



How Iowa and Its Citizens Benefit from Higher Education

Iowa College Aid's motto is "College Changes Everything." With that motto in mind, this report documents postsecondary education's value to the state of Iowa by focusing on how individuals benefit from continuing their education beyond high school and how society benefits from an educated citizenry.

INTRODUCTION

Future Ready Iowa is working to ensure that 70 percent of Iowans have education or training beyond high school by 2025. Currently, as Figure 1 demonstrates, roughly 65 percent of Iowans between the ages of 25 and 64 have some college education, which is close to the national average of 62 percent.¹ Yet, the share of Iowans with at least an associate degree is approximately 43 percent, compared to 41 percent at the national level. The feasibility of and progress toward the 70 percent goal has been well documented in several state of Iowa reports, with the general consensus being that improvement in education levels will result in a higher quality of life for Iowans. While these reports put strong emphasis on the state's current education attainment levels and how they can grow, there is little discussion of what the benefits are for Iowa and its citizenry. This report attempts to shed more light on this issue.

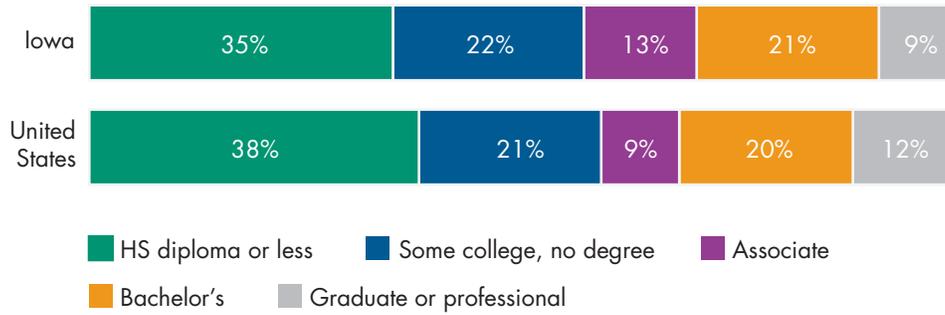
The findings from this report are organized according to the Institute for Higher Education Policy's Array of Higher Education Benefits displayed in Figure 2, which demonstrates how individuals and society benefit from the investment in higher education.² The private benefits are those that accrue to the individuals and their families after obtaining a postsecondary degree, whereas the public benefits, also known as externalities, are the benefits that accrue to the rest of society. Traditionally, the benefits of a postsecondary

degree are measured in monetary (economic) amounts, such as earnings or tax amounts, or aspects related to employability.³ However, the benefits can extend to the nonmonetary (social) aspects that are related to health, engaged citizenry, and life satisfaction.

This report uses data from the U.S. Census Bureau's American Community Survey (ACS) and the Bureau of Labor Statistics' Current Population Survey.⁴ When possible, we examine the most recent data, with primary focus on Iowans who are between the ages of 25 and 64. All dollar amounts are adjusted for inflation at 2018 values. Because of data limitations, not all aspects of the Array of Higher Education Benefits can be covered in this report. However, reports examining benefits at the national level offer examples of how a postsecondary education can provide enrichment across all indicators.⁵

It is important to note that this report examines observed correlations and does not investigate the causal impact of obtaining a postsecondary education. For example, a positive correlation between education and earnings does not imply that education causes an increase in earnings. Unobserved factors, such as higher motivation or ability levels, could be attributed to college attendance and greater earnings potential. Rather, this report illuminates the association between education level and various outcomes.

Figure 1: Educational Attainment



Note: Sample consists of individuals between the ages of 25 and 64. Percentages may not add up to 100 due to rounding.

Source: U.S. Census, 2017 ACS 5 year estimates.

Figure 2: IHEP’s Array of Higher Education Benefits

	Public	Private
Economic	<ul style="list-style-type: none"> • Increased tax revenues • Greater productivity • Increased consumption • Increased workforce flexibility • Decreased reliance on government financial support 	<ul style="list-style-type: none"> • Higher salaries and benefits • Employment • Higher savings levels • Improved working conditions • Personal/professional mobility
Social	<ul style="list-style-type: none"> • Reduced crime rates • Increased charitable giving/community service • Increased quality of civic life • Social cohesion/appreciation of diversity • Improved ability to adapt to and use technology 	<ul style="list-style-type: none"> • Improved health/life expectancy • Improved quality of life for offspring • Better consumer decision making • Increased personal status • More hobbies, leisure activities

Source: Institute for Higher Education Policy (1998; 2005).

