employed full-time at the 4-year follow-up in 2020 by parents’ income quartile, compared with full-time year-round high school graduate workers 25 to 34 years old (in 2024 constant dollars) (Indicator 5f(iii))

	Annualized income from all jobs	Standard Error
High School Graduates ¹	44,794	272
All	72,396	833
First (Lowest) Income Quartile	66,882	1,684
Second Income Quartile	70,299	1,539
Third Income Quartile	74,801	1,888
Fourth (Highest) Income Quartile	81,184	950

NOTES: Mean annualized incomes are for dependent first-time bachelor’s degree recipients who were not enrolled in any educational program at the time of the 2020 follow-up and who were employed full-time.

SOURCE: 2016/20 Baccalaureate and Beyond Longitudinal Study (National Center for Education Statistics, 2020a). Analysis by authors. High school income data comes from the Digest of Education Statistics (National Center for Education Statistics, 2023k)

6. Indicator 6: (How do educational attainment rates in the U.S. compare with rates in other countries?) Technical Notes

Indicator 6 uses data from the Organisation for Economic Co-operation and Development (OECD) to compare educational attainment in the United States with other countries. The OECD strives to apply common definitions across countries and consistently collect and report data to develop evidence-based international standards. However, differences across countries in educational systems and degree classifications and reporting issues from year-to-year limit international comparisons (OECD, 2025a)

Definitions for Indicator 6

Indicator 6 relies on the common terms and definitions developed by the OECD to track educational attainment. Indicator 6a reports tertiary-type A degree attainment, and Indicator 6b combines attainment of tertiary-type A degrees (the equivalent of a bachelor's degree or above) with tertiary-type B degrees (the equivalent of an associate's degree). For both Indicators, we present attainment for the population age 25 to 34 in the years 2015 and 2024 with references to 2003. Indicator 6c, which examines completion by first-generation status, examines type-A and type-B tertiary degrees as one group and separates the degrees below the tertiary level into two groups due to limitations of the data source. The two lower groups are both first-generation students for these purposes.

Definitions of terms not already provided in the report are presented below and come from the OECD (2008) glossary :

Tertiary-type A programs are largely theory-based and are designed to provide sufficient qualifications for entry to advanced research programs and professions with high skill requirements. Tertiary-type A programs have a minimum cumulative theoretical duration of 3 years of full-time equivalent study at the tertiary level, although they typically last 4 or more years. These programs are not exclusively offered at universities. This classification is comparable to the bachelor's degree (BA or BS) or above in the U.S. system. Starting in May 2014, the OECD began using a more detailed classification of educational levels to align with the International Standard Classification of Education (ISCED 2011) (OECD, 2023). These are the ISCED 2011 levels: level 5 (short-cycle tertiary education), level 6 (bachelor's or equivalent level), level 7 (master's or equivalent level), and level 8 (doctoral or equivalent level). In this report, we combine levels 6 through 8 and refer to this category as tertiary-type A (the equivalent of a bachelor's degree or higher).

Tertiary-type B programs are typically shorter than tertiary-type A degrees and focus on practical, technical, or occupational skills for direct entry into the labor market, although some theoretical foundations may be covered. These programs have a minimum duration of 2 years full-time equivalent study at the tertiary level. We present data on ISCED 2011 level 5 (short-cycle tertiary education) as equivalent to tertiary-type B programs (the equivalent of an associate's degree or higher). We use the terms tertiary-type B programs, short-cycle tertiary education, and associate's degree interchangeably.

Upper secondary education refers to the final stage of secondary education, though there can be substantial differences across OECD countries. These programs can be either terminal or preparatory for tertiary education. Instruction is often focused on specific subject matters compared with levels below upper secondary. Teachers typically need to have higher credentials, training, or more subject-specific qualifications than at lower ages. The entrance age to this level is typically 15 or 16. In the United States, this is equivalent to high school.

Statistical Testing Results

Statistical tests were conducted for all estimates in this chapter that were derived from a sample surveys. Estimates and standard errors are only as good as the country that produces them. Some have sophisticated statistical systems, and others do not. There are times when standard errors are not provided. As much information was used as was available to determine differences, but there were cases where exact differences could not be determined. For estimates and standard errors that were available, Table A67 documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant.

Table A67: Statistical test results verifying the differences mentioned for Indicator 6

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 Ireland attainment rate versus 2024 Luxembourg attainment rate	t-test	2.66	0.0079	0.017	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 Ireland attainment rate versus 2024 Lithuania attainment rate	t-test	5.09	0.0000	0.017	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 Ireland attainment rate versus 2024 Netherlands attainment rate	t-test	14.07	0.0000	0.017	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2015 United States attainment rate versus 2024 United States attainment rate	t-test	-11.42	0.0000	0.050	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 United States attainment rate versus 2024 New Zealand attainment rate	t-test	3.70	0.0061	0.013	NS

How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 United States attainment rate versus 2024 Sweden attainment rate	t-test	-3.49	0.0005	0.013	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 United States attainment rate versus 2024 Canada attainment rate	t-test	†	†	0.013	†
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2024 United States attainment rate versus 2024 Norway attainment rate	t-test	-5.56	0.0000	0.013	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2015 United States attainment rate versus 2015 New Zealand attainment rate	t-test	†	†	0.013	†
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2015 United States attainment rate versus 2015 Sweden attainment rate	t-test	0.70	0.4857	0.013	NS
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2015 United States attainment rate versus 2015 Canada attainment rate	t-test	†	†	0.013	†
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6a	6.1	2015 United States attainment rate versus 2015 Norway attainment rate	t-test	3.27	0.0011	0.013	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Belgium attainment rate versus Greater than 50%	t-test	1.61	0.1071	0.003	NS
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Switzerland attainment rate versus Greater than 50%	t-test	2.62	0.0089	0.003	NS
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Denmark attainment rate versus Greater than 50%	t-test	2.36	0.0185	0.003	NS
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 United States attainment rate versus Greater than 50%	t-test	4.92	0.0000	0.003	*

How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Spain attainment rate versus Greater than 50%	t-test	11.66	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 France attainment rate versus Greater than 50%	t-test	13.07	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Netherlands attainment rate versus Greater than 50%	t-test	23.94	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Sweden attainment rate versus Greater than 50%	t-test	13.40	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Australia attainment rate versus Greater than 50%	t-test	†	†	0.003	†
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Lithuania attainment rate versus Greater than 50%	t-test	10.22	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Norway attainment rate versus Greater than 50%	t-test	18.52	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 United Kingdom attainment rate versus Greater than 50%	t-test	16.03	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Luxembourg attainment rate versus Greater than 50%	t-test	10.34	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Ireland attainment rate versus Greater than 50%	t-test	33.06	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Canada attainment rate versus Greater than 50%	t-test	†	†	0.003	†

How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6b	6.2	2024 Korea attainment rate versus Greater than 50%	t-test	†	†	0.003	†	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 OECD average first-generation below upper secondary versus 2023 OECD average non-first generation	t-test	†	†	0.05	†	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 OECD average first-generation upper secondary and postsecondary non-tertiary versus 2023 OECD average non-first generation		0	†	†	0.05	†
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Czechia first-generation upper secondary and postsecondary non-tertiary versus 2023 Italy first-generation upper secondary and postsecondary non-tertiary	t-test	-8.55	0.0000	0.05	*	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Slovak Republic first-generation upper secondary and postsecondary non-tertiary versus Below 44%	t-test	-6.47	0.0000	0.003	*	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Germany first-generation upper secondary and postsecondary non-tertiary versus Below 44%	t-test	-5.45	0.0000	0.003	*	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Poland first-generation upper secondary and postsecondary non-tertiary versus Below 44%	t-test	-6.14	0.0000	0.003	*	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Hungary first-generation upper secondary and postsecondary non-tertiary versus Below 44%	t-test	-4.38	0.0000	0.003	*	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Slovak Republic first-generation below upper secondary versus Below 26%	t-test	-12.17	0.0000	0.003	*	
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Germany first-generation below upper secondary versus Below 26%	t-test	-1.24	0.2171	0.003	NS	

How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Poland first-generation below upper secondary versus Below 26%	t-test	-3.05	0.0024	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Hungary first-generation below upper secondary versus Below 26%	t-test	-7.63	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Korea first-generation upper secondary and postsecondary non-tertiary versus Above 44%	t-test	17.79	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Ireland first-generation upper secondary and postsecondary non-tertiary versus Above 44%	t-test	4.00	0.0001	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Spain first-generation upper secondary and postsecondary non-tertiary versus Above 44%	t-test	3.03	0.0025	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 France first-generation upper secondary and postsecondary non-tertiary versus Above 44%	t-test	4.18	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Korea first-generation upper secondary and postsecondary non-tertiary versus 2023 United States first-generation upper secondary and postsecondary non-tertiary	t-test	10.73	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Ireland first-generation upper secondary and postsecondary non-tertiary versus 2023 United States first-generation upper secondary and postsecondary non-tertiary	t-test	4.61	0.0000	0.003	*
How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 Spain first-generation upper secondary and postsecondary non-tertiary versus 2023 United States first-generation upper secondary and postsecondary non-tertiary	t-test	3.90	0.0001	0.003	*

How do educational attainment rates in the U.S. compare with rates in other countries? - Indicator 6c	6.3	2023 France first-generation upper secondary and postsecondary non-tertiary versus 2023 United States first-generation upper secondary and postsecondary non-tertiary	t-test	4.48	0.0000	0.003	*
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* Statistically significant test at the threshold provided.

† Standard error is missing, and a statistical test could not be computed.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020), in order to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Figure 6.1: Percentage of 25 to 34-Year-Olds with a Bachelor's Degree or Higher, by Country

Data used for (Indicator 6a) come from the annual Education at a Glance publications put out by (OECD, 2016, 2023, 2024, 2025b) using the OECD data explorer (OECD, 2025c). OECD definitions of “tertiary type A” degrees were translated to as close to a U.S. bachelor’s degree as possible. Some countries aggregated degree counts differently, so each country’s percentages were summed to an equivalent bachelor’s degree attainment.

Previous versions of this indicator compared trends from over 20 years prior to the current year. However, in 2003 and 2004 few countries reported standard errors. As such, the new indicator uses a 10-year comparison with more complete data on standard errors (OECD, 2025a). Data missing in 2024 were imputed using data from 2023. While every attempt was made to run statistical tests for each comparison in this section, some countries were still missing standard errors. See Table A68 for a list of estimates and standard errors used to create Figure 6.1 and Table A69 for the 2003 estimates that were cited in the text.

Table A68: Estimates and standard errors using in Figure 6.1: Percentage of adults aged 25 to 34 with a type A (equivalent of bachelor's degree or above) tertiary degree: 2015 and 2024 (Indicator 6a)

Rank	Country	2024 Attainment	2024 Standard Error	2015 Attainment	2015 Standard Error	2015 Rank
1	Ireland	64.5	0.67	40.0	0.37	10
2	Luxembourg	59.2	1.89	44.3	0.97	5
3	Lithuania	58.3	1.02	54.8	0.88	1
4	Netherlands	54.1	0.30	45.0	0.29	4
5	United Kingdom	53.7	0.82	42.4	0.55	8
6	Switzerland	51.0	0.49	46.5	0.50	2
7	Korea	50.9	‡	46.5	‡	3
8	Belgium	50.0	0.52	42.7	0.53	7
9	Australia	48.9	‡	38.6	0.65	15
10	Japan †	47.5	‡	39.2	‡	13
11	Norway	46.3	0.59	34.2	0.48	23
12	Denmark	46.1	0.62	39.5	0.55	11
13	Poland	45.6	0.45	43.1	‡	6
14	Canada	45.5	‡	34.7	‡	20
15	Sweden	44.7	0.53	35.8	0.28	18
16	Greece	44.5	0.55	38.8	0.34	14
17	New Zealand	43.4	0.38	35.9	‡	17
18	Estonia	43.2	1.38	39.4	1.02	12
	OECD Average	42.8				
19	United States †	42.3	0.42	36.1	0.33	16
20	Portugal	42.1	0.47	33.2	0.43	25
21	France	41.3	0.29	28.6	0.22	30
22	Germany	39.2	0.17	29.2	0.18	29
23	Finland	39.0	0.50	40.2	0.78	9
24	Iceland †	38.6	1.43	34.7	1.17	21
25	Spain	37.5	0.28	28.2	0.19	31
26	Israel	37.4	0.21	34.5	‡	22
27	Latvia	37.0	0.97	34.9	0.83	19
28	Slovak Republic	36.9	1.23	30.9	0.94	26
29	Colombia †	34.9	0.13	27.8	0.13	32
30	Slovenia †	34.7	0.76	33.9	0.61	24
31	Czechia	33.3	0.42	30.8	0.34	27
32	Italy	31.3	0.27	25.1	0.21	33
33	Türkiye	30.5	‡	19.7	‡	36
34	Hungary	29.8	0.38	29.2	0.31	28
35	Austria	29.3	0.36	22.3	0.32	34
36	Mexico	28.5	0.19	20.2	0.17	35
37	Costa Rica	22.5	0.77	18.5	0.62	37

† 2024 data unavailable. The 2023 data were used to impute estimates.

