

Indiana's Evolving Labor Market

HOW THE PANDEMIC HAS
ACCELERATED MISALIGNMENT IN
TALENT SUPPLY AND DEMAND





Table of Contents

01 OVERVIEW

01 KEY FINDINGS

03 INTRODUCTION

04 TALENT DEMAND IN INDIANA

10 TALENT SUPPLY IN INDIANA

21 SUPPLY & DEMAND ALIGNMENT

27 KEY RECOMMENDATIONS

32 APPENDIX

36 GLOSSARY

Overview

This report, *Indiana's Evolving Labor Market: How the Pandemic has Accelerated Misalignment in Talent Supply and Demand*, is the latest in a series of reports intended to capture major changes in the supply and demand for talent in Indiana and Central Indiana (Indianapolis-Carmel-Anderson MSA). This report, compiled by Ascend Indiana and EmployIndy, aims to thoroughly examine the short- and long-term impacts of the Covid-19 pandemic statewide and locally. The report's scope reflects the partners' shared priorities to better align talent supply with employer demand and close gaps in education and workforce readiness between racial, ethnic, and socio-economic groups, as well as gender. For talent supply, the report analyzes outcomes within Indiana's education to workforce pipeline, including secondary, postsecondary, work-based learning, and job training, continuing through the current workforce. For talent demand, the report examines employment, wage, and job posting trends and post-pandemic projections in occupations and industries. Importantly, the report provides additional insight into racial and gender disparities occurring across the education to work continuum. These various points of analysis allow us to identify critical areas of misalignment and outline improvement opportunities through education and training programs and public policy.

This report builds from prior reports and collaborative research efforts between Ascend Indiana and EmployIndy to provide a comprehensive perspective on labor market trends and data visualization tools for detailed analysis. The breadth of analysis and level of depth made available in this report reflects the significant changes brought on and, in many cases, accelerated by the pandemic. It is our hope that stakeholders will use this report to identify labor market gaps and pursue solutions leading to better economic outcomes and opportunities for Indiana's current and future workforce.

Readers can access and engage with interactive data visualizations used to inform the report at this link: [Indiana's Evolving Labor Market Report and Visual Summary](#).

Key Findings

The Covid-19 pandemic upended home and work life globally, including here in Indiana. Impacts felt during the pandemic varied significantly by industry and occupation, as well as by race/ethnicity, gender, and income. This is likely to be the case with longer-term impacts as well.¹ At the peak of the public health crisis, lock-down orders and safety protocols prevented work in industries and occupations requiring high levels of person-to-person contact. With pandemic restrictions easing over time, evidence began to accumulate indicating a vastly accelerated and permanent shift toward more highly skilled, highly educated workers coupled with alarming declines in postsecondary enrollment by Indiana residents. Of the multiple points of labor market misalignment found in the analysis, the following takeaways were most prominent.

The Covid-19 pandemic rapidly accelerated demand for degreed talent and slowed demand for non-degreed talent.

The pandemic provided a clear turning point for job growth. From 2011 through 2019, most new jobs in Indiana required a high school diploma or less. Due to the disproportionate impact of the pandemic, prior year gains in these jobs were nearly erased. Postsecondary-level jobs that were minimally impacted in

¹All future year projections used in this report, including web-based interactive data visualizations, are derived from Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

2020 now account for a larger share of job growth, particularly bachelor's-level jobs. The strong long-term growth rates projected for jobs requiring higher education levels suggest this pattern will continue going forward. These changes are likely to accelerate rising income inequality by leaving fewer opportunities for non-degreed individuals to attain good paying jobs while increasing the earning potential for individuals with postsecondary credentials.

Too few high school students are pursuing postsecondary education, persisting, and graduating with a degree.

Postsecondary enrollment rates once stood at 65% of Indiana high school graduates but declined to 59% by 2019 and hit a new low in 2020 at 53%.² These trends are especially worrisome for Black and Hispanic/Latino students, who experienced the sharpest 2020 postsecondary enrollment declines as the pandemic set in. Also concerning is the ongoing decline in male postsecondary enrollment. In 2020, only 46% of males enrolled in postsecondary education after high school graduation compared to 60% of women. Continued decline in the share of Indiana high school graduates who enroll in postsecondary education after graduation jeopardizes economic well-being for both future workers and the state as a whole.