PRIVATE ECONOMIC BENEFITS OF HIGHER EDUCATION

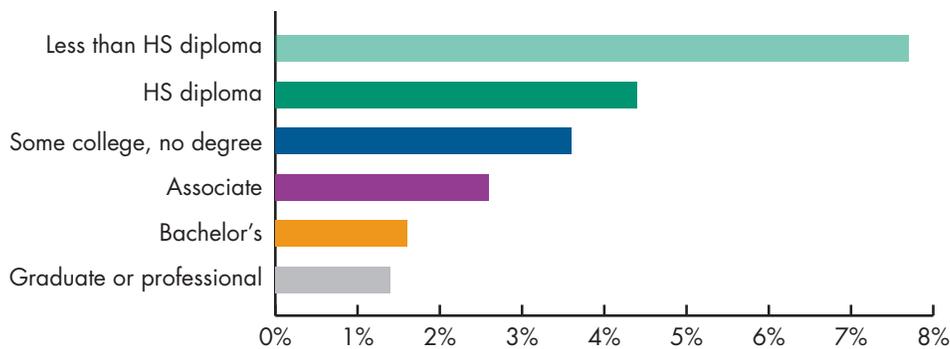
Private economic benefits focus on the benefits that accrue to individuals themselves and are associated with labor market participation. Typically, this is the most commonly discussed category in support of promoting individuals to go to college, as the evidence suggests higher education leads to higher salaries and improved working conditions.

Iowa has one of the lowest unemployment rates in the United States. For 2018, Iowa’s average unemployment rate was 2.6 percent, which was 1.4 percentage points lower than the national average of 4 percent. However,

across education levels, there are significant differences in unemployment rates. As Figure 3 demonstrates, the unemployment rate for Iowa residents with only a high school diploma was 4.5 percent, while it was 3 and 2 percent for those with an associate or bachelor’s degree, respectively. Those Iowans with less than a high school diploma were 4 times more likely to be unemployed than bachelor’s degree recipients.

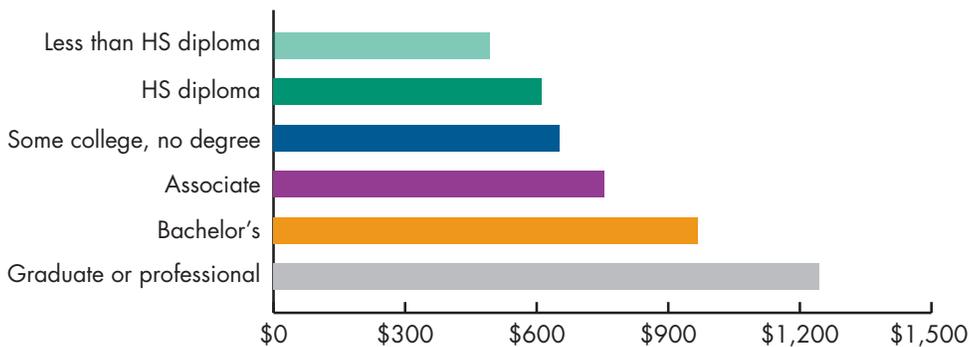
Iowans who go to college are not only more likely to be employed, but also have higher earnings. Figure 4 displays how median weekly earnings for Iowans with

Figure 3: Unemployment Rates in Iowa



Note: Sample consists of Iowans between the ages of 25 and 64.
Source: U.S. Census, 2017 ACS 5 year estimates.

Figure 4: Median Weekly Earnings in Iowa



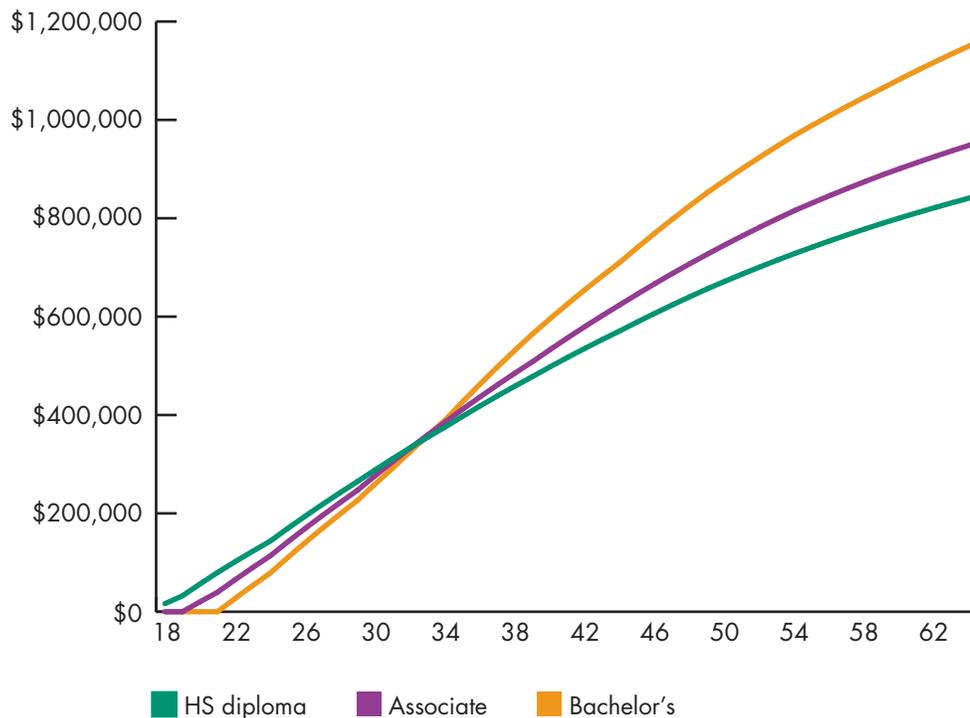
Note: Sample consists of Iowans between the ages of 25 and 64 and who are in the labor force.
Source: U.S. Census, 2017 ACS 5 year estimates.