‡ Estimate not available.

NOTES: For these countries, data were imputed using 2023 data. Caution is needed when making international comparisons, given differences in educational degree classifications across countries and

reporting differences over time. Please refer to the Education at a Glance Database, <http://stats.oecd.org> for more details.

SOURCE: *Education at a Glance*, Adults' educational attainment distribution, by age group and gender (Table A1.3) (OECD, 2016, 2023, 2024, 2025a, 2025b). Estimates generated using the OECD Data Explorer (OECD, 2025c).

Table A69: Percentage of adults aged 25 to 34 with a type A (equivalent of bachelor's degree or above) tertiary degree: 2003

Rank	Country	2003 Attainment
1	Norway	37.4
2	United States	30.0
3	Korea	29.9
4	Canada	27.5
5	Estonia	27.4
6	Denmark	27.2
7	Israel	27.2
8	Japan	26.4
9	Iceland	25.9
10	Spain	25.8
11	Austria	24.9
12	United Kingdom	24.2
13	Sweden	23.8
14	Finland	23.1
15	France	21.9
16	New Zealand	20.7
17	Poland	20.4
	OECD Average	20.4
18	Switzerland	19.6
19	Latvia	18.5
20	Belgium	18.2
21	Hungary	16.6
22	Greece	16.5
23	Mexico	16.0
24	Costa Rica	14.1
25	Germany	14.0
26	Portugal	13.2
27	Slovak Republic	12.6
28	Czechia	11.7
29	Türkiye	11.4
30	Australia	8.4
31	Luxembourg	6.6

NOTES: Caution is needed when making international comparisons, given differences in educational degree classifications across countries and reporting differences over time. Please refer to the Education at a Glance Database, <http://stats.oecd.org> for more details.

SOURCE: *Education at a Glance*, Adults' educational attainment distribution, by age group and gender (Table A1.3) (OECD, 2016, 2023, 2024, 2025a, 2025b). Estimates generated using the OECD Data Explorer (OECD, 2025c).

Figure 6.2: Percentage of 25 to 34-Year-Olds with a Postsecondary (Tertiary) Degree

Data used for Figure 6.2 (Indicator 6b) comes from the annual Education at a Glance publications put out by (OECD, 2016, 2023, 2024, 2025b) using the OECD data explorer (OECD, 2025c). OECD definitions of “tertiary type A” or “tertiary type B” degrees were translated for this figure, focusing on postsecondary credentials, including associate degrees. Some countries aggregated degree counts differently, so each country’s percentages were excluded if other degree types were included.

Previous versions of this indicator compared trends from over 20 years prior to the current year. However, in 2003 and 2004 few countries reported standard errors. As such, the new indicator uses a 10-year comparison with more complete data on standard errors (OECD, 2025a). Data missing in 2024 were imputed using data from 2023. While every attempt was made to run statistical tests for each comparison in this section, some countries were still missing standard errors. See Table A70 for a list of estimates and standard errors used to create Figure 6.2 and Table A71 for the 2003 estimates that were cited in the text.

Table A70: Estimates and standard errors for Figure 6.2: Percentage of adults age 25 to 34 with a type A (bachelor's or above) or type B (short-cycle or associate's) tertiary degree: 2015 and 2024 (Indicator 6b)

Rank	Country	2024	2024 Standard Error	2015	2015 Standard Error	2015 Rank
1	Korea	70.6	‡	68.9	‡	1
2	Canada	68.9	‡	59.4	‡	3
3	Ireland	66.2	0.49	52.0	0.34	5
4	Luxembourg	64.8	1.43	49.9	0.82	6
5	United Kingdom	60.3	0.64	49.9	0.48	7
6	Norway	59.0	0.49	48.1	0.45	9
7	Lithuania	58.3	0.81	54.8	0.71	4
8	Australia	57.2	‡	48.5	0.60	8
9	Sweden	56.0	0.45	46.4	0.26	12
10	Netherlands	55.6	0.24	46.3	0.25	13
11	France	53.4	0.26	44.7	0.22	15
12	Spain	53.0	0.25	41.0	0.19	19
13	United States †	51.8	0.37	46.5	0.31	10
14	Denmark	51.2	0.52	43.0	0.48	18
15	Switzerland	51.0	0.40	46.5	0.41	11
16	Belgium	50.7	0.42	43.1	0.45	17
	OECD Average	48.2				
17	Japan	48.1	‡	59.6	‡	2
18	New Zealand	47.9	0.35	39.1	‡	25
19	Israel	46.6	0.20	45.9	‡	14
20	Poland	45.7	0.39	43.2	‡	16
21	Latvia	45.4	0.89	39.9	0.76	24
22	Greece	44.5	0.48	40.1	0.32	23
23	Austria	44.4	0.35	38.6	0.35	26
24	Türkiye	44.1	‡	27.5	‡	35
25	Iceland †	43.5	1.28	37.7	1.07	27
26	Estonia	43.2	1.17	40.5	0.89	22
27	Portugal	43.2	0.41	33.2	0.39	28
28	Slovenia	43.1	0.74	40.8	0.57	20
29	Germany	39.6	0.15	29.6	0.16	32
30	Finland	39.0	0.43	40.5	0.68	21
31	Slovak Republic	37.2	1.13	31.3	0.88	30
32	Colombia	36.6	0.14	27.8	0.13	34
33	Costa Rica	35.1	0.87	28.3	0.70	33
34	Czechia	33.5	0.37	31.0	0.31	31
35	Hungary	32.3	0.36	32.1	0.29	29
36	Italy	31.6	0.24	25.1	0.19	36
37	Mexico	29.1	0.19	20.8	0.17	37

† 2024 data unavailable. The 2023 data were used to impute estimates.

‡ Estimate not available.

NOTES: For these countries, data were imputed using 2023 data. Caution is needed when making international comparisons, given differences in educational degree classifications across countries and reporting differences over time. Please refer to the Education at a Glance Database, <http://stats.oecd.org> for more details.

SOURCE: *Education at a Glance*, Adults' educational attainment distribution, by age group and gender (Table A1.3) (OECD, 2016, 2023, 2024, 2025a, 2025b). Estimates generated using the OECD Data Explorer (OECD, 2025c).

Table A71: Percentage of adults aged 25 to 34 with a type A (equivalent of bachelor's degree or above) or type B (short-cycle or associate's) tertiary degree: 2003

Rank	Country	2003 Attainment
1	Canada	53.2
2	Japan	51.6
3	Korea	46.5
4	Israel	42.0
5	Sweden	40.4
6	Norway	39.8
7	Belgium	38.9
8	United States	38.7
9	Finland	37.9
10	Spain	37.9
11	France	37.9
12	Ireland	37.1
13	Australia	36.3
14	Denmark	35.0
15	United Kingdom	33.3
16	New Zealand	32.4
17	Netherlands	32.1
18	Iceland	30.2
19	OECD	29.6
20	Switzerland	29.2
21	Estonia	27.4
22	Greece	23.7
23	Slovenia	23.7
24	Germany	21.8
25	Poland	20.4
26	Mexico	18.9
27	Luxembourg	18.7
28	Latvia	18.5
29	Portugal	16.9
30	Hungary	16.8
31	Austria	15.4
32	Slovak Republic	13.2
33	Italy	12.7
34	Czechia	12.1
35	Türkiye	11.4

NOTES: Caution is needed when making international comparisons, given differences in educational degree classifications across countries and reporting differences over time. Please refer to

the Education at a Glance Database,
<http://stats.oecd.org> for more details.

SOURCE: *Education at a Glance*, Adults' educational attainment distribution, by age group and gender (Table A1.3) (OECD, 2016, 2023, 2024, 2025a, 2025b). Estimates generated using the OECD Data Explorer (OECD, 2025c).

Figure 6.3: Percentage of First-Generation Students by Country

Indicated 6c is new for this version of the *Indicators* publication. Data used for Figure 6.3 come from the annual Education at a Glance (OECD, 2024) web-only table A1.4. The table is designed to examine intergenerational mobility in educational attainment. Due to the design of the table, the research team was unable to create a definition of “first-generation” that is consistent with the one used in the rest of this report (parents’ educational attainment below the bachelor’s degree). This is because the table does not separate out “tertiary type A” or “tertiary type B” degrees. As such, non-first-generation students include some credentials that are postsecondary degrees but below the bachelor’s level. Additionally, upper secondary/postsecondary non-tertiary and below upper secondary could not be combined into one group and there was no way to mathematically compute two separate groups as they data were not available in microdata form or in a data tool. As such, Figure 6.3 presents below upper secondary as “first generation, below upper secondary (BUS),” upper secondary and postsecondary non-tertiary as “first generation, upper secondary, postsecondary non-tertiary (USP),” and tertiary as “non-first generation.” As such, , so each country’s percentages were excluded if other degree types were included. Table A72 presents the estimates used in Figure 6.3 and Table A73 presents the standard errors.

The large standard errors for attainment by parents’ education make it difficult to draw statistical conclusions about differences across ranks. As such, comparisons in this section were made only by comparing points above and below the OECD average, without using the OECD average standard error, which was unavailable. This is similar to comparing a cutpoint above or below a threshold, which also lacks a standard error. The OECD average is a safer cut point because errors in either direction for each country are likely to cancel each other out. Regardless, no one should interpret ranks as stable estimates, as they are likely to shift year to year due to sampling error, given that the differences between countries are less than 2 percentage points for each rank. The safest interpretation is to examine the extremes (highest and lowest ranks) given the limitations of the data.

Table A72: Estimates for Figure 6.3: Percentage of 25- to 34-Year-olds who earned a tertiary degree, by parents' highest educational attainment level and country: 2023 (Indicator 6c)

	Neither parent attained upper secondary education	At least one parent attained upper secondary or post-secondary non-tertiary education	At least one parent attained a tertiary education
Austria	15.7	36.7	63.3
Canada	38.1	50.7	74.0
Chile	24.6	49.4	68.0
Czechia		30.0	60.3
Denmark	48.5	45.3	70.0
Estonia	16.7	41.2	64.3
Finland		37.3	62.3
France	32.1	55.3	74.9
Germany	19.6	31.7	62.1
Hungary	6.5	34.1	70.6
Ireland	39.1	59.4	79.2
Israel	25.5	45.5	62.6
Italy	14.6	34.6	63.4
Japan		43.2	71.5
Korea	45.3	78.0	85.5
Latvia		40.4	74.3
Lithuania	4.5	38.5	66.0
Netherlands	31.9	51.1	72.5
New Zealand	38.8	50.5	77.2
Norway	29.6	51.3	73.3
Poland	10.9	32.3	78.9
Portugal	23.1	43.0	72.7
Slovak Republic	2.8	30.8	65.3
Spain	30.0	56.4	75.0
Sweden	22.9	40.4	49.2
Switzerland	28.2	45.4	64.3
United States	22.3	36.0	68.0
OECD Average	25.8	44.4	69.7

NOTES: First-generation status for this Indicator is defined as at least one parent attained upper secondary or post-secondary but no tertiary education (education after high school), while for the other Indicators in this report, first-generation is defined as at least one parent having attained a bachelor's degree.

SOURCE: *Education at a Glance*, Intergenerational mobility in educational attainment, Table A1.4 (OECD, 2024).

Table A73: Standard errors for Figure 6.3: Percentage of 25- to 34-Year-olds who earned a tertiary degree, by parents' highest educational attainment level and country: 2023 (Indicator 6c)

	Neither parent attained upper secondary education	At least one parent attained upper secondary or post-secondary non-tertiary education	At least one parent attained a tertiary education
Austria	5.09	1.89	2.42
Canada	8.01	3.64	2.15
Chile	3.48	2.91	3.07
Czechia		1.69	4.13
Denmark	5.93	3.53	2.76
Estonia	6.89	2.40	1.83
Finland		2.27	2.94
France	4.95	2.60	2.27
Germany	4.95	2.34	2.85
Hungary	2.53	2.37	2.39
Ireland	4.50	3.75	2.63
Israel	3.60	2.74	2.34
Italy	2.21	3.23	6.64
Japan		3.43	2.35
Korea	5.53	1.89	1.69
Latvia		3.13	3.41
Lithuania	2.15	2.65	2.46
Netherlands	5.32	3.96	3.04
New Zealand	7.13	5.82	3.15
Norway	6.77	3.44	2.35
Poland	4.87	1.97	4.57
Portugal	2.63	3.84	5.04
Slovak Republic	1.88	2.11	4.35
Spain	2.91	3.95	3.40
Sweden	6.36	3.98	2.83
Switzerland	4.66	2.22	2.48
United States	5.76	3.43	2.79

NOTES: First-generation status for this Indicator is defined as at least one parent attained upper secondary or post-secondary but no tertiary education (education after high school), while for the other Indicators in this report, first-generation is defined as at least one parent having attained a bachelor's degree.