Equity gaps in postsecondary education reflect those found in the workforce.

Postsecondary outcomes diverge significantly by race/ethnicity and gender. Gaps in persistence and completion rates for Black students are largely unchanged over time.³ There are also significant differences between racial/ethnic and gender groups in the degree levels and degree programs pursued in higher education. This is particularly true for Black and Hispanic/Latino students, who are more likely to graduate with sub-bachelor's degrees and less likely to pursue STEM degrees in comparison to other demographic groups. These disparities carry over to workforce outcomes where people of color are underrepresented in high paying, fast growing careers that drive Indiana's economy.

In Marion County, post-pandemic demand has shifted increasingly toward workers with postsecondary education and degrees.

Post-pandemic job projections for Marion County indicate continued growth in jobs requiring bachelor's or higher degree levels, but a notable decline in jobs requiring a high school diploma or less. The overall number of jobs requiring no postsecondary credential in Marion County are not projected to rebound from pandemic lows in 2020, which stands in stark contrast to statewide and Central Indiana positive growth projections. The misalignment between job growth and educational attainment in Marion County will likely present significant short- and long-term challenges associated with deepening poverty levels.

Indiana does not collect sufficient data needed to assess work-based learning demand, program outcomes, and quality.

Quality work-based learning programs support career readiness and workforce alignment. There is currently very little data available to measure work-based learning activity and outcomes. Metrics are needed to track student progression, success, and long-term impact to inform program expansion and work-based learning policies.

² Indiana Commission for Higher Education. College Readiness Report 2022. See: [2022_College_Readiness_Report_06_20_2022.pdf](#)

³ Indiana Commission for Higher Education. College Completion Report 2021. See: [2021_College_Completion_Report_06_23_2021_Statewide.pdf \(in.gov\)](#). Note: For the 2014 high school graduate cohort (most recent available) the second-year persistence rate for Black or African American students was 68.2% compared to 79.9% for all students and the six year completion rate at any campus or degree level for Black or African American students was 37.8% compared to 63.6% for all students.

Introduction

The Covid-19 pandemic generated volatile labor market conditions with long-term implications for current and future workers. In April 2020, Indiana reported its highest unemployment rate since 1976 at 16.5% and, not long after, reported its lowest unemployment rate at 1.5% in December 2021.⁴ The impact of the pandemic was not experienced evenly across Indiana's workforce. In particular, workers of color and those in low-income jobs were disproportionately impacted by Covid-19 disruptions.⁵ It's also becoming clear that the long-term recovery will favor certain segments of the labor force over others, specifically those workers who are educated and trained to fill high growth 21st century jobs.

Black or African Americans and Hispanic or Latinos were disproportionately impacted by the pandemic.