an associate degree were \$139 (23 percent) higher than those of high school graduates. For bachelor’s degree recipients, the earnings premium is greater —median earnings were \$355 (58 percent) higher than high school graduates and almost twice as much as individuals with less than a high school diploma.

According to the Institute for College Access & Success’ Student Loan Debt Project, in 2017, Iowa had the 9th-highest share in the nation of college graduates with student loan debt and the 20th-highest average loan debt amount.⁶ There has been growing concern in Iowa that individuals will struggle to repay their loans, even after graduating from college.⁷ This notion can lead to speculation that the incurred debt makes college an unworthy investment.

However, evidence suggests that incurring debt can still allow Iowans to receive a return on their higher education investment. Figure 5 displays an individual’s cumulative full-time earnings net of forgone earnings and student loan payments over a 10-year period.⁸ Iowans who enroll at age 18 and graduate from a four-year or two-year institution can be expected to earn more than high school graduates by their early 30s. For example, the median cumulative net earnings for individuals with an associate degree exceed those with a high school diploma at 32 years of age, whereas bachelor’s degree recipients’ earnings exceed high school graduates’ at 33 years of age. Comparing the cumulative earnings of associate and bachelor’s degree recipients, bachelor’s degree recipients’ cumulative earnings exceed associates’ at 34 years of age, which

Figure 5: Cumulative Earnings Net of Forgone Earnings and Student Loan Repayment in Iowa



Note: Adapted from College Board’s (2016) Education Pays. Figure uses median earnings for Iowans who are employed full-time for the full year and excludes individuals who earned graduate or professional degrees. Student loan payments are calculated on a 10-year repayment schedule with a 5% interest rate. Earnings and loan payments are discounted at a 3% annual rate beginning at age 18. Source: U.S. Census, 2017 ACS 5 year estimates. Iowa College Aid, 2018 Annual Survey of Financial Aid.

suggests that an extra two years of higher education investment is recouped after 12 years of employment.

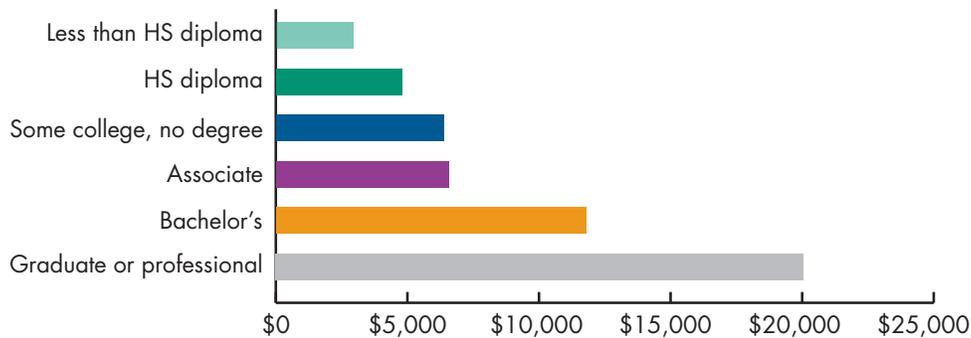
Earnings are not the only form of compensation or benefit. Being employed also brings a wide range of employment benefits, such as health insurance and the ability to participate in employer-provided retirement programs. Using ACS data, we found, among individuals in the Iowa labor force with a high school diploma, 71 percent had health care coverage through their employer. But among individuals with an associate degree or higher, the share increased to over 80 percent.

This gap in employer-provided benefits is also apparent in retirement programs. For Iowans with a high school diploma, roughly 43 percent had a retirement plan through their employer, compared to the 55 percent who had at least an associate degree. The ability to participate in this fringe benefit is apparent among

Iowans who are of retirement age. The average annual retirement income for Iowans aged 62 to 79 was a little less than \$5,000 for high school diploma holders. For those with an associate or bachelor's degree, the average retirement income was roughly \$7,000 and \$12,000, respectively (See Figure 6). These figures demonstrate how the lifetime earnings premium displayed in Figure 5 continues in retirement age across college attainment levels.