SOURCE: *Education at a Glance*, Intergenerational mobility in educational attainment, Table A1.4 (OECD, 2024).

7. Indicator 7 (Are there differences in higher education access, attainment, and cost by state?)

Definitions for Indicator 7

Definitions for the indicators and information about classifications are as follows.

The College Participation Rate is defined as the percent of dependent 18- to 24-year-olds who are not still enrolled in high school and are enrolled in any postsecondary education, as measured by the Current Population Survey (CPS) and American Community Survey (ACS).

The estimated college participation rate is defined as the percentage of 4th- to 9th-grade students who are eligible for the free-lunch program, compared to the percentage of Pell Grant recipients who enroll in college six years later, as measured by the Pell Grant recipient file in each state.

IPEDS Outcomes Component/Graduation Rates by State and Pell Grant Receipt. The IPEDS Outcomes Component provides cohort data on degree-seeking undergraduate students earning any formal award (certificate, associate's, or bachelor's degree) at the institution of first enrollment within 4, 6, and 8, years. Pell Grant receipt data are shown by institution type and control, and institution acceptance rate.

Statistical Testing

Statistical tests were conducted for all estimates in this chapter that were derived from a sample survey. Estimates derived from the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b) comes from a census of Title IV postsecondary institutions. Since these statistics are not subject to sampling error, any differences reported in the text are considered real population differences, and no statistical tests were required.

Additionally, program data from the Child Nutrition Division at the U.S. Department of Agriculture (Food and Nutrition Service, 2014), the Pell End-Of-Year Grant Reports Tables 77a and 77d (Office of Federal Student Aid, 2023) and the 1940 U.S. Census (Scaniello & Day, 2006; U.S. Census Bureau, 2006) are capture all units in the population and are not subject to sampling error. Therefore, statistical testing was not used for this data source either.

For estimates derived from sample surveys, documents the statistical tests and thresholds used to determine if the differences mentioned in the chapter are statistically significant.

Table A74: Statistical test results verifying the differences mentioned for Indicator 6

Chapter Section	Figure	Comparison	Method	Result	p-value	p-value decision threshold
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Alaska 18-24 college participation rate versus Massachusetts 18-24 college participation rate	t-test	-17.65	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Nevada 18-24 college participation rate versus Massachusetts 18-24 college participation rate	t-test	-15.96	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Montana 18-24 college participation rate versus Massachusetts 18-24 college participation rate	t-test	-13.51	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Alaska 18-24 college participation rate versus Rhode Island 18-24 college participation rate	t-test	-11.91	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Nevada 18-24 college participation rate versus Rhode Island 18-24 college participation rate	t-test	3.70	0.0061	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Montana 18-24 college participation rate versus Rhode Island 18-24 college participation rate	t-test	-8.26	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Alaska 18-24 college participation rate versus District of Columbia 18-24 college participation rate	t-test	-11.67	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Nevada 18-24 college participation rate versus District of Columbia 18-24 college participation rate	t-test	-8.93	0.0000	0.006 *
Are there differences in higher education access, attainment, and cost by state? - Indicator 1j(ii a)	7.2	Montana 18-24 college participation rate versus District of Columbia 18-24 college participation rate	t-test	-8.22	0.0000	0.006 *

* Statistically significant test at the threshold provided.

NS: Not statistically significant.

NOTES: The threshold for statistical significance was sometimes reduced using the Bonferroni correction (Emerson, 2020), in order to account for Type I error when conducting multiple comparisons.

SOURCE: Analysis by authors.

Figure 7.1 and Figure 7.2: Low-Income College Participation Rate by State

Participation rates for low-income students are estimates based on: 1) public school enrollment; 2) the number and percentage of 4th to 9th graders who were approved for Free or Reduced-Price Lunch 9 years earlier, and 3) the number of dependent Pell Grant recipients from each state in a given year. The data come from the Digest of Education Statistics Table 203.40 (National Center for Education Statistics, 2015a), program data from the Child Nutrition Division at the U.S. Department of Agriculture (Food and Nutrition Service, 2014), and the Pell End-Of-Year Grant Reports Tables 77a and 77d (Office of Federal Student Aid, 2023). All data sources are program data and represent all people in the population. Therefore, no statistical tests were run for the text describing this table. Table A75 lists the estimates used to create Figure 7.1.

Table A75: Estimates for Figure 7.1: Estimated college participation rates for students from low-income families by state: 2023 (Indicator 7a(i))

State	4th to 9th Grade Children (Y-9 years)	Total Enrollment	Number Approved Free Lunch	Number Approved Reduced Price Lunch	Approved Free/ RP Lunch Rate	Percent of Children in Low-Income Families	Dependent Pell Grant Recipients by State of Residence	Low-Income College Participation Rate
United States	22,569,379	51,109,538	23,625,751	3,628,269	53.3	12,035,059	3,028,449	25.2
Alabama	347,169	759,860	407,164	52,524	60.5	210,025	45,869	21.8
Alaska	58,100	119,565	51,719	8,351	50.2	29,190	2,178	7.5
Arizona	504,471	1,066,128	473,493	69,049	50.9	256,720	55,874	21.8
Arkansas	220,501	484,615	240,070	49,147	59.7	131,594	25,785	19.6
California	2,831,751	6,377,242	3,167,476	578,817	58.7	1,663,504	473,892	28.5
Colorado	391,008	844,810	306,454	62,627	43.7	170,824	33,663	19.7
Connecticut	248,363	535,451	172,673	31,336	38.1	94,627	33,637	35.5
Delaware	61,644	141,283	71,135	6,689	55.1	33,956	7,990	23.5
Dist of Columbia	29,084	80,157	48,657	2,828	64.2	18,681	4,272	22.9
Florida	1,229,873	2,779,572	1,522,584	203,475	62.1	763,727	222,396	29.1
Georgia	799,295	1,763,111	991,898	109,282	62.5	499,213	120,601	24.2
Hawaii	84,306	186,087	79,551	20,297	53.7	45,236	8,254	18.2
Idaho	134,582	311,514	133,111	28,882	52.0	69,985	11,150	15.9
Illinois	930,103	1,942,341	1,015,784	90,507	57.0	529,755	125,043	23.6
Indiana	478,793	1,121,840	454,980	88,580	48.5	231,987	49,500	21.3
Iowa	215,442	534,606	180,447	35,990	40.5	87,222	21,058	24.1
Kansas	218,702	548,285	213,662	51,108	48.3	105,612	20,809	19.7
Kentucky	302,115	727,070	411,386	39,961	62.1	187,545	36,415	19.4
Louisiana	324,802	791,720	453,212	53,744	64.0	207,978	50,951	24.5
Maine	82,572	184,115	73,703	12,780	47.0	38,786	8,938	23.0
Maryland	385,625	908,934	348,439	55,713	44.5	171,466	48,631	28.4
Massachusetts	433,570	973,742	349,599	45,813	40.6	176,062	49,985	28.4
Michigan	701,775	1,596,300	706,950	84,727	49.6	348,042	77,274	22.2
Minnesota	379,625	881,923	287,184	70,198	40.5	153,836	41,493	27.0
Mississippi	223,498	508,020	323,046	39,497	71.4	159,497	38,637	24.2
Missouri	409,905	953,572	399,732	69,200	49.2	201,576	44,517	22.1
Montana	65,513	153,831	53,697	12,657	43.1	28,259	5,086	18.0
Nebraska	134,551	314,314	112,788	30,366	45.5	61,281	15,910	26.0
Nevada	206,092	463,021	216,118	37,483	54.8	112,879	23,117	20.5
New Hampshire	87,014	184,304	45,693	9,811	30.1	26,205	6,501	24.8
New Jersey	599,550	1,307,854	480,233	82,458	43.0	257,950	102,390	39.7
New Mexico	156,490	327,929	195,668	31,208	69.2	108,267	17,725	16.4
New York	1,219,231	2,946,759	1,482,226	195,107	56.9	694,002	239,972	34.6
North Carolina	704,954	1,586,993	765,932	109,853	55.2	389,030	96,803	24.9
North Dakota	45,594	111,216	23,622	7,040	27.6	12,570	3,538	28.1
Ohio	805,822	1,837,480	646,077	99,852	40.6	327,125	80,555	24.6
Oklahoma	295,084	673,576	358,349	66,764	63.1	186,236	30,221	16.2
Oregon	259,179	584,386	267,032	40,108	52.6	136,219	25,116	18.4
Pennsylvania	813,448	1,786,837	676,046	100,462	43.5	353,501	93,358	26.4
Rhode Island	64,722	156,742	64,834	8,829	47.0	30,417	9,893	32.5

South Carolina	341,587	781,418	406,465	50,515	58.5	199,763	46,149	23.1
South Dakota	57,939	145,707	49,085	11,275	41.4	24,002	4,862	20.3
Tennessee	450,391	1,016,682	529,458	68,456	58.8	264,876	56,998	21.5
Texas	2,317,359	5,254,315	2,807,864	404,619	61.1	1,416,831	332,668	23.5
Utah	283,817	632,217	190,270	55,146	38.8	110,173	18,323	16.6
Vermont	38,195	90,250	30,932	5,929	40.8	15,600	3,519	22.6
Virginia	577,290	1,251,186	432,531	84,016	41.3	238,332	68,254	28.6
Washington	477,414	1,067,902	406,716	77,105	45.3	216,296	37,798	17.5
West Virginia	124,418	301,413	127,963	14,979	47.4	59,004	11,896	20.2
Wisconsin	375,186	915,032	346,122	53,683	43.7	163,930	36,167	22.1
Wyoming	41,865	96,311	25,921	9,426	36.7	15,365	2,818	18.3

NOTES: Caution is needed in reviewing these data due to differential use of Free and Reduced-Price Lunch and migrations in and out of states among Pell Grant recipients. Participation rates for low-income students are estimates based on: 1) public school enrollment; 2) the number and percentage of 4th to 9th graders who were approved for Free or Reduced-Price Lunch 9 years earlier, and 3) the number of dependent Pell Grant recipients from each state in a given year.

SOURCE: College Participation Rates for Students from Low-income Families by State: 1993 to 2023 (Mortenson & Brunt, 2025).

Figure 7.3 and Figure 7.4: 18–24-Year-Old College Participation Rate by State

The college participation rate in Figure 7.3 is derived from the annual data are collected by the US Census Bureau in the American Community Survey (U.S. Census Bureau, 2024a). Results are derived using the Microdata Access Tool (U.S. Census Bureau, 2025d). The historic data are part of the Postsecondary Opportunity (PEO) Data Archive (Mortenson & Brunt, 2025). Table A76 lists the estimates and standard errors used to create Figure 7.3.

Table A76: Estimates and standard errors for Figure 7.3: Percentage of 18- to 24-year-olds enrolled in degree-granting postsecondary institutions by state: 2024 (Indicator 7b(i))

	College Participation Rate	Standard Error		College Participation Rate	Standard Error
United States	40.5	0.12	Missouri	35.5	0.73
Alabama	43.7	0.91	Montana	30.0	1.40
Alaska	18.7	1.70	Nebraska	41.7	1.16
Arizona	36.9	0.73	Nevada	28.9	1.22
Arkansas	31.7	1.03	New Hampshire	43.0	1.52
California	47.0	0.30	New Jersey	44.6	0.67
Colorado	39.3	0.79	New Mexico	33.2	1.70
Connecticut	48.0	1.09	New York	47.5	0.43
Delaware	44.6	1.88	North Carolina	39.4	0.61
District of Columbia	52.2	2.31	North Dakota	46.2	1.95
Florida	40.8	0.49	Ohio	37.5	0.55
Georgia	37.7	0.61	Oklahoma	33.8	0.73
Hawaii	34.4	1.58	Oregon	36.9	1.03
Idaho	37.9	0.97	Pennsylvania	44.0	0.49
Illinois	41.5	0.55	Rhode Island	50.6	2.07
Indiana	36.0	0.67	South Carolina	37.2	0.85
Iowa	41.2	1.03	South Dakota	30.9	1.76
Kansas	39.3	0.97	Tennessee	33.6	0.67
Kentucky	36.2	0.79	Texas	35.9	0.36
Louisiana	35.4	0.85	Utah	43.1	0.97
Maine	47.3	1.58	Vermont	45.2	2.19
Maryland	41.2	0.91	Virginia	42.7	0.61
Massachusetts	50.6	0.61	Washington	33.3	0.67
Michigan	40.3	0.61	West Virginia	34.6	1.34
Minnesota	37.5	0.79	Wisconsin	38.7	0.73
Mississippi	37.6	1.22	Wyoming	39.0	2.01

NOTES: Data are based on sample surveys of the population 18- to 24-year-olds residing within the United States, including both noninstitutionalized persons (e.g., those living in households, college housing, or military housing located within the United States) and institutionalized persons (e.g., those living in prisons, nursing facilities, or other healthcare facilities).