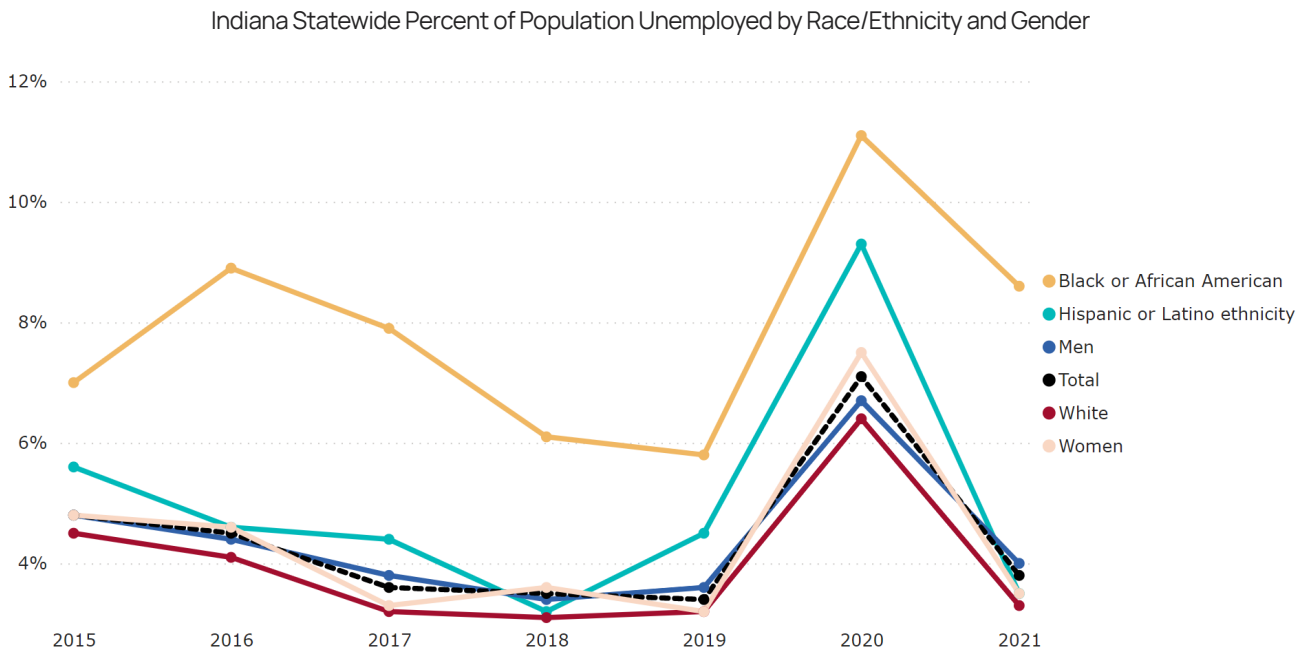


Figure 1. Note: The percentages measure unemployment against Indiana's non-institutionalized civilian population. For details on BLS methodology see: BLS Definitions - [Labor Force Participation](#).

Source: BLS's Local Area Unemployment Statistics (see: <https://www.bls.gov/lau/ex14tables.htm>).

Indiana's education to work pipeline is more important in the post-pandemic economy than ever. Since the summer of 2018, monthly hires are generally flat or slightly declining, while monthly job postings have more than doubled.⁶ Simply put, employers are increasingly struggling to find enough qualified workers to fill open jobs, particularly individuals with postsecondary credentials. Current projections indicate employer demand for talent will continue to increase over the next decade. To meet the growing talent needs of employers, there must be dramatic increases in the flow of qualified talent to new or unfilled jobs. These future workers will need to be properly trained and educated for high-growth jobs and others will need to pursue transitional opportunities from those occupations in decline.

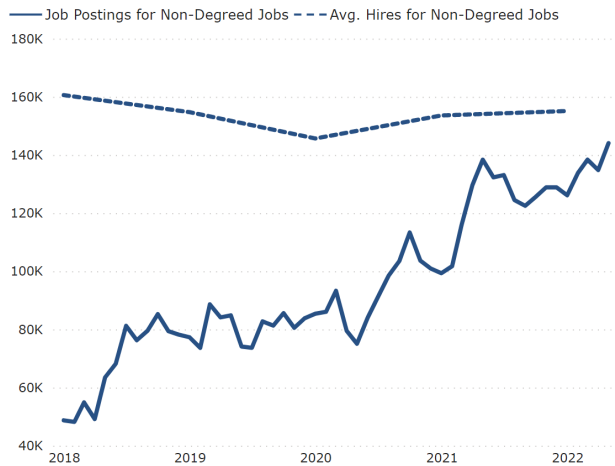
⁴ Data produced by STATS Indiana on 6/7/2022 4:23:08 PM using Bureau of Labor Statistics data

⁵ Center on Budget and Policy Priorities. [Tracking the COVID-19 Economy's Effects on Food, Housing, and Employment Hardships](#)

⁶ Lightcast™, www.economicmodeling.com, 2022. Release 2022.2

Employers are increasingly struggling to find qualified workers.