Beyond higher rates of retirement plan participation, Iowans with a postsecondary degree also have higher levels of making and having returns on financial investments. In our analysis of ACS data, we found that the average annual income from assets (such as income from interest and dividends) is roughly 1.4 times greater for Iowans with an associate degree and over 2 times greater for bachelor's degree recipients than for high school graduates without a college degree.

Figure 6: Average Annual Retirement Income in Iowa



Note: Sample consists of Iowans between the ages of 62 and 79.

Source: U.S. Census, 2017 ACS 5 year estimates.

PRIVATE SOCIAL BENEFITS OF HIGHER EDUCATION

Private social benefits focus on individual and group benefits not directly related to participation in the labor market. Rather, the focus is on the nonmonetary benefits that stem from college attendance.

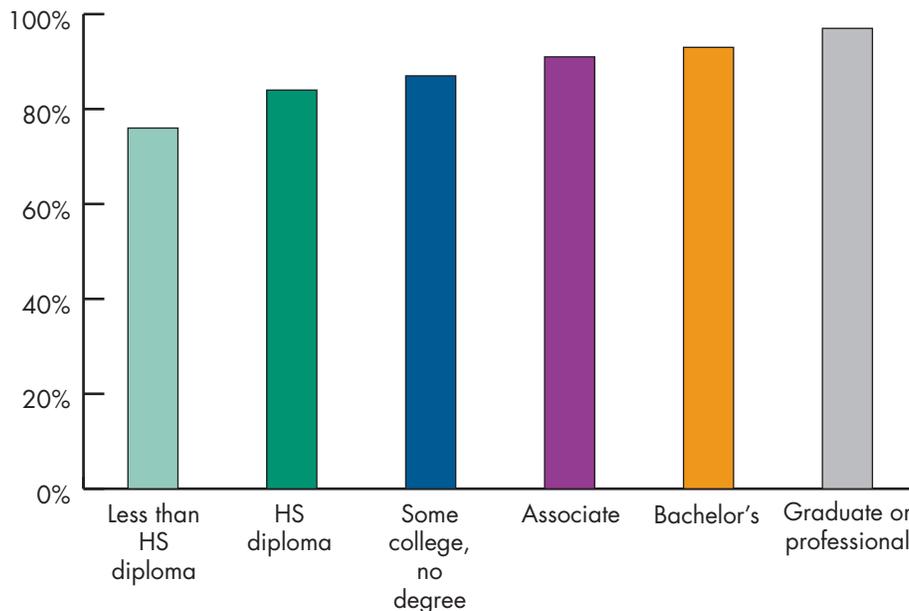
One measurable indicator of private social benefits is individual health (see Figure 7). Among Iowans who never attended college, less than 85 percent self-reported their health as good, very good, or excellent. For Iowans who did attend college, 87 percent of individuals with some college but no degree reported having good health, compared to 91 percent for associate, 93 percent for bachelor’s, and 97 percent for individuals with a graduate or professional degree.

The exact reason for a strong association between health and education level is unclear. Previous studies have suggested that education helps to foster more responsible health-related decisions and behaviors.⁹ For

example, Ma, Pender, and Welch found higher education levels are associated with higher exercise rates.¹⁰ Not smoking is another good example of a healthy behavior. Figure 8 displays how Iowans who have a high school diploma or less are significantly more likely to smoke than Iowans who attended college. With every increase in educational attainment, the smoking rate decreases. Being healthy also has a public economic benefit due to lower demand on insurance claims, which, in turn, allows for a reduction in medical costs that can be passed to other individuals.