SOURCE: American Community Survey (ACS), Table S1401 (U.S. Census Bureau, 2024a)

Figure 7.5 and Figure 7.6: Average College Costs for 4-Year Public Institutions by State

The data for Figure 7.5, Figure 7.7, and Figure 7.9 come from provisional data from 2024-25 in the Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b). The data used to supply the Figure 7.5 are located in Table A77. Cost data were weighted by full-time equivalent students. FTE was computed using the estimated equivalents reported in the IPEDS glossary:

The number of FTE students is calculated based on fall student headcounts as reported by the institution on the IPEDS Enrollment (EF) component (Part A). The full-time equivalent (headcount) of the institution's part-time enrollment is estimated by multiplying the factors noted below times the part-time headcount. These are then added to the full-time enrollment headcounts to obtain an FTE for all students enrolled in the fall. This formula is used to produce an FTE that is used annually in the Digest of Education Statistics.

- Part-time undergraduate enrollment
- Public 4-year (.403543)
- Private (not-for-profit and for-profit) 4-year (.392857)
- Public 2-year and <2-year (.335737)
- All other institutions (.397058)
- Part-time graduate enrollment
- Public 4-year (.361702)
- Private (not-for-profit and for-profit) 4-year (.382059)

The following filters were used to derive the dataset:

- 50 states and the District of Columbia (excludes outlying areas)
- Room and board are based on full-time undergraduate students.
- Degree-granting institutions
- Includes U.S. service academies.
- Title IV federal financial aid programs.
- Excludes administrative units.

Table A77: Estimates used to derive Figure 7.5: Average costs (undergraduate tuition, fees, and room and board) charged by 4-year public colleges and universities for full-time in-state students by state: 2024-25 (Indicator 7d(i))

	Average cost		Average cost
United States	23,809	Missouri	23,410
Alabama	24,894	Montana	20,824
Alaska	21,457	Nebraska	22,392
Arizona	25,595	Nevada	20,230
Arkansas	21,280	New Hampshire	31,098
California	27,169	New Jersey	33,154
Colorado	26,161	New Mexico	20,194
Connecticut	31,866	New York	25,782
Delaware	27,899	North Carolina	20,261
District of Columbia	5,662	North Dakota	19,735
Florida	17,077	Ohio	25,103
Georgia	19,637	Oklahoma	19,279
Hawaii	24,845	Oregon	27,876
Idaho	19,799	Pennsylvania	30,880
Illinois	29,175	Rhode Island	30,527
Indiana	23,047	South Carolina	25,193
Iowa	22,426	South Dakota	19,294
Kansas	21,514	Tennessee	23,481
Kentucky	25,126	Texas	19,660
Louisiana	21,770	Utah	17,731
Maine	24,150	Vermont	31,230
Maryland	25,430	Virginia	31,170
Massachusetts	31,717	Washington	24,198
Michigan	28,745	West Virginia	22,986
Minnesota	25,915	Wisconsin	20,493
Mississippi	22,110	Wyoming	18,039

† Not applicable/no data

NOTES: College costs are reported annually by institutions to the U.S. Department of Education through IPEDS and include tuition, fees, and room and board. Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates but not adjusted to reflect student residency.

SOURCE: Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b), modeled after the Digest of Education Statistics 2023 Table 330.20 (National Center for Education Statistics, 2023h). Analysis by author.

Figure 7.7 and Figure 7.8: Average College Costs for Private Nonprofit and For-Profit Institutions by State

See the information presented for Figure 7.5 for the methods used to derive Figure 7.7. Table A78 presents the estimates used to derive Figure 7.7.

Table A78: Estimates used to derive Figure 7.7: Average costs (undergraduate tuition, fees, and room and board) charged by 4-year private (non-profit and for-profit) colleges and universities for full-time students by state: 2024-25 (Indicator 7d(ii))

Average cost		Average cost	
United States	51,440	Missouri	46,721
Alabama	29,511	Montana	44,825
Alaska	27,456	Nebraska	41,139
Arizona	26,349	Nevada	27,444
Arkansas	37,420	New Hampshire	33,908
California	63,629	New Jersey	59,261
Colorado	42,456	New Mexico	72,784
Connecticut	66,609	New York	68,032
Delaware	26,206	North Carolina	58,404
District of Columbia	68,667	North Dakota	27,129
Florida	49,419	Ohio	53,907
Georgia	49,870	Oklahoma	43,981
Hawaii	37,508	Oregon	66,208
Idaho	13,038	Pennsylvania	66,665
Illinois	55,587	Rhode Island	71,868
Indiana	54,250	South Carolina	43,372
Iowa	49,843	South Dakota	41,735
Kansas	45,240	Tennessee	47,747
Kentucky	39,813	Texas	55,748
Louisiana	62,098	Utah	20,961
Maine	53,867	Vermont	73,782
Maryland	68,887	Virginia	38,106
Massachusetts	77,952	Washington	63,419
Michigan	47,957	West Virginia	24,167
Minnesota	48,103	Wisconsin	54,599
Mississippi	32,761	Wyoming	†

† Not applicable/no data

NOTES: College costs are reported annually by institutions to the U.S. Department of Education through IPEDS and include tuition, fees, and room and board. Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates but not adjusted to reflect student residency.

SOURCE: Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b), modeled after the Digest of Education Statistics 2023 Table 330.20 (National Center for Education Statistics, 2023h). Analysis by author.

Figure 7.9 and Figure 7.10: Average College Costs for 2-Year Public Institutions by State

See the information presented for Figure 7.5 for the methods used to derive Figure 7.9. Table A79 presents the estimates used to derive Figure 7.9.

Table A79: Estimates used to derive Figure 7.9: Average costs (undergraduate tuition, fees, not including room and board costs) charged by public 2-year institutions for full-time in-state students by state: 2024-25 (Indicator 7d(iii))

	Average cost		Average cost
United States	3,808	Missouri	4,535
Alabama	5,074	Montana	4,283
Arizona	2,456	Nebraska	3,511
Arkansas	4,030	Nevada	†
Alaska	†	New Hampshire	7,105
California	1,299	New Jersey	5,433
Colorado	4,697	New Mexico	2,093
Connecticut	5,338	New York	6,040
Delaware	†	North Carolina	2,554
District of Columbia	†	North Dakota	5,751
Georgia	3,450	Ohio	4,549
Hawaii	3,225	Oklahoma	4,305
Idaho	3,424	Oregon	5,791
Illinois	4,446	Pennsylvania	6,026
Indiana	5,154	Rhode Island	5,550
Iowa	6,012	South Carolina	5,426
Kansas	3,988	South Dakota	7,406
Kentucky	4,752	Tennessee	4,789
Louisiana	4,318	Texas	3,260
Maine	4,152	Utah	4,426
Maryland	4,421	Vermont	6,920
Massachusetts	5,968	Virginia	5,548
Michigan	4,285	Washington	†
Minnesota	6,097	West Virginia	5,157
Mississippi	4,005	Wisconsin	4,946
Missouri	4,535	Wyoming	4,564

† Not applicable/no data

NOTES: College costs are reported annually by institutions to the U.S. Department of Education through IPEDS and include tuition, fees, and room and board. Data are for the entire academic year and are average charges for full-time students. Tuition and fees are weighted by the number of full-time-equivalent undergraduates but not adjusted to reflect student residency.

SOURCE: Integrated Postsecondary Education Data System (National Center for Education Statistics, 2025b), modeled after the Digest of Education Statistics 2023 Table 330.20 (National Center for Education Statistics, 2023h). Analysis by author.

Figure 7.11 and Figure 7.12: State-Need Based Grants as a Percentage of Pell Grants by State

The data used to create Figure 7.11 (Indicator 4a(vi)) come from the annual state student financial aid program data are collected through the National Association of State Student Grant & Aid Programs (NASSGAP), (National Association of State Student Grant and Aid Programs, 2024). Annual data on Federal Pell Grants are compiled and reported by the U.S. Department of Education (Office of Federal Student Aid, 2023). The data are part of the Postsecondary Education Opportunity data archive (Mortenson & Brunt, 2025). The estimates used for Figure 7.11 are found in Table A80.

Table A80: Estimates used for Figure 7.11: State need-based grant amounts as a percentage of Pell Grant amounts by state: 2023 (Indicator 7e)

	State grants as a percentage of Pell Grants		State grants as a percentage of Pell Grants
United States	38.8	Missouri	18.5
Alabama	10.6	Montana	1.3
Alaska	17.5	Nebraska	22.4
Arizona	14.4	Nevada	9.9
Arkansas	0.1	New Hampshire	4.5
California	71.8	New Jersey	63.0
Colorado	61.5	New Mexico	10.4
Connecticut	12.5	New York	36.5
Delaware	27.9	North Carolina	27.3
Dist of Columbia	11.5	North Dakota	31.5
Florida	14.8	Ohio	15.0
Georgia	0.7	Oklahoma	26.1
Hawaii	9.6	Oregon	50.2
Idaho	15.6	Pennsylvania	51.3
Illinois	62.1	Rhode Island	12.5
Indiana	61.0	South Carolina	30.2
Iowa	33.6	South Dakota	0.5
Kansas	19.3	Tennessee	26.7
Kentucky	55.0	Texas	41.4
Louisiana	10.9	Utah	1.8
Maine	34.3	Vermont	89.4
Maryland	30.9	Virginia	112.6
Massachusetts	43.7	Washington	125.7
Michigan	19.3	West Virginia	34.6
Minnesota	68.4	Wisconsin	35.9
Mississippi	8.8	Wyoming	44.4

SOURCE: Annual National Association of State Student Grant & Aid Programs (NASSGAP) survey (National Association of State Student Grant and Aid Programs, 2024), the Federal Pell Grants End of Year Report (Office of Federal Student Aid, 2023). Analyzed data are part of the Postsecondary Education Opportunity Archive (Mortenson & Brunt, 2025).

Figure 7.13 and Figure 7.14: State Bachelor's Degree Attainment Rates by State: 1940 and 2025

Figure 7.13 (Indicators 5h(iii)) uses Census Bureau data to show the percent of the population 25 years of age and older that has attained a high school credential and a bachelor's degree or higher by state. The data from 1940 is from the decennial census, and 2025 data is the Current Population Survey and were calculated using the US Census Bureau's MDAT system (U.S. Census Bureau, 2025d). We provide data from 1940 to give historical context to recent observed differences by state. To display the range of variation by state and changes in that variation over time, Indicators 5h(ii) present information in bar charts displaying bachelor's degree attainment rates for individual states for 1940 and 2025. We note that the data displayed reflect the educational attainment of persons living in the state at the time of the survey and not the percentage of the population who attained a bachelor's degree from an institution within the state. The estimates and standard errors used to create Figure 7.13 is in Table A81.