Non-Degreed Job Postings and Avg. Monthly Hires in Indiana



Degreed Job Postings and Avg. Monthly Hires in Indiana

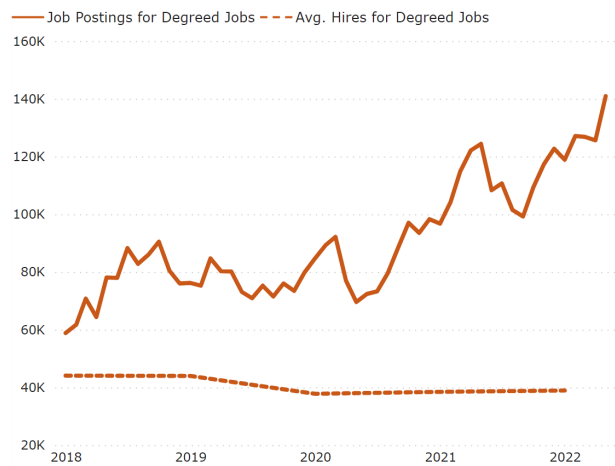


Figure 2. Note: Indiana statewide. Non-degreed jobs include jobs requiring no degree, a high school diploma, or some college but no degree. Degreed jobs include postsecondary non-degree award, associates, bachelor's, master's, and doctorate.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2022.2

Talent Demand in Indiana

Job market disruptions brought on by the pandemic were sudden and significant. As employers transitioned through the pandemic, hiring and job posting activity suggests an accelerated shift to degreed talent. During the pandemic, workers employed in jobs requiring lower levels of education experienced far greater job loss than workers in jobs requiring postsecondary credentials. As public health restrictions eased over time, employers' talent needs appear to have taken on a more permanent shift. The most recognizable change occurred in greater levels of education and training sought by employers; and forward-looking projections consistently indicate this trend will accelerate.⁷

STATE AND REGIONAL JOB GROWTH

The pandemic substantially impacted the job market at all geographic levels. In 2020, steady job growth patterns of the last decade were quickly reversed, with sharper declines in Marion County than the rest of the state. Moving forward, projections suggest steady and strong job growth for the state and Central Indiana, but flat growth for Marion County jobs.

The large job loss figures in 2020 and weak recovery projections for Marion County can be partially explained by the large share of jobs requiring no postsecondary credential lost during the pandemic. Marion County jobs requiring no formal postsecondary credential or training are not expected to return to pre-pandemic levels, and instead project a slight decline through 2028. Conversely, postsecondary credentialed jobs in Marion County were minimally impacted by the pandemic and are expected to grow significantly over time. Together, the overall job levels in the county are projected to remain flat due to large growth in postsecondary-level jobs balancing out the loss of jobs requiring a high school diploma or less.

⁷ Unless otherwise noted, labor market data in this section (Talent Demand in Indiana) is sourced exclusive from Lightcast™ (Formerly, Emsi - Labor Market Analytics & Economic Data), www.economicmodeling.com, 2022. All labor market data that projects beyond 2022 is sourced from Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

See: [Does Emsi Burning Glass account for the COVID pandemic recession in employment projections? - Knowledge Base \(emsideata.com\)](#) and [Industry Projections Methodology - Knowledge Base \(emsideata.com\)](#)

Marion County jobs will struggle to rebound, particularly those requiring lower levels of educational attainment.

Job Change (Current and Projected Percent Change) from 2020 by State and Sub-Regions