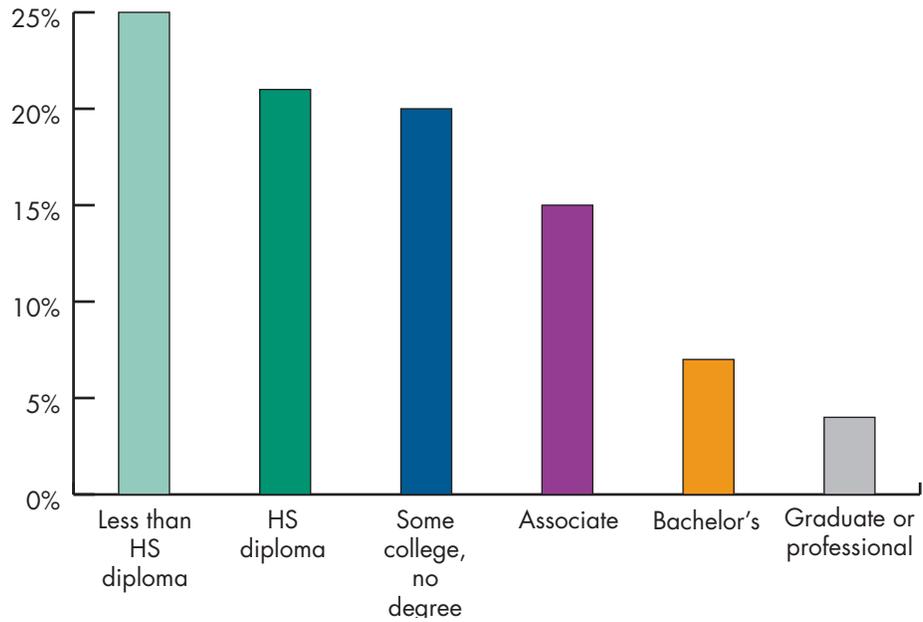
In addition to having a healthy lifestyle, attending college is also correlated with more hobbies and leisure-related activities. As Table 1 demonstrates, college-educated Iowans read a book (outside work or school), attend movies, and visit historical sites or museums more frequently than high school graduates or those with less than a high school degree.

Figure 7: Share of Iowans Reporting Health as Good, Very Good, or Excellent



Note: Sample consists of Iowans who are 25 years of age and older.
 Source: BLS, 2015, 2016, 2017 & 2018 Annual Social and Economic Supplement.

Figure 8: Share of Iowans Smoking



Note: Sample consists of Iowans who are 25 years of age and older.
 Source: BLS, 2015, 2016, 2017 & 2018 Annual Social and Economic Supplement.

Table 1: Participation in Hobby and Leisure Activities

	Less than HS diploma	HS diploma	Some college, no degree	College graduate
Read books	19%	33%	46%	61%
Visited historical sites or museums	9%	20%	28%	42%
Went to the movies	23%	44%	60%	69%

Note: Sample consists of Iowans who are 25 years of age and older. College graduates consist of Iowans whose highest education level is either an associate, bachelor's, or graduate/professional degree.
 Source: BLS, 2012, 2013, and 2015 Public Arts Supplement.

PUBLIC ECONOMIC BENEFITS OF HIGHER EDUCATION

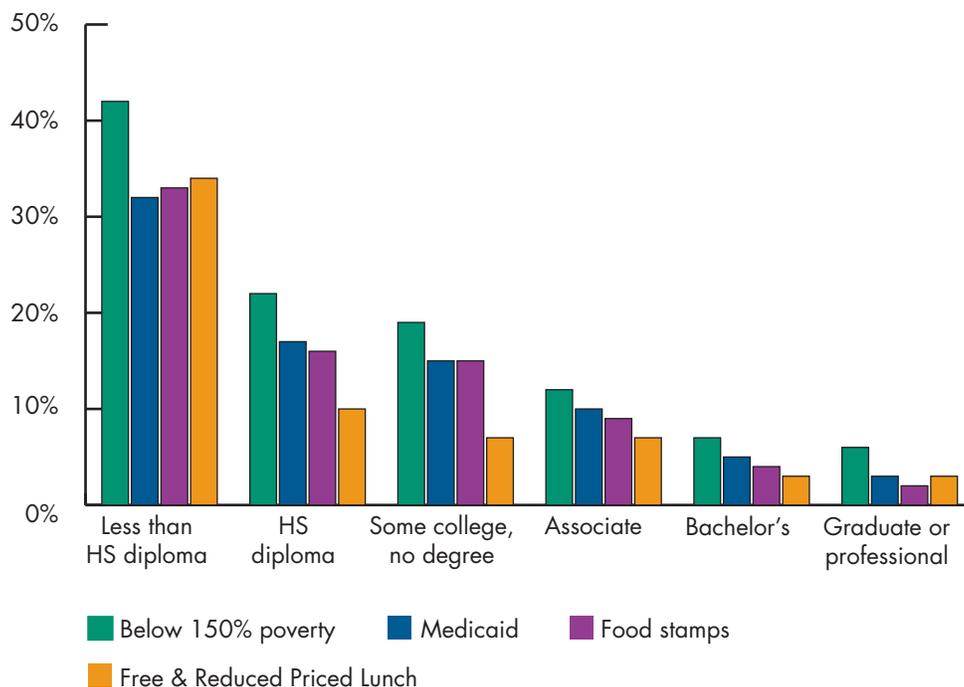
Public economic benefits focus on the fiscal externalities that education provides to society. With a skilled workforce and educated citizenry, there are fewer demands for government-sponsored programs and an increase in tax revenue.