Table A81: Estimates and standard errors used in Figure 7.13: Percentage of the population age 25 and older with a bachelor's degree or higher by state: 1940 and 2025 (Indicator 7g(ii))

	1940 Percent	2025 Total	2025 Percent	2025 Standard Error		1940 Percent	2025 Total	2025 Percent	2025 Standard Error
United States	4.6	234,041,647	39.3	0.20	Missouri	3.9	4,335,460	34.4	1.40
Alabama	2.9	3,527,610	32.2	1.52	Montana	4.8	815,025	41.4	3.34
Alaska		481,190	34.2	4.18	Nebraska	4.3	1,335,434	38.2	2.57
Arizona	6.3	5,134,771	40.6	1.33	Nevada	6.7	2,320,811	32.6	1.88
Arkansas	2.3	1,999,820	30.2	1.99	New Hampshire	4.3	1,008,004	47.4	3.04
California	6.8	27,715,818	41.6	0.57	New Jersey	5.1	6,567,978	50.6	1.19
Colorado	6.0	4,171,629	48.4	1.50	New Mexico	4.5	1,462,644	33.5	2.39
Connecticut	4.9	2,606,564	41.2	1.86	New York	5.6	13,849,598	43.7	0.82
Delaware	5.3	740,937	37.1	3.43	North Carolina	4.1	7,474,823	35.9	1.07
Dist of Col	11.1	515,239	70.1	3.90	North Dakota	3.6	515,652	36.4	4.10
Florida	5.0	16,864,010	38.0	0.72	Ohio	4.5	7,880,175	35.3	1.04
Georgia	3.3	7,519,170	41.0	1.10	Oklahoma	4.8	2,614,337	30.4	1.74
Hawaii		996,798	37.9	2.97	Oregon	5.5	3,052,990	39.3	1.71
Idaho	4.5	1,271,337	35.4	2.59	Pennsylvania	4.2	9,104,681	38.7	0.99
Illinois	4.5	8,910,723	44.3	1.02	Rhode Island	4.5	821,659	43.4	3.34
Indiana	3.9	4,614,616	33.8	1.35	South Carolina	4.7	3,858,051	34.5	1.48
Iowa	4.2	2,172,517	32.3	1.94	South Dakota	3.8	619,526	40.0	3.81
Kansas	4.6	2,003,516	38.2	2.10	Tennessee	3.1	4,788,737	37.7	1.35
Kentucky	3.0	3,135,285	27.9	1.55	Texas	4.4	20,398,077	38.5	0.66
Louisiana	3.5	3,106,245	26.1	1.52	Utah	6.2	2,141,956	39.1	2.04
Maine	3.4	1,079,021	41.7	2.90	Vermont	4.1	483,577	48.5	4.40
Maryland	4.9	4,353,879	49.7	1.47	Virginia	4.5	6,134,874	43.3	1.22
Massachusetts	5.6	5,058,218	51.4	1.36	Washington	5.6	5,618,224	37.9	1.25
Michigan	4.1	6,991,965	35.1	1.10	West Virginia	3.4	1,211,771	25.7	2.43
Minnesota	4.2	3,988,922	39.9	1.50	Wisconsin	3.9	4,249,664	37.4	1.44
Mississippi	3.1	2,019,523	25.3	1.87	Wyoming	5.1	398,596	31.2	4.49

NOTES: Data for 1940 are from the decennial census. Data for 2025 is from the Current Population Survey. There are no standard errors for the 1940 estimates because they came from the U.S. Census and no sampling error is present.

SOURCE: A Half-century of Learning: Historical Statistics on Educational Attainment in the United States 1940 to 2000 (Scaniello & Day, 2006; U.S. Census Bureau, 2006) Current Population Survey, Annual Social and Economic Supplement (U.S. Census Bureau, 2025c). Retrieved from microdata access tool (U.S. Census Bureau, 2025d). Analysis by author.

Figure 7.15 and Figure 7.16: State Bachelor's Degree Graduation Rates: 2024

The estimates from Figure 7.15 (Indicator 5h(iv)) were derived from the Integrated Postsecondary Education Data System Header (Institutional Characteristics), and Graduation Rates (GR) components. The cohort was filtered using the following characteristics. The estimates for the figure are presented in Table A82. Statistical tests weren't required for this section because the data were from a census of colleges and universities.

Table A82: Estimates used in Figure 7.15: Percentage of first-time, full-time bachelor’s degree-seeking students earning any formal award (certificate, associate’s or bachelor’s degree) at the institution of first enrollment within 6 years by state of institution: reported in 2024 for cohort beginning in 2018 (Indicator 7g(iii))

	Graduation Rate		Graduation Rate
United States	64.8	Missouri	60.4
Alabama	60.2	Montana	52.1
Alaska	31.0	Nebraska	60.9
Arizona	58.4	Nevada	54.3
Arkansas	53.5	New Hampshire	64.2
California	70.3	New Jersey	67.9
Colorado	60.2	New Mexico	50.4
Connecticut	69.7	New York	68.0
Delaware	71.9	North Carolina	65.5
District of Columbia	78.7	North Dakota	59.7
Florida	68.1	Ohio	61.5
Georgia	56.8	Oklahoma	55.0
Hawaii	55.9	Oregon	65.8
Idaho	52.5	Pennsylvania	67.7
Illinois	66.8	Rhode Island	73.8
Indiana	65.9	South Carolina	62.5
Iowa	68.7	South Dakota	57.9
Kansas	58.2	Tennessee	58.4
Kentucky	58.5	Texas	61.2
Louisiana	54.3	Utah	58.5
Maine	60.3	Vermont	70.4
Maryland	70.9	Virginia	68.2
Massachusetts	74.5	Washington	68.5
Michigan	67.3	West Virginia	52.6
Minnesota	67.7	Wisconsin	67.4
Mississippi	59.3	Wyoming	58.8

NOTES: For 4-year institutions, 150% of normal time is equivalent to taking 6 years to complete the bachelor’s degree or equivalent.

SOURCE: Integrated Postsecondary Education Data System (IPEDS), Graduation Rates component provisional data (National Center for Education Statistics, 2025b).

8. Statistical Testing

All differences described in the report are deemed statistically significant by the authors and are considered meaningful unless otherwise noted. To improve the accessibility of the writing, we did not include all findings using the term “statistically significant” in the report text. Instead, we provide tables in the technical appendix documenting the statistical tests for each comparison made in the report. Generally, a threshold of $p < 0.05$ is used to determine if a difference is statistically significant. In some cases, the threshold for statistical significance was adjusted using the Bonferroni correction (Emerson, 2020) to account for Type I error when conducting multiple comparisons. For most tests, we used a traditional t-test drawing from existing estimates and standard errors:

$$t = \frac{x_1 - x_2}{\sqrt{s_{x1}^2 + s_{x2}^2}}$$

Where t equals the difference between estimates ($x_1 - x_2$) over the square root of the pooled standard error (s) squared (or variance).

Because public-use data and tables were used in this report, the degrees of freedom used to determine the p-value were not always available due to privacy and confidentiality restrictions. In those cases, the degrees of freedom were estimated using the overall sample size for the study and then divided among the groups being compared. Given the large sample sizes for the studies used in this report, this method has a negligible impact on the p-values.

In some cases, we have also conducted equivalence testing to verify that two estimates are the same. Testing for equivalence requires a non-significant statistical test for difference (i.e., z-test, t-test, chi-square, etc.), plus two additional tests on the left and right-hand sides of the distribution to test if the difference between the two estimates exceeds a threshold of what the authors determine to be meaningful. For most estimates in this report, we consider a meaningful difference for equivalence purposes to be more than 10%. The formulas used for the equivalence testing are as follows, using methods described by Rogers et al. (1993), but using t-tests instead of z-tests:

Test 1 (traditional t-test):	$t = \frac{x_1 - x_2}{\sqrt{s_{x1}^2 + s_{x2}^2}}$	x = estimates s = standard error
------------------------------	--	---

Test 2 (right tail of distribution):	$t_1 = \frac{(x_1 - x_2) - \delta_1}{\sqrt{s_{x1}^2 + s_{x2}^2}}$	x = estimates s = standard error δ_1 = equivalency interval (value indicating meaningful change)
--------------------------------------	---	---

Test 3 (left tail of distribution):

$$t_2 = \frac{(x_1 - x_2) - \delta_2}{\sqrt{s_{x1}^2 + s_{x2}^2}}$$

x = estimates
 s = standard error
 $\delta_2 = -\delta_1$

In previous reports, we have included a cautionary note regarding the interpretation of tables resulting from small sample sizes. Those cautions have been removed from this report because extra efforts were made to obtain and report standard errors, margins of error, or confidence intervals, allowing readers to make their own judgments about the adequacy of the statistical findings from this analysis.

Variances and standard errors had to be computed by hand for some studies due to technological limitations when the study was conducted (i.e., the lack of computer resources or computing capacity) or privacy considerations. The following sections detail the methods used to compute standard errors.

9. Variance and Standard Error Calculations

In some cases, studies are unable to provide standard errors or margins of error due to the age of the study or for privacy reasons. Instead, many studies provide researchers with data to calculate their own standard errors, which are required for statistical testing. Most of these studies publish a table of statistics for major groups that can plausibly be used for analysis. These studies provide the components necessary to calculate standard errors. This section covers the methods used for calculating variances and standard errors. They include the use of interpolation tables, the Generalized Variance Formula using beta parameters, the Generalized Variance Function using design factors, and replicate weights/Taylor Series Linearization.

Method 1: Interpolation Tables

Earlier studies provided tables in the technical documentation to calculate standard errors. These tables typically cross-reference a list of pre-calculated standard errors with a table of factors to adjust those standard errors according to the variables used in the analysis. When interpolation tables are used to calculate variances, a table will be provided to document the components used to calculate the standard error. Researchers sometimes need to estimate values between two numbers or interpolate some of the table estimates. See the appendix provided for the 1976 Current Population Survey for an example (U.S. Census Bureau, 1976).

Method 2: Generalized Variance Formula using Beta Parameters

The Generalized Variance Formula estimates variance by providing a list of alpha and beta parameters that can be used in a formula. These provide slightly more accurate variances/standard errors, but if analysts select variables that were not used in calculating the parameters, they need to select the closest value. The Current Population Survey, a major data source in this report, provides estimates of alpha and beta parameters for most years. For percentage estimates, the following formula is used using the beta parameter:

$$s_{y,p} = \sqrt{\frac{b}{y} \times p(100 - p)}$$

Where the standard error of the percentage estimate (p) within the population (y) equals the square root of beta (b), which is listed in the technical documentation representing Type II error, over the population count (y) times the percentage estimate (p) times 100 minus the percentage estimate (p). If percentages are presented as a fraction, the second part must be scaled appropriately: $p(1 - p)$. There are times when the beta is not provided for the exact estimate, so researchers are guided to select the closest comparable population (U.S. Census Bureau, 2024c).

Method 3: Generalized Variance Function using Design Factors

Similar to the Generalized Variance Formula using beta parameters, the Generalized Variance Function uses a similar method for estimating variance and is typically found in the American Community Survey and older studies. “Design factors” are provided in tables similar to how beta parameters are provided and are used in this formula to estimate standard errors:

$$s_{(p)} = DF \times \sqrt{\frac{99}{b} \times p(100 - p)}$$

Where the standard error of the percentage estimate (p) equals the design factor (DF) presented in the tables provided by the U.S. Census Bureau for the subgroup times the square root of 99 divided by the denominator used to calculate the percentage (B), times the percentage estimate (p) times 100 minus the percentage estimate (p). If percentages are presented as a fraction, the second part must be scaled appropriately: $p(1 - p)$. There are times when two estimates are used in the calculation (like educational attainment by race). In these cases, the documentation states that the highest design factor should be used when computing standard error estimates (U.S. Census Bureau, 2024b).

Method 4: Replicate Weights and Taylor Series Linearization

The most accurate method for computing standard errors is to use the public-use unit record data provided by the statistical agencies. In these cases, the documentation provides the necessary inputs for using replicate weights to estimate variances with multiple microsamples of the dataset, or it employs Taylor Series Linearization to estimate variance based on the study design, utilizing the stratum and primary sampling units. These methods are typically used in NCES data products using DataLab (National Center for Education Statistics, 2025a) or from downloaded public-use datasets. See Table 99 of the National Postsecondary Student Aid Study (NPSAS) documentation for examples of the commands used to estimate accurate standard errors across the different statistical software platforms (National Center for Education Statistics, 2023a).

Pooled Variance and Standard Error Calculations

In some cases, estimates may be summed or subtracted, requiring analysts to calculate a pooled standard error. When it is not possible to compute a standard error directly from the underlying data or data tool, the following formula was used to compute the estimated standard error. When comparing these calculations with standard error estimates directly from a dataset, this calculation is found to yield a conservative estimate (i.e., a higher standard error than is actually found in the underlying data):

$$s_{pooled} = \sqrt{s_1^2 + s_2^2}$$

Where s_{pooled} is the pooled standard error, s_1 is the standard error of one estimate being summed or subtracted, and s_2 is the second standard error for the estimate being summed or subtracted.

For computed percentage estimates, the pooled standard error was computed using the combined square root of the relative standard errors multiplied by the percentage estimate:

$$s_{pooled} = P \times \sqrt{RSE_1^2 + RSE_2^2}$$

10. Cautions and Limitations

The authors have made every effort to ensure that the visualizations accurately represent the current state of the population. However, readers should keep specific cautions and limitations in mind when interpreting the data:

Design Limitations, Sampling Error, and Changes Over Time

This report relies on data compiled over extended periods to observe trends. As noted throughout, data from sample surveys such as the CPS and NCES longitudinal studies are subject to sampling error and changes in definitions and study designs. For example, the income and race/ethnicity data for small populations, as reported in the CPS, suffer from small sample sizes and larger sampling errors than the estimates for the entire population. To address these limitations, we only report differences or equivalences that are statistically significant. In some cases, we use 3-year moving averages.