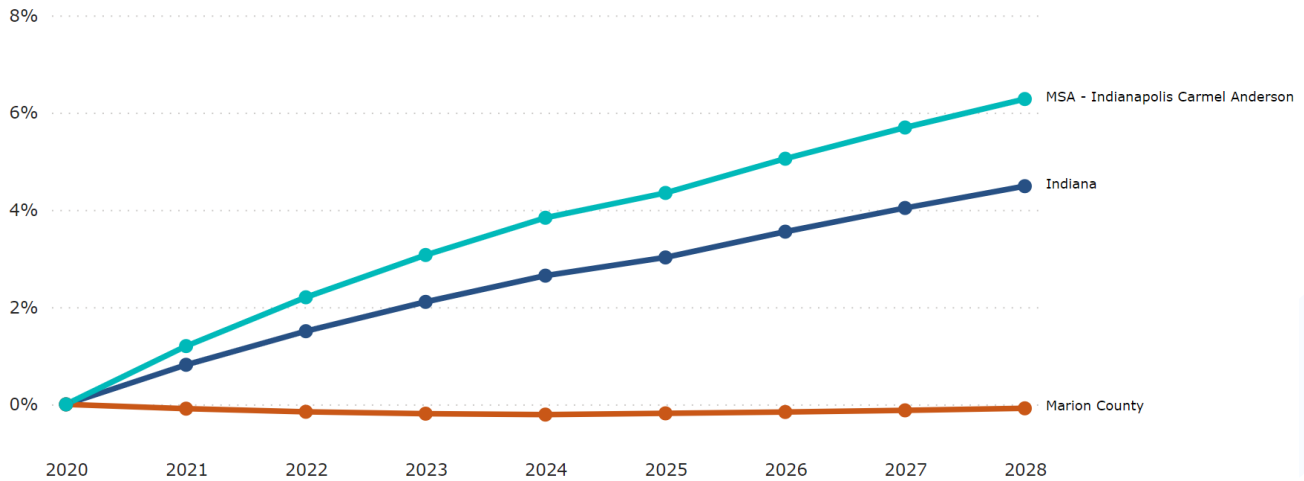


Figure 3.
Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

OCCUPATION AND JOB CHANGES

The Covid-19 pandemic provided a clear turning point for job growth, simultaneously accelerating employer demand for bachelor’s and graduate level talent while decelerating non-degreed talent. At the statewide level, historic job growth trends and post-pandemic projections differ significantly by education level requirements. From 2011 to 2019, jobs requiring a high school diploma or less grew at comparable levels to jobs requiring a bachelor’s degree or greater. Going forward, there is reason to believe an increasing share of new jobs will require some form of postsecondary education. In terms of pure growth rate, jobs requiring master’s, doctoral, bachelor’s, and associate’s degrees are projected to outpace jobs requiring a high school diploma or no formal education credential. Importantly, jobs requiring some college, but no degree are projected to steadily decline in both job growth rate and raw totals through 2028.

Indiana’s job landscape was permanently altered during the pandemic, simultaneously accelerating job growth in degreed occupations and decelerating growth in non-degreed jobs.

Total Jobs Change from 2011 by Occupation Typical Entry Level Education

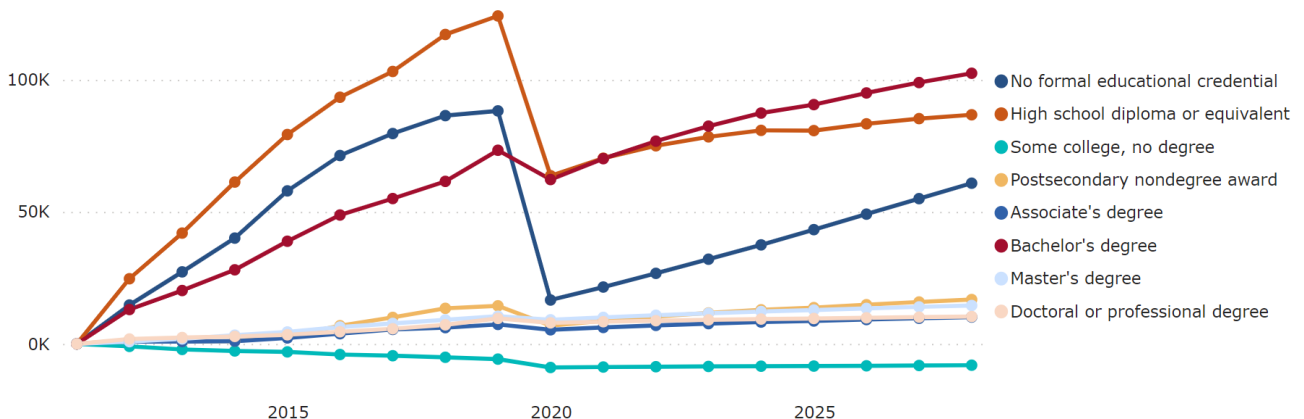


Figure 4. Note: Indiana statewide.
Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

At the regional level, jobs requiring bachelor's or post-graduate degrees will be in greater demand in Marion County and Central Indiana compared to the state as a whole. Overall, jobs requiring a high school diploma or no education credential are projected to grow at a slower pace. In Marion County particularly, jobs requiring a high school diploma, some college with no degree, or no formal education are expected to steadily decline over time.