As presented in Figure 9, Iowans with higher education attainment levels are less likely to be in poverty than Iowans who did not attend college. Among Iowans aged 25 to 64 years old, 42 percent of those who did not graduate from high school and 22 percent of high school graduates were below the 150 percent poverty line, compared to 7 percent with a bachelor's degree.

Just as there is an association between education level and poverty, there is a correlation between education and

the use of government welfare programs. Figure 9 further demonstrates that Iowans with a high school diploma or less are more likely to use public assistance programs, such as Medicaid, food stamps, and free and reduced priced lunch programs. For example, roughly 17 percent of high school graduates had health insurance through the Medicaid program. In comparison, 10 percent of associate degree holders and 5 percent of bachelor's recipients participated in Medicaid. Unfortunately, the data do not provide information on the amount of health care paid by Medicaid. Having such information would be beneficial in understanding the estimated cost savings with an educated citizenry. Given that health problems decline with college attainment (as demonstrated in Figure 7), in addition to the share of

Figure 9: Share of Iowans Below Poverty Threshold and Use of Public Social Welfare Programs



Note: Sample consists of Iowans between the ages of 25 and 64.

Source: U.S. Census, 2017 ACS 5 year estimates; Source: BLS, 2015, 2016, 2017 & 2018 Annual Social and Economic Supplement.

Iowans participating in the program, Medicaid costs should be inversely related to educational attainment—as education level increases, Medicaid costs decrease.

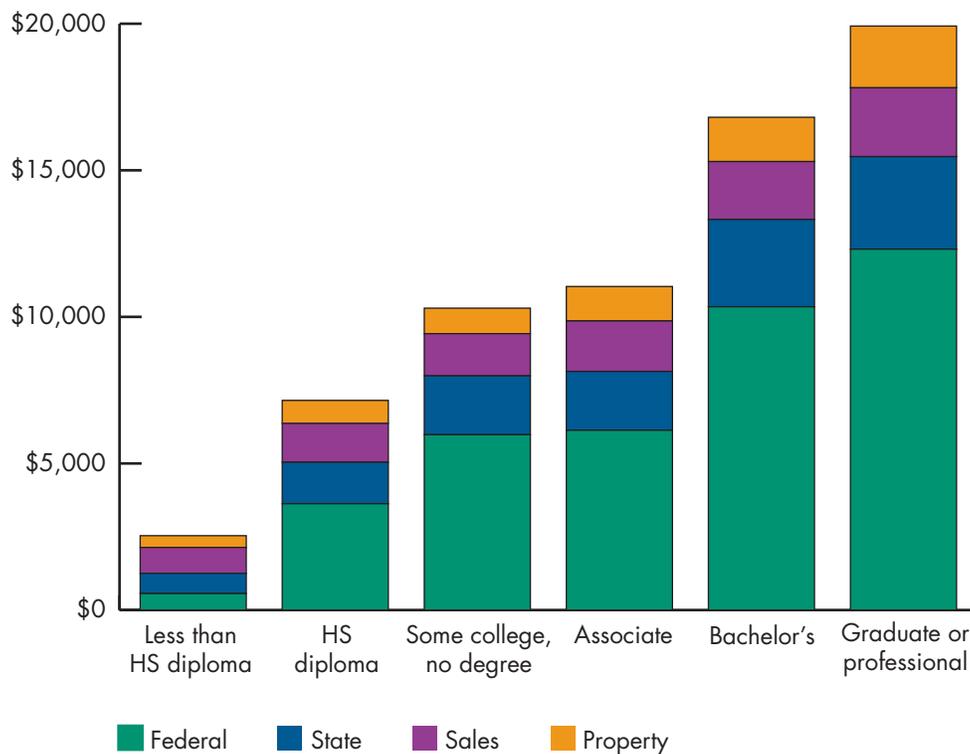
In Figure 4, we demonstrated how college-educated individuals earn more than high school graduates with no college experience. With the increase in earnings, educated workers contribute more to local, state, and federal taxes. The average taxes paid for 2017 are displayed in Figure 10. An Iowan whose highest educational attainment is a high school diploma paid an average of roughly \$7,000 in total taxes. Those with some college but no degree paid about \$3,000 more. The average total tax amount was approximately \$11,000 for associate degrees and almost \$17,000 for bachelor’s degrees.

Both state and federal taxes follow a similar pattern in that the amount grows with educational attainment. State taxes, however, are smaller and the increase not

as pronounced. On average, a high school graduate without a college degree paid roughly \$1,415 and \$3,600 in state and federal taxes, respectively, whereas Iowans with associate degrees paid \$2,000 in state and \$6,000 in federal. The gap is even larger for bachelor’s degree recipients, who paid \$1,500 more in state taxes and almost \$7,000 more in federal taxes than Iowans with just a high school diploma.