Changes in Race/Ethnicity of Time

Definitions of race/ethnicity have also changed over time, requiring aggregations or filters in order to maintain long-term trends. Sometimes these classifications do not represent the current state of the U.S. population.

Inferences and Causation

This report does not employ experimental or quasi-experimental methods to describe the differences presented. As such, causation should not be inferred when interpreting results unless evidence of external validity is provided by a body of work from the literature. Without such evidence, the findings should be interpreted as correlational and require further investigation. The use of longitudinal studies in this report may address some logical biases related to endogeneity, but caution should still be exercised.

11. Artificial Intelligence Logs

Microsoft's Co-Pilot was sometimes used to direct researchers to relevant resources, provide suggestions on the most efficient rendering of data visualizations, or offer summary information to assist in writing chapter summaries or key takeaways. Co-Pilot was used because it was on a closed Enterprise network license with Microsoft, where prompts are not used to further train the Co-Pilot or ChatGPT models behind the application. Grammarly was also used for copy editing prior to being submitted to our internal copy editor. The logs below document the prompts and responses from the language model:

Setting the Stage

The following prompt was used early in the research process to uncover citations in support of the equity definitions presented in this report:

Can you find me a good citation from that academic literature that defines "equity"? A seminal work is what I am looking for.

Copilot said:

Copilot

Here are a few **seminal and well-regarded academic sources** that define and explore the concept of **equity**, particularly in education and social justice contexts:

1. Levinson, Geron, & Brighthouse (2022) – "Conceptions of Educational Equity"

This article identifies **five distinct conceptions of equity** in education:

- Equal distributions of outcomes across populations
- Equal outcomes for every child
- Equal resource allocations

- Equal experiences
- Equal levels of growth

It emphasizes that equity is often conflated with equality, but actually requires **tailored support** to meet individual needs. The authors argue that understanding these distinctions is crucial for restructuring unjust educational systems.

 [Read the full article \(PDF\)](#)ed

2. Elaine Unterhalter (2009) – "What is Equity in Education? Reflections from the Capability Approach"

Unterhalter explores equity through the lens of **Amartya Sen's capability approach**, distinguishing three historical conceptions:

- **Equity from below** (grassroots justice)
- **Equity from above** (state-driven fairness)
- **Equity from the middle** (institutional mediation)

She argues that these forms must be articulated together to expand educational capabilities and address diversity meaningfully.

 [SpringerLink articles](#)springer

3. Pedro Jurado de los Santos et al. (2020) – "The Term Equity in Education: A Literature Review"

This literature review maps the evolution of the term "equity" in education, noting its **complexity and political variability**. It highlights how equity has shifted from general diversity concerns to more specific issues like **gender and race**, and emphasizes the need for **equal opportunities and personalized education**.

 [MDPI article](#)mdpi

Would you like help formatting one of these into a formal citation (APA, MLA, Chicago)? Or are you looking for a definition of equity in a different domain, like economics or law?

The following prompt requests a summary of the Setting the Stage chapter. The text was rewritten:

You said:

Can you help me identify 4-5 key takeaways from this research paper: [REDACTED]

Copilot said:

Copilot

Here are **five key takeaways** from the research paper:

1. Equity ≠ Equality

- Equity focuses on fairness, not uniformity. Equal distribution of resources (e.g., giving all students the same Pell Grant amount) does not achieve fairness because students have different levels of need. Targeted support for low-income and first-generation students is essential to close opportunity gaps.
-

2. Higher Education Yields Significant Societal Benefits

- College attainment correlates with higher lifetime earnings, lower unemployment, reduced reliance on social safety net programs, and longer life expectancy. For example, bachelor's degree holders earn about **78% more** over a lifetime than high school graduates and contribute more in taxes, offsetting public investment in education.
-

3. Equity Reduces Public Costs

- Education lowers societal burdens:
 - **Corrections:** 94% of incarcerated individuals lack a college degree; increasing college attainment reduces incarceration costs (estimated \$40K–\$44K per inmate annually).
 - **Social Programs:** Participation in Medicaid, SNAP, and other assistance programs declines sharply with higher education levels.
-

4. Persistent Gaps by Race, Income, and First-Generation Status

- Despite overall gains in degree attainment, disparities remain:
 - In 2024, **61% of Asians, 43% of White non-Hispanics, 30% of Blacks, and 22% of Hispanics** age 25+ hold a bachelor's degree or higher.
 - First-generation students still comprise over **50%** of college entrants, with higher rates among Black, Hispanic, and Native American populations.
-

5. Policy Implications: Targeted Interventions Are Critical

- Equal opportunity cannot be achieved through equal distribution alone. Policies must address documented gaps in income, race/ethnicity, and parental education to improve social mobility, reduce reliance on public assistance, and strengthen economic growth.
-

Would you like me to **create a concise executive summary (1–2 paragraphs)** based on these takeaways, or **design a slide deck outline for a presentation**?

The following prompt attempted to obtain a citation and data from the seminal publication that documented the Bonferroni correction, after internal reviewers requested a citation. These references were checked and verified. One of the references was used in the publication:

When using the Bonferroni correction, what citation should I use in APA style?

Copilot said:

Copilot

The Bonferroni correction is a statistical adjustment method, and when citing it in APA style, you typically reference a key article or source that explains or introduces the method. Two commonly cited sources are:

1. **Curtin, F., & Schulz, P. (1998).** Multiple correlations and Bonferroni's correction. *Biological Psychiatry*, 44(8), 775–777. [https://doi.org/10.1016/S0006-3223\(98\)00043-2](https://doi.org/10.1016/S0006-3223(98)00043-2)
2. **Emerson, R. W. (2020).** Bonferroni correction and Type I error. *Journal of Visual Impairment & Blindness*, 114(1), 77–78. <https://doi.org/10.1177/0145482X20901378>

APA 7th Edition Reference Examples

- Curtin, F., & Schulz, P. (1998). Multiple correlations and Bonferroni's correction. *Biological Psychiatry*, 44(8), 775–777. [https://doi.org/10.1016/S0006-3223\(98\)00043-2](https://doi.org/10.1016/S0006-3223(98)00043-2)
- Emerson, R. W. (2020). Bonferroni correction and Type I error. *Journal of Visual Impairment & Blindness*, 114(1), 77–78. <https://doi.org/10.1177/0145482X20901378>

Would you like me to also show you **how to cite Bonferroni correction in-text in APA style** (e.g., parenthetical and narrative citations)? Or prepare a **ready-to-use reference list entry for your paper**?

Indicator 1 (Who Enrolls in Higher Education?)

The following prompted the request for a summary of Indicator 1. The text was rewritten for the publication:

You said:

Can you develop recommended key takeaways from this chapter:

Copilot said:

Copilot

Here are the **recommended key takeaways** based on the chapter content:

Key Takeaways from Indicator 1: Who Enrolls in Higher Education?

1. Income-Based Gaps Persist Despite Progress

- College participation rates have increased for all income groups since 1970, but disparities remain.
- In 2023, the gap between the highest and lowest income quartiles was **32 percentage points** (74% vs. 42%), down from **45 points** in 1970.
- Among high school graduates, the gap narrowed only slightly—from **33 points in 1970** to **28 points in 2023** (82% vs. 54%).

2. Race/Ethnicity Differences Are Strongly Linked to Income

- Continuation rates for Black, Hispanic, and White students in the lowest income quartile ranged from **51–55%**, compared to **76–82%** in the highest quartile.
- Asian students had consistently high continuation rates across all income quartiles, suggesting unique patterns.

3. First-Generation Students Form the Majority

- Over **half (54%)** of undergraduates are first-generation students (parents without a bachelor's degree).
- About **26%** have parents with no college experience, and **28%** have parents with some college but no degree.

4. Progress Has Been Uneven and Limited

- While gaps have narrowed slightly over decades, significant inequities remain in college access by income, race/ethnicity, and parental education.
 - Economic conditions (e.g., recessions) appear to influence participation rates, especially for lower-income groups.
-

Would you like me to **turn these into a polished executive summary for the report**, or **create a visual infographic summarizing these key points?**

The following prompt attempted to clarify if the Barron's publication had authors versus just the organization as a whole:

You said:

can you find the citation for Barron's Profiles of American Colleges 34th Edition

Copilot said:

Copilot

Here are the complete bibliographic details for **Barron's Profiles of American Colleges, 34th Edition**:

Bibliographic Citation Information

- **Title:** *Profiles of American Colleges*
 - **Edition:** 34th
 - **Author/Editor:** Barron's College Division Staff
 - **Publisher:** Barron's Educational Series
 - **Publication Date:** July 1, 2017
 - **ISBN:** 978-1438010182 (ISBN-10: 1438010184)
 - **Length:** 1,600 pagesamazon+1
-

Suggested Citation Formats

APA

Barron's College Division Staff. (2017). **Profiles of American Colleges** (34th ed.). Hauppauge, NY: Barron's Educational Series. ISBN 978-1438010182.

MLA

Barron's College Division Staff. **Profiles of American Colleges**. 34th ed., Barron's Educational Series, 2017. ISBN 978-1438010182.

Chicago (Author-Date)

Barron's College Division Staff. 2017. **Profiles of American Colleges**. 34th ed. Hauppauge, NY: Barron's Educational Series. ISBN 978-1438010182.

Let me know if you need a citation in another format or additional details!

Would you like me to also provide a ready-to-use citation in **BibTeX** format for academic papers?

Indicator 2 (What types of higher education institutions do students attend?)

The following prompt requested a summary of the Indicator 2 chapter. We determined the response did not correctly summarize the highlights from the chapter:

You said:

Can you summarize several key takeaways to include in the introduction to this chapter located here:
[REDACTED]

Copilot said:

Copilot

Here are several key takeaways you can include in the introduction for this chapter:

Key Takeaways for Introduction

1. **Institutional Level Matters:** Students receiving federal grants are more likely to attend 2-year institutions compared to non-recipients, though most still enroll in 4-year colleges. This highlights persistent differences in access by financial aid status.
2. **Control of Institutions Shows Stability with Gaps:** Public institutions serve the majority of students regardless of grant status, but private non-profits enroll fewer grant recipients, while for-profit institutions enroll a disproportionately high share of grant recipients.

3. **Sector Differences Are Pronounced:** Federal grant recipients are concentrated in for-profit and 2-year institutions, whereas private non-profit 4-year colleges have the lowest share of these students.
 4. **Selectivity and Income Correlation:** Highly selective institutions continue to enroll fewer low-income students, with little progress in reducing stratification. Open-admission and less selective institutions serve more economically diverse populations.
 5. **Competitiveness Widens Access Gaps:** The most competitive institutions have the lowest percentage of federal grant recipients, and the gap between competitive and noncompetitive institutions has grown over time.
 6. **Socioeconomic Status Drives Enrollment Patterns:** Students from higher SES backgrounds are significantly more likely to attend selective institutions, while those from lower SES backgrounds are more likely to attend non-selective colleges or not enroll at all.
 7. **Race/Ethnicity Disparities Persist:** Black and Hispanic students are less likely to enroll in selective institutions and more likely to attend non-selective colleges or not enroll, compared to White and Asian students.
-

Would you like me to **draft a polished introduction paragraph** that incorporates these takeaways in a narrative style for your chapter? Or should I **create a bullet-point summary section** for quick reference?

Indicator 3 (Is cost a barrier to higher education access and completion?)

The following prompt requested a summary and conclusion of the Indicator 3 chapter. Parts of this summary were used in the key takeaways section. The conclusion was revised:

You said:

Can you propose the "key takeaways" and a conclusion paragraph for the following chapter: [REDACTED]

Copilot said:

Here are **proposed Key Takeaways** and a **conclusion paragraph** tailored to the content of the chapter you provided. These are written in the same tone, structure, and analytic style as the rest of the report.

Proposed Key Takeaways

- **College costs have increased far faster than inflation across all institution types.**
Between 1974–75 and 2024–25, average college costs rose 2.5 times after adjusting for inflation, with the

sharpest increases occurring after 1980. Costs at 4-year institutions—both public and private—have increased more rapidly than those at 2-year institutions.

- **The Pell Grant’s purchasing power has eroded substantially over time.**

Although maximum and average Pell Grant awards have risen modestly in inflation-adjusted dollars since the 1970s, these increases have not kept pace with rising college costs. The maximum Pell Grant covered 71% of average costs in 1979–80 but only about 25% in 2024–25.

- **Most Pell recipients now face significant unmet financial need.**

As the Pell Grant covers a shrinking share of costs, low- and middle-income students face increasingly large financial gaps—even after federal, state, and institutional grants are applied.

- **Unmet need has grown sharply for students from the lowest-income families, while the highest-income students often receive more aid than needed.**

In 2020, dependent students in the lowest family-income quartile had an average unmet need of more than \$20,000—over double their unmet need in 1990—whereas students in the highest-income quartile had an average surplus of nearly \$38,000.