Marion County jobs diverge by degree attainment more severely than Indiana and Central Indiana.

Projected Percent Jobs Change from 2020 to 2028 by Education Level

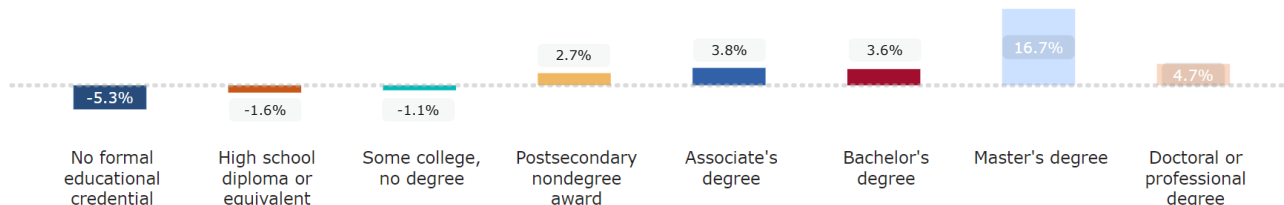


Figure 5. Note: Data for Marion County only.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

Of additional concern is the outsized impact of automation on jobs that require little or no education. Jobs with low automation risk that require no education credential throughout the state, Central Indiana and in Marion County are expected to decline. Conversely, there will be higher growth in low automation risk jobs requiring a postsecondary credential. Notably, jobs that require an associate's degree or higher are generally classified as having intermediate or low risk of automation.

There will be some new jobs for workers with a high school diploma or less going forward, but these jobs are far less likely to provide earnings above the median wage. Instead, the bulk of good paying new jobs will require at least a bachelor's degree.

Postsecondary credentialed workers will be increasingly likely to earn above median wages in the future. The implications for non-degreed workers are significant – a declining share of new jobs will be available to individuals without a postsecondary credential and an increasing share of those available jobs will provide lower earnings potential. See graph (pg. 7).

Jobs will continue to rebound throughout Indiana for all levels of education and training, but the bulk of good paying jobs will require postsecondary credentials.

New Jobs (2028 Projections) in Indiana Above/Below Current (2020) Median Wage Level by Entry Level Education