The state of Iowa also benefits from the college earnings premium through sales and property taxes. Estimates for local and state sales and property taxes were formulated by matching data on individual earnings with estimates of the average tax burden in Iowa, published in The Institute on Taxation and Economic Policy’s tax report.¹¹ In general, the findings suggest that individuals with higher education levels pay higher sales and property taxes. For example, Iowans with a bachelor’s degree paid over \$1,000 more, on average, than high school graduates without a postsecondary education.¹²

Figure 10: Estimated Taxes in Iowa



Note: Sample consists of Iowans between the ages of 25 and 64.
 Source: U.S. Census, 2017 ACS 5 year estimates; Wiehe, et al (2018).

PUBLIC SOCIAL BENEFITS OF HIGHER EDUCATION

Similar to private social benefits, public social benefits accrue to society but are not directly related to the fiscal or economic effects. The benefits focus on individuals and their political or civic engagement in community activities and affairs.

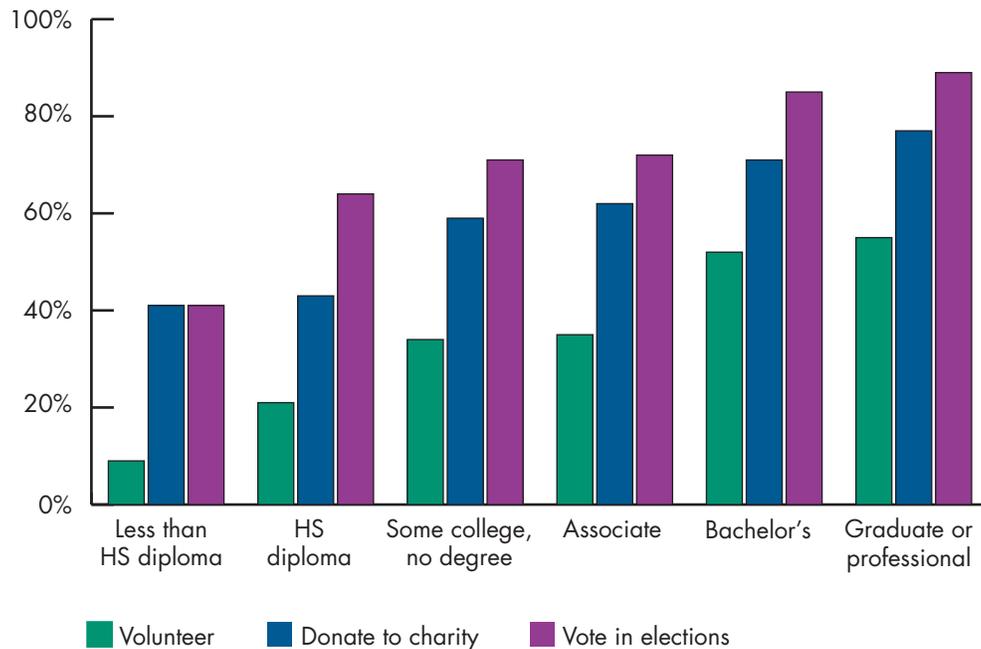
The first column in Figure 11 displays the share of Iowans who reported having volunteered within the year the survey was collected. Because of small sample sizes, we used estimates from the last three years data was collected: 2013, 2014, and 2015. The share of Iowans reporting that they had volunteered increased from just over 21 percent for high school graduates to 35 percent for those with an associate degree to 52 percent for those with a bachelor’s degree.

Figure 11 further inspects Iowans’ community engagement through the rate at which they are likely to donate to a charity or religious organization. Similar

to volunteer rates, the share of Iowans donating to charity increases with educational attainment. A little over 40 percent of high school graduates without a college degree reported making a charity donation. In comparison, the rate was 59 percent for Iowans with some college, no degree; 62 percent for an associate; and 71 percent for a bachelor’s.

A thriving democratic society relies on citizens’ political participation. In our last measure of civic engagement, we examined the share of Iowans who voted during the 2012, 2014, and 2016 November elections. Again, we find that voting is strongly associated with educational attainment. About 65 percent of high school graduates without a college education reported having voted during the November elections. In comparison, the rate was 71 percent for Iowans with some college, no degree; 72 percent for an associate; and 85 percent for a bachelor’s.

Figure 11: Share of Iowans Volunteering, Donating to Charity, and Voting in Elections



Note: Sample consists of Iowans who are 25 years of age and older.

Source: BLS, 2013, 2014, and 2015 Volunteer Supplement; BLS, 2012, 2014, and 2016 Voting Supplement.

CONCLUSION

In her 2019 Condition of the State address, Governor Kim Reynolds stated: “Future Ready Iowa will create an environment where opportunity is unleashed. A place where high-paying new jobs are seamlessly linked with a motivated and highly-skilled workforce.” This rise in a highly-skilled workforce through our state’s postsecondary education system can result in a higher quality of life in Iowa.