- **Financial aid is increasingly subsidizing higher-income students despite greater need among low-income students.**

The distribution of institutional and federal aid—combined with rising costs—results in widening disparities in affordability and access between high- and low-income students.

Proposed Conclusion Paragraph

The evidence across Indicators 3a, 3b, and 3c makes clear that cost remains a significant and growing barrier to higher education access and completion, particularly for low- and middle-income students. While college prices have risen substantially over the past five decades, the Pell Grant—the cornerstone of federal need-based aid—has not kept pace, covering a shrinking fraction of student expenses. As a result, unmet financial need has escalated, especially among students from the lowest-income families, even as the highest-income students increasingly receive more in grants and discounts than is necessary to cover their educational costs. These trends highlight the misalignment between financial aid resources and student need, pointing to a system that inadvertently deepens inequality. Reversing these patterns will require policy solutions that restore the purchasing power of need-based aid, address rising costs, and ensure that financial resources are directed to the students who need them most.

If you'd like, I can also **format these directly into the Word document**, help refine tone, shorten for brevity, or produce alternative versions (e.g., more policy-oriented, more technical, more accessible).

Indicator 4 (How do students in the United States pay for college?)

The following prompt requested a summary of the Indicator 4 chapter. Parts of this summary were used in the key takeaways section:

You said:

For the attached document, can you recommend some key takeaways to include at the beginning of the document: [link to document]

Copilot said:

Copilot

Here are some clear, high-impact **key takeaways** you can place at the beginning of the document. These reflect the major themes and findings in *Indicator 4* and are written to match a concise “executive summary” style:

Key Takeaways

- **Students and families are paying a growing share of college costs.**
Since the 1970s, state and local funding has declined as a share of total higher education spending, shifting more responsibility to students and families.
- **Net prices have risen substantially for all income groups—and gaps by income have widened.**
Students from the lowest-income families face rising net prices even after grant aid, and the difference between what low- and high-income students pay has grown dramatically since 1990.
- **Lower-income students face a disproportionate cost burden.**
By 2020, the average net price equaled **119% of family income** for the lowest-income quartile, compared with **15%** for the highest-income quartile.
- **Student debt has grown to historic levels.**
In 2025, **42.8 million borrowers** held **\$1.7 trillion** in student debt. Debt burdens increasingly affect long-term financial stability and mobility.
- **Borrowing patterns differ significantly by institution type.**
Bachelor’s degree completers at private for-profit institutions borrow at the highest rates and amounts. Although borrowing has leveled off since 2016, average cumulative debt remains high.
- **Racial and ethnic disparities in student debt persist long after graduation.**
Ten years after completing a bachelor’s degree, Black graduates have borrowed far more on average than their White peers, reflecting deeper structural inequities.
- **Overall:** Higher education costs continue to rise, financial burdens fall most heavily on low-income students, and student debt has become a major force shaping economic mobility.

If you'd like, I can also **revise the writing, create a polished executive summary, or design a visual summary page** for the chapter.

Indicator 5 (Do higher education attainment rates and outcomes vary by student characteristics?)

The following prompt requested a summary of the Indicator 5 chapter. Parts of this summary were used in the introduction and conclusion:

You said:

For the attached document, please propose major takeaways that can be drawn from the text as well as a conclusion paragraph: [URL HERE]

Copilot said:

Copilot

Below are proposed major takeaways distilled from the full text of Indicator 5 and a revised concluding paragraph that synthesizes the evidence across all seven sub-indicators. The language is written to be suitable for direct inclusion in the document (e.g., under a "Key Takeaways" section and as a polished chapter conclusion).

Proposed Major Takeaways

Large and persistent income-based gaps in bachelor's attainment remain.

Although bachelor's degree attainment rates have increased across all family income quartiles since 1970, students from the highest-income families continue to earn degrees at far higher rates than those from the lowest-income families. By 2023, young adults from the highest income quartile were nearly four times as likely as those from the lowest quartile to have earned a bachelor's degree by age 24, indicating that long-standing inequality by family income has not closed.

The distribution of bachelor's degrees remains skewed toward higher-income students.

Students from the top two income quartiles consistently account for roughly 70 percent of all bachelor's degrees awarded, while students from the lowest-income quartile receive far fewer degrees than would be expected under an equitable distribution. Progress has largely benefited middle- and upper-income students, with limited redistribution toward the lowest-income group.

Women now earn the majority of bachelor's degrees, reflecting a historic reversal.

Over time, the number of bachelor's degrees awarded to both men and women has grown substantially, but women's attainment has increased at a faster pace. Women now receive a clear majority of bachelor's degrees, representing a structural shift in higher education participation that has persisted since the end of the 20th century.

Completion outcomes are strongly tied to family income and Pell Grant status. Students from higher-income families and non-Pell students are substantially more likely to complete a credential—especially a bachelor’s degree—within four or six years of enrollment. While graduation rates have improved for both Pell and non-Pell students since 2017, the gaps between these groups have remained largely unchanged.

Racial and ethnic disparities in degree attainment have narrowed but not disappeared. The racial and ethnic composition of degree recipients in 2022 more closely reflects the U.S. population than in 1980, particularly at the associate degree level. However, disparities remain at the bachelor’s level, with White and Asian students somewhat overrepresented and Hispanic students underrepresented relative to their share of the college-age population.

First-generation students remain underrepresented among bachelor’s degree recipients. Fewer than half of first-time bachelor’s degrees are awarded to students whose parents did not earn a bachelor’s degree. This indicates that college attainment continues to advantage students from families with prior postsecondary experience.

Economic benefits of a bachelor’s degree are substantial, but income gaps persist after graduation. Bachelor’s degree recipients from all income backgrounds earn significantly more than similarly aged high school graduates; however, graduates from lower-income families earn less, on average, than those from higher-income families even several years after degree completion. Higher education improves earnings for disadvantaged students, but it does not fully eliminate pre-existing income inequalities.

Proposed Conclusion Paragraph

Taken together, the seven indicators in this chapter demonstrate that higher education attainment and outcomes in the United States vary systematically by family income, race and ethnicity, sex, first-generation status, and Pell Grant receipt. While overall levels of educational attainment have risen and some disparities—particularly by sex and race—have narrowed over time, fundamental inequalities by socioeconomic status remain deeply entrenched. Students from higher-income and more educated families continue to be far more likely to earn bachelor’s degrees, complete college on time, and experience stronger early career earnings, even as lower-income and first-generation students make measurable gains. These findings suggest that access to college alone is insufficient to ensure equitable outcomes; rather, structural differences in persistence, completion, and post-college labor market returns continue to shape opportunity. The next indicator will examine the role of college costs and financial barriers in reinforcing or mitigating these disparities, providing further insight into where policy interventions may be most effective.

If you’d like, I can also:

Tighten or shorten these takeaways for a one-page executive summary

Align the tone more closely with prior Indicators editions

Draft “Indicator status” box language that mirrors earlier chapters

Indicator 6 (How do educational attainment rates in the U.S. compare with rates in other countries?)

The following prompted the request for a summary of Indicator 6. The text was rewritten for the publication:

You Said:

What are the key takeaways for this chapter: [REDACTED]? What would you recommend I highlight in the conclusion?

Copilot said:

Copilot

Here you go, Sean — a clean, clear set of **key takeaways** for the chapter *and* a recommended **conclusion you can highlight or paste into the report*. Everything below is based directly on the content you provided. (And if you'd like, I can also rewrite this in a more formal, plain-language, data-focused, or design-ready style.)

Key Takeaways for Indicator 6

(You can drop these directly into the “Key Takeaways” section.)

Overall

The U.S. once ranked among the top OECD countries in degree attainment, but its relative standing has declined over time as other countries have grown their attainment levels more rapidly. Indicators 6

While the U.S. attainment rate continues to increase, many peer nations have surpassed the U.S. in both bachelor’s attainment and growth rates. Indicators 6

Indicator 6a – Bachelor’s Degree (Tertiary Type A) Attainment

The U.S. bachelor’s attainment rate for ages 25–34 rose from 36% (2015) to 42% (2024)—a 23% increase—but this growth rate ranked only 16th of 37 countries.

Countries such as New Zealand, Sweden, Canada, and Norway grew faster and have now surpassed the U.S. in bachelor’s degree attainment.

The U.S. ranking dropped from 2nd (2003) to 19th (2024) among OECD countries.

Within the U.S., state variation rivals international variation—from 28% in NM/WV/NV to 57% in MA. Indicators 6

Indicator 6b – Type A (Bachelor’s) or Type B (Short-Cycle/Associate) Attainment

In 2024, 52% of U.S. adults age 25–34 had completed either a Type A or Type B tertiary credential.

The U.S. ranks 13th out of 38 OECD countries, down from 8th (2003) and 10th (2015).

Many countries now surpass the U.S., including Korea (71%), Canada (69%), and Ireland (66%), reflecting rapid expansion in postsecondary attainment abroad. Indicators 6

Indicator 6c – First-Generation Student Attainment

First-generation students across the OECD complete tertiary degrees at much lower rates, and the U.S. mirrors this pattern.

U.S. attainment rates for first-generation students (36% for USP; 22% for BUS) fall well below top-performing countries such as Korea, Ireland, Spain, and France.

Despite the U.S. overall attainment rate being near the OECD average, first-generation Americans fall significantly behind international peers, highlighting equity gaps. Indicators 6

What to Highlight in the Chapter Conclusion

Here is a polished, high-impact conclusion you can use or adapt:

Recommended Conclusion (Highlight-Ready)

The U.S. continues to make steady gains in college attainment, but its international position has weakened as other countries expand access and credential completion at a faster pace. Although more than half of young adults in the United States now hold a tertiary credential, the nation has fallen from near the top of the OECD rankings to a middle-tier performer on most measures of educational attainment.

At the same time, substantial equity gaps persist, particularly for first-generation students, whose completion rates remain far below those of their peers and below top-performing OECD countries. Taken together, these findings suggest that while progress is occurring, the U.S. faces increasing competitive pressure internationally and continues to struggle with persistent disparities in who attains postsecondary degrees. Strengthening pathways to completion—especially for first-generation students—will be essential for improving both national competitiveness and educational equity.

If you'd like, I can also:

- Rewrite this in a more formal report style
- Cut it down to a 2–3 sentence version
- Expand it with policy implications
- Add design-friendly bullet formatting using Pell colors

Just tell me what you'd prefer!

Indicator 7 (Are there differences in higher education access, attainment, and cost by state?)

The following prompted the request for a summary of Indicator 7. The text was rewritten for the publication:

You said:

What are the key takeaways for this chapter: [REDACTED]. Can you also write a proposed summary for the conclusion of the document?

Copilot said:

Copilot

Here you go, Sean — a clean, concise set of **key takeaways** based directly on the uploaded chapter, along with a **proposed conclusion** you can paste into the document.

Key Takeaways for Indicator 7: Differences in Higher Education Access, Attainment, and Cost by State

1. Access for Low-Income Students Varies Widely Across States

Estimated low-income college participation rates range dramatically—from **7% in Alaska** to **40% in New Jersey**.

Northeast states consistently show **higher participation**, while states with strong non-college job markets (e.g., AK, ID, OK, UT, WY) show **lower rates**.

Access remains **highly inconsistent and dependent on geography**, indicating unequal opportunity.

2. Enrollment Rates of Young Adults (18–24) Differ Greatly

In 2024, enrollment ranged from **19% in Alaska** to **52% in Washington, D.C.**

Some states enroll **half of young adults**, while others enroll **less than one-third**, reinforcing significant state-level disparities.

3. College Costs Show Strong Regional Patterns

Public 4-year tuition, fees, room & board:

Low-cost states: **FL (\$17k), WY (\$18k), UT (\$18k)**

High-cost states: **MA, CT, NJ (all \$32k+)**

Private 4-year costs range from **\$13k (ID)** to **\$78k (MA)**.

2-year public tuition ranges from **\$1,300 (CA)** to **\$7,400 (SD)**.

The **Northeast is consistently the most expensive** region; **Mountain/Plains and Florida** remain the most affordable.

4. State Investment in Need-Based Aid Differs Drastically

The number of state need-based grant recipients as a share of Pell recipients ranges from **0% (AR, MT, OH, WY)** to **97% in Washington**.

Several states provide **little to no need-based support**, while others have **robust systems** that nearly match Pell participation.

5. Educational Attainment Has Grown, but Unevenly Across States

National bachelor's attainment rose from **5% in 1940** to **39% in 2025**.

Some states now exceed **50% bachelor's attainment (MA, MD, NJ)**, while others remain in the **mid-20% range**.