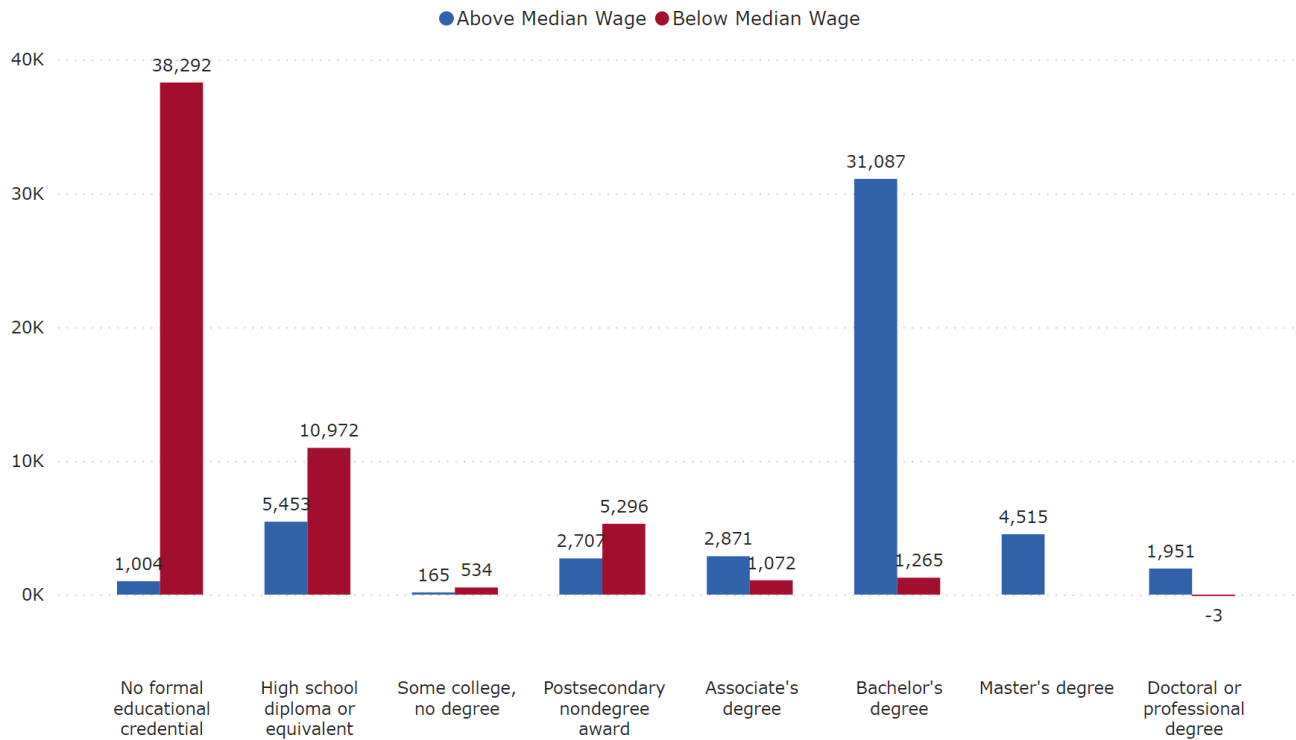


Figure 6. Note: Indiana statewide. This visual separates occupations by the 2020 median wage and derives job growth totals for those above or below. Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

INDUSTRY-LEVEL CHANGES

Understanding industry trends helps evaluate occupation and job opportunities. This is particularly true for career development professionals who help students, job seekers, or displaced workers understand where new job opportunities lay. Industry projections are an especially valuable signal to students in search of an academic focus area and recent graduates in the job search process. While the pandemic impacted all of Indiana's major industries, it is clear certain industries fared better than others. A majority of Indiana's leading industries have rebounded from the pandemic and are expected to continue adding jobs through 2028. At the statewide level, there are expected to be more jobs in Healthcare, Accommodation/Food Services, Transportation/Warehousing, and Professional/Scientific/Technical Service sectors. Notably, these sectors also had strong job posting levels throughout 2020 and 2021. Professional/Scientific/Technical Services and Ambulatory Healthcare Services stand out for having both high wage levels and high growth projections. See graph (pg. 8).

Statewide Health Care and Accommodations/Food Services sectors are projected to lead in job growth.