This report helps to illuminate the benefits of a postsecondary education and provide indicators on how these benefits could be measured. At the individual level, a postsecondary degree—be it an associate or a

bachelor’s—is associated with not only higher lifetime earnings and lower unemployment rates, but also a range of non-monetary benefits such as being healthy and more engagement in hobbies and leisure activities. But the benefits go beyond the individual. Society benefits through increased tax revenue, a decline in demand and expenditures for social welfare programs, and increased community involvement.

It is true that college changes everything, and not just for the Iowans who obtain a degree—college changes everything for everyone.



Because College Changes Everything

END NOTES

- 1 Estimate on students who have attended college is based on the share of individuals who have at least some college but no degree. One limitation to using ACS and CPS data is that education attainment does not consider individuals who received short- or long-term certificates. These individuals are represented in some college but no degree. Recent estimates from Lumina Foundation's *Stronger Nation* report suggest that share of Iowans with a certificate as their highest education level is roughly 5 percent.
- 2 The Institute for Higher Education Policy (IHEP) (1998). *Reaping the benefits: Defining the public and private value of going to college*. Washington, DC: IHEP; The Institute for Higher Education Policy (IHEP) (2005). *The investment payoff: A 50-state analysis for the public and private benefits of higher education*. Washington, DC: IHEP.
- 3 For the purposes of this report, we use the terms postsecondary education, higher education, and college interchangeably. All of which are to indicate education beyond high school.
- 4 Data is from the Integrated Public Use Microdata Series (IPUMS), available at <https://www.ipums.org/>. Ruggles, S., Flood, S., Goeken, R., Grover, J., Meyer, E., Pacas, J., & Sobek, M. (2019). *IPUMS USA: Version 9.0* [dataset]. Minneapolis, MN: IPUMS. Flood, S., King, M., Rodgers, R., Ruggles, S., & Warren J. (2018). *IPUMS Current Population Survey: Version 6.0* [dataset]. Minneapolis, MN: IPUMS.
- 5 Baum, S., Kurose, C., & Ma, J. (2013). *How college shapes lives: Understanding the issues*. Washington, DC: College Board. Ma, J., Pender, M., & Welch, M. (2016). *Education pays 2016: The benefits of higher education for individuals and society*. Washington, DC: College Board. Trostel, P. (2015). *It's not just the money: The benefits of college education to individuals and to society*. Indianapolis, IN: Lumina Foundation.
- 6 The Institute for College Access & Success (2018). *Student Debt and the Class of 2017*. Oakland, CA: Author. Retrieved at https://ticas.org/sites/default/files/pub_files/classof2017.pdf.
- 7 Bolton, K. (2018, Sept 24). Report: Fewer Iowa university students are graduating with debt—but those who are have a lot. *Des Moines Register*. Retrieved at <https://www.desmoinesregister.com/story/news/education/2018/09/24/iowa-student-loan-debt-state-university-college-fewer-graduating-owe-scholarships-grants-graduates/1410083002/>; Ritter, S. (2018, May 23). Iowa Treasurer: Student loan debt hurts state's economy. *Quad-City Times*. Retrieved at https://qctimes.com/business/iowa-treasurer-student-loan-debt-hurts-state-s-economy/article_cb01dd4f-edf5-5966-817a-089f6ffb2032.html.
- 8 Student loan debt comes from Iowa College Aid's 2018 Annual Survey of Financial Aid and was calculated using the weighted median debt among graduating borrowers in 2017. The median debt at 2-yr public institutions was \$13,588 and \$29,099 at 4-year public and private non-profit institutions.
- 9 Cutler, D., & Lleras-Muney, A. (2010). Understanding differences in health behaviors by education. *Journal of Health Economics*, 29(1), 1-28.
- 10 Ma, J., Pender, M., & Welch, M. (2016). *Education pays 2016: The benefits of higher education for individuals and society*. Washington, DC: College Board.
- 11 Wiehe, M., Davis, A., Davis, C., Gardner, M., Gee, L., & Grundman, D. (2018). *Who pays? A distributional analysis of the tax systems in all 50 states, 6th edition*. Washington, DC: The Institute on Taxation & Economic Policy.
- 12 Property tax estimates are based on earnings for home owners, rather than property values. That said, assumed local revenue from property taxes should be treated as lower bound estimates as individuals who have a postsecondary degree are more likely to be homeowners. For example, in 2017, roughly 69 percent of Iowans with a high school diploma or less owned a house, compared to the 81 percent of Iowans with an associate degree or higher. Estimate is based on Iowans who are between the 25 to 64 ages and calculated using ACS 2017 5 year sample.

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