Convergence occurred at the **high school level**, but **divergence** escalated at the **bachelor's level**, worsening geographic inequality.

6. Bachelor's Completion Rates Vary Strongly by State

Six-year completion for first-time bachelor's seekers (2018 cohort) ranges from **31% (AK)** to **79% (DC)**.

A cluster of states in the Northeast and Mid-Atlantic post **high completion rates**, while some Western and Southern states lag.

Overall Finding

Across all dimensions—**access, affordability, financial support, attainment, and completion**—higher education opportunity in the United States is **unequally distributed and strongly influenced by state and region**. Geography continues to be a defining feature of postsecondary outcomes.

Proposed Conclusion Section

Here is a polished, publication-ready conclusion you can paste directly into the document:

Conclusion (Proposed)

Across every indicator examined in this chapter—access, enrollment, affordability, financial aid, attainment, and completion—one central theme emerges: **where a student lives profoundly shapes their educational opportunities and outcomes**. The data show that states differ not only in the cost of attending college but also in the degree to which they provide financial support, expand access for low-income students, and create environments that support persistence and timely completion.

While national attainment levels have risen substantially over the past eight decades, the **gaps between states have widened**, particularly at the bachelor's degree level. Some states have built strong postsecondary ecosystems characterized by robust aid programs, higher enrollment, and high completion rates. Others, often with lower tuition but fewer financial supports, continue to lag behind in participation and degree attainment.

The result is a higher education landscape marked by **significant and persistent geographic inequality**, where opportunity is unevenly distributed and dependent on state policy choices, local economies, and long-term investments in postsecondary systems. Understanding these variations is essential for policymakers and institutions seeking to improve equity and expand educational attainment nationwide. Without targeted efforts to reduce these disparities, the United States will continue to see uneven progress that reinforces existing social and economic divides.

If you'd like, I can also: rewrite the conclusion in a shorter or more formal style
generate a visual summary, executive summary, or talking points
create a slide-ready summary for presentations

Just let me know!

Sources

You said:

Can you format those key takeaways so that they use the same style as in the bullets in the document?

Copilot said:

Copilot

Absolutely — here are the **key takeaways rewritten in the same style and formatting as the bullet points used in the document** (bold heading, colored title text, and short descriptive text).

I've kept your original color hex **#1D428A** consistent with the file.

Key Takeaways (Reformatted in Document Style)

Takeaway 1: College access varies substantially by state, with low-income participation rates ranging from 7% in Alaska to 40% in New Jersey, and generally higher rates in Northeastern states, indicating significant geographic inequality in opportunity.

Takeaway 2: Enrollment, affordability, and financial support differ widely across states. College costs are notably highest in the Northeast and lowest in Florida and the Mountain/Plains region; meanwhile, state need-based aid ranges from no support in some states to nearly matching Pell participation in others.

Takeaway 3: Educational attainment and completion levels have risen nationally but diverged across states, with bachelor's degree attainment varying from the mid-20% range in some states to over 50% in others, and 6-year completion rates ranging from 31% to 79% across the country.

If you'd like, I can also integrate these directly into the document or match spacing and indentation exactly.

Conclusion

The following prompted the request for a summary to conclude the paper. Some parts of this response were quoted in the publication:

Can you review and summarize this executive summary and make recommendations for how I should draft the conclusion to this publication? I am thinking that it should be no more than one page in order to tie things up: [REDACTED]. The other document to reference in progress are these chapters which have been approved for release: [REDACTED]

Copilot said:

Copilot

Below is a clear, actionable summary **and** tailored recommendations for crafting a strong one-page conclusion for your publication.

(References cited from: Executive Summary.docx)Executive Summary.docx

Concise Review & Synthesis of the Executive Summary

The executive summary establishes **equity**—not equality—as the central framework guiding the *Indicators of Higher Education Equity in the United States, 2026*. Equity is defined as *fairness through differentiated support* rather than equal resource distribution. The Pell Grant example effectively illustrates why equal distribution of aid is not fair or effective.

The summary highlights three overarching findings:

1. Long-Term National Progress

The U.S. substantially expanded higher education access and attainment over the last century.

Attainment is historically high relative to earlier decades.

2. Persistent and Widening Inequities

Gaps by **income**, **race/ethnicity**, and **first-generation status** remain profound.

While participation has risen for all groups, it has not risen evenly.

Example: a **32-point income gap** persists in college-going rates.

3. Stagnation and Global Decline

U.S. progress has slowed relative to peer nations.

Example: U.S. tertiary attainment is **36%**, below the **44% OECD average**.

Cost barriers are intensifying:

Low-income students face ~\$20,000 unmet need; high-income students show a \$38,000 surplus.

Summaries of Each Research Question

The executive summary then synthesizes major findings for the full indicator set, including:

Who enrolls? Access gaps remain steep by income/race/parent education.

Where do students enroll? Highly selective institutions enroll the fewest low-income, Black, and Hispanic students.

Is cost a barrier? Costs have outpaced inflation $\times 2.5$; unmet need is highest for low-income families.

How do students pay? Students & families pay growing proportions; debt remains widespread.

Do attainment outcomes vary? Gaps persist across all demographics; women now earn most bachelor's degrees.

How does the U.S. compare internationally? U.S. attainment growth lags peers.

Do patterns vary by state? Yes—state differences are historically large and growing.

Recommendations for Drafting a Strong One-Page Conclusion

Your conclusion should *not* repeat the executive summary or chapter summaries. Instead, it should:

A. Reconnect to the Purpose of the Report

Reaffirm:

This is the *10th edition*—a longitudinal resource for understanding equity.

The aim is to illuminate where opportunity is expanding and where it is not.

Suggested framing:

“This decade of data shows both the enormous promise of higher education as an engine of opportunity and the persistent inequities that prevent that promise from being realized for all.”

B. Present a High-Level Integrative Insight

Across all chapters, a few cross-cutting themes clearly emerge:

1. Progress exists, but it is uneven.

Every indicator shows gains, but rarely gains that close gaps.

2. Income is the strongest and most consistent predictor of access and attainment.

Income interacts with race, gender, geography, and first-generation status.

3. Costs—and the inadequacy of aid—now represent the *central barrier* to equitable opportunity.

4. State and institutional variation is widening.

Where students live and where they enroll are increasingly determinative.

These cross-domain themes should anchor the conclusion.

C. Highlight the Stakes for Students *and* Society

You have ample evidence throughout the chapters that higher education:

Increases lifetime income

Reduces social-safety-net utilization

Lowers incarceration risk

Improves health and life expectancy

These concrete societal benefits should be referenced briefly to reinforce why equity matters beyond moral imperative.

D. Look Forward: What Needs to Happen Next?

Your conclusion shouldn't prescribe specific policy, but it *should*:

1. Emphasize the Need for Targeted, Equity-Driven Interventions

Because:

Interventions must account for the real and widening gaps.

Equal treatment will not correct unequal conditions.

2. Note the Limitations of the Current Aid and Cost Structure

Especially:

Pell Grant's declining purchasing power

Rising unmet need

State-level disinvestment or structural differences

3. Underscore the Importance of Sustained Measurement

Given this is the 10th edition, you can highlight:

The value of continued data transparency

The need for consistent, longitudinal indicators

The importance of monitoring as demographics, labor markets, and policies evolve

E. End with a Strong, Forward-Looking Call to Action

Aim for a closing sentence that:

Is aspirational but grounded in evidence

Reinforces fairness through equity as the guiding principle

Acknowledges that while the U.S. has made progress, the work is unfinished

Invites policymakers, institutions, and the public to act

Example tone (not text):

"Achieving equity in higher education is not merely a policy goal—it is a national imperative requiring sustained commitment, targeted investment, and a shared belief that every student deserves a fair opportunity to thrive."

Proposed One-Page Conclusion Outline (You Can Use Directly)

Here is a concise structure you can follow to fill one page beautifully:

Conclusion (Approx. 1 Page)

Paragraph 1 – Reaffirm the Purpose

Summarize the report’s decade-long role as a national equity barometer and restate equity as fairness—not sameness—in opportunity distribution.

Paragraph 2 – Synthesize Major Cross-Cutting Findings

Integrate insights across all indicators:

Progress but persistent and predictable gaps

Income as the dominant predictor across access, enrollment, and attainment

Rising costs and inadequate aid as systemic barriers

State and institutional variation reinforcing inequity

Slowing national gains and declining international standing

Paragraph 3 – Emphasize the Stakes

Briefly reiterate how higher education benefits individuals and society and why equity gaps hinder national economic and civic vitality.

Paragraph 4 – The Path Forward

Call for:

Targeted, evidence-based interventions

Policymakers to modernize aid structures

Institutions to strengthen access, affordability, and completion strategies

Continued measurement and commitment to closing gaps

Final Sentence – A Strong Closing Charge

Close with an aspirational statement positioning fairness through equity as essential to the nation's shared future.

If you’d like, I can **draft the full polished one-page conclusion** using this structure and tone—just say the word.

Sources

You said:

Yes take a shot at drafting a conclusion to help me follow the process laid out.

Copilot said:

Copilot

Reasoning completed in 2 steps

Below is a polished, one-page conclusion you can drop into the report. I've followed the structure we outlined and grounded each claim in the approved chapters and the executive summary.

Conclusion

Over ten editions, *Indicators of Higher Education Equity in the United States* has served as a national barometer for how opportunity is extended—and too often constrained—in American higher education. This 2026 edition reaffirms equity as our guiding principle: fairness requires differentiated supports, not equal allocation, because students begin their journeys with unequal resources and information. The Pell Grant example is instructive: distributing aid equally would be inefficient and ineffective at advancing access for students with the greatest financial need. Equitable policy targets the barriers that matter most..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)

Across indicators and chapters, four cross-cutting findings emerge. **First, progress is real but uneven.** Access and attainment have risen over the long run; yet the gains have not accrued uniformly by income, race/ethnicity, or first-generation status. Income gaps in college going remain large (e.g., a 32-point difference between students in the lowest and highest income quartiles), and racial/ethnic gaps persist in both access and completion..docx&action=default&mobileredirect=true) **Second, income is the most consistent predictor.** Whether examining who enrolls, where students enroll, or who completes, income—and its interaction with race and first-generation status—systematically shapes opportunity and outcomes..docx&action=default&mobileredirect=true) **Third, costs are the central barrier.** Net prices have risen faster than inflation, Pell purchasing power has not kept pace, and unmet need among low-income students has grown even as many high-income families experience a surplus after accounting for aid..docx&action=default&mobileredirect=true) **Fourth, variation by state and sector is widening.** Selective institutions enroll disproportionately fewer Pell recipients; open-access colleges shoulder a larger share of lower-income and first-generation students while operating with fewer instructional resources per student; and states differ markedly in both prices and attainment..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)+1Indicators - Compiled (renumbered)Indicators - Compiled (renumbered)Indicators - Compiled (renumbered)+1

The stakes are high for students and for the nation. When more students earn postsecondary credentials, earnings rise across the life course, social-safety-net dependence falls, incarceration is less likely, and health and longevity improve. These benefits extend beyond individual lives to taxpayers and communities, underscoring that equitable opportunity is not simply a moral imperative—it is a pragmatic economic and civic necessity..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)

Looking ahead, this report points to **four priorities** for action:

Target resources where gaps are largest. Equal treatment will not close unequal gaps. Interventions should be calibrated to need, with a focus on students who are low-income, first-generation, and from underserved racial/ethnic groups..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)+1

Modernize affordability. Reinforce grant aid so that the lowest-income students face manageable net prices and reduced unmet need; align institutional and state policies to curb price growth that outstrips aid..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)

Enhance access to high-value institutions and programs. Expand evidence-based admissions, advising, and transfer pathways that enable talented students from all backgrounds to enter and succeed at selective institutions and in programs with strong completion and earnings outcomes..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)

Sustain transparent, longitudinal measurement. The power of these indicators lies in consistency over time and comparability across groups, institutions, and states. Continued investment in data and public reporting is essential for diagnosing problems and tracking progress..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)

Finally, the United States has both urgency and agency. Internationally, our relative standing has slipped even as other countries continue to expand degree attainment; domestically, wide differences by state and sector show that improvement is possible and already happening in some places. What we measure, we can change. If policymakers, institutions, and communities commit to fairness through equity—aligning resources to need, modernizing affordability, opening doors to selective and high-value opportunities, and holding ourselves accountable through data—the next decade of *Indicators* can document not only progress, but the narrowing of gaps that have proven stubborn for too long. That is the promise—and the work—before us..docx&action=default&mobileredirect=true)Indicators - Compiled (renumbered)+1

If you want, I can also tailor this to a strict **≤300-word** version for print layout or craft an **executive voice** variant for a letter from the president/CEO.

References

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