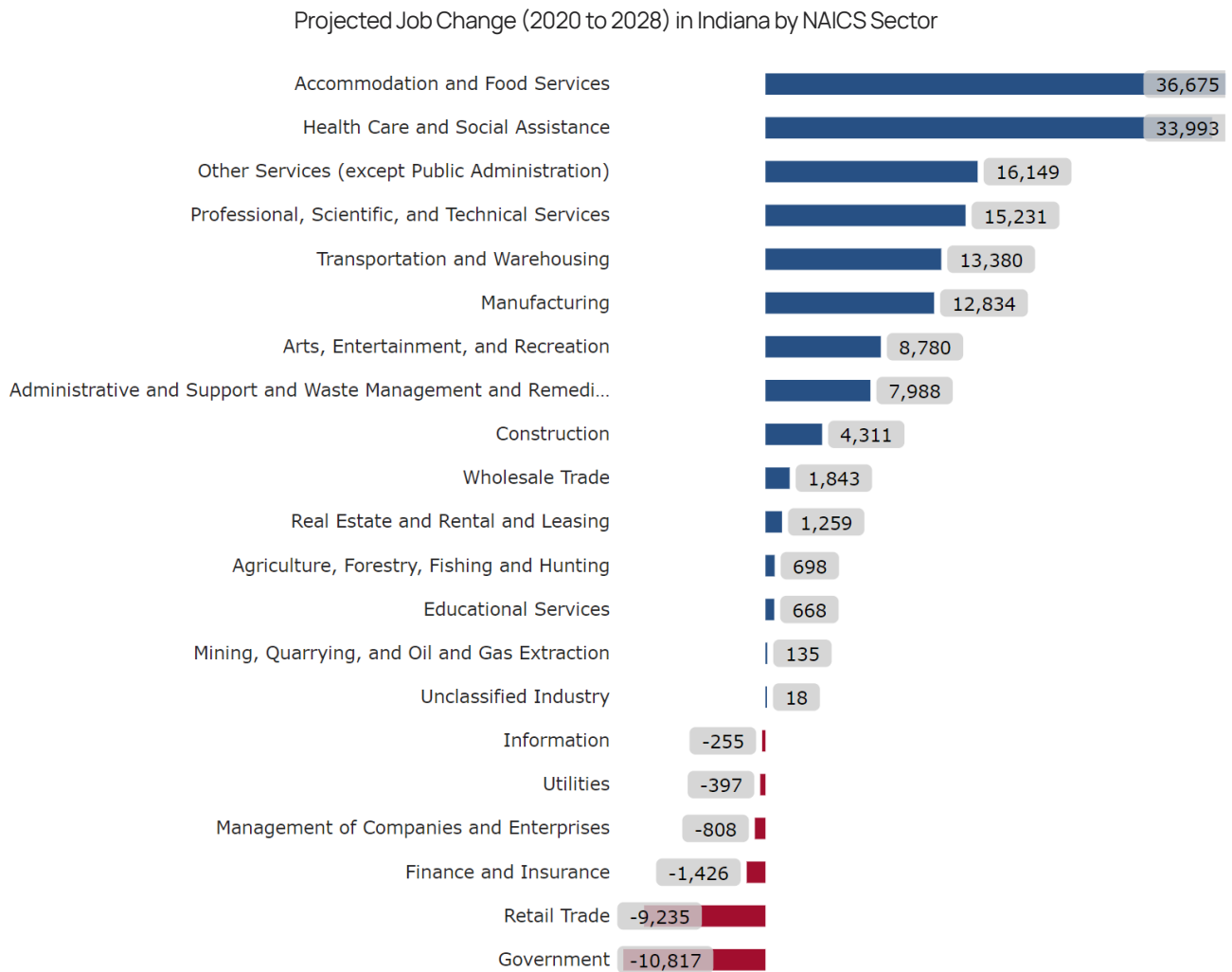


Figure 7. Note: Indiana statewide.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.4

There are important and significant differences between statewide and Marion County job projections. Unlike positive statewide job projections, most industries in Marion County are projecting stagnant job growth or job loss. In particular, Accommodation/Food Services, Wholesale Trade, and Manufacturing are projecting significant job loss into 2028, counter to the strong growth estimates at the statewide level. These industries should be analyzed in greater detail by Marion County’s workforce and economic development practitioners to understand the workforce composition and act where appropriate.

DEMOGRAPHIC DISPARITIES

Occupational divides along demographic lines are persistent. White workers are overrepresented in high-paying professional occupations, while workers of color consolidate in lower paying occupational groups. Hispanic/Latino and Black employees are more likely to hold jobs that require no formal educational credential. Similarly, white and Asian individuals are more likely to work in jobs requiring a bachelor’s degree. These differences align with current education and training trends that show students of color are less likely to pursue and complete postsecondary education. There is also correlation between the areas of study disproportionately chosen by demographic groups and the demographic composition

of workers employed in aligned occupations. The factors contributing to over/under representation of certain demographic groups in occupation groups are complex, but at least in part begin during an individual's education and training experiences where career pathways are selected and pursued.

There are significant disparities by race/ethnicity and gender within Indiana's major occupation groupings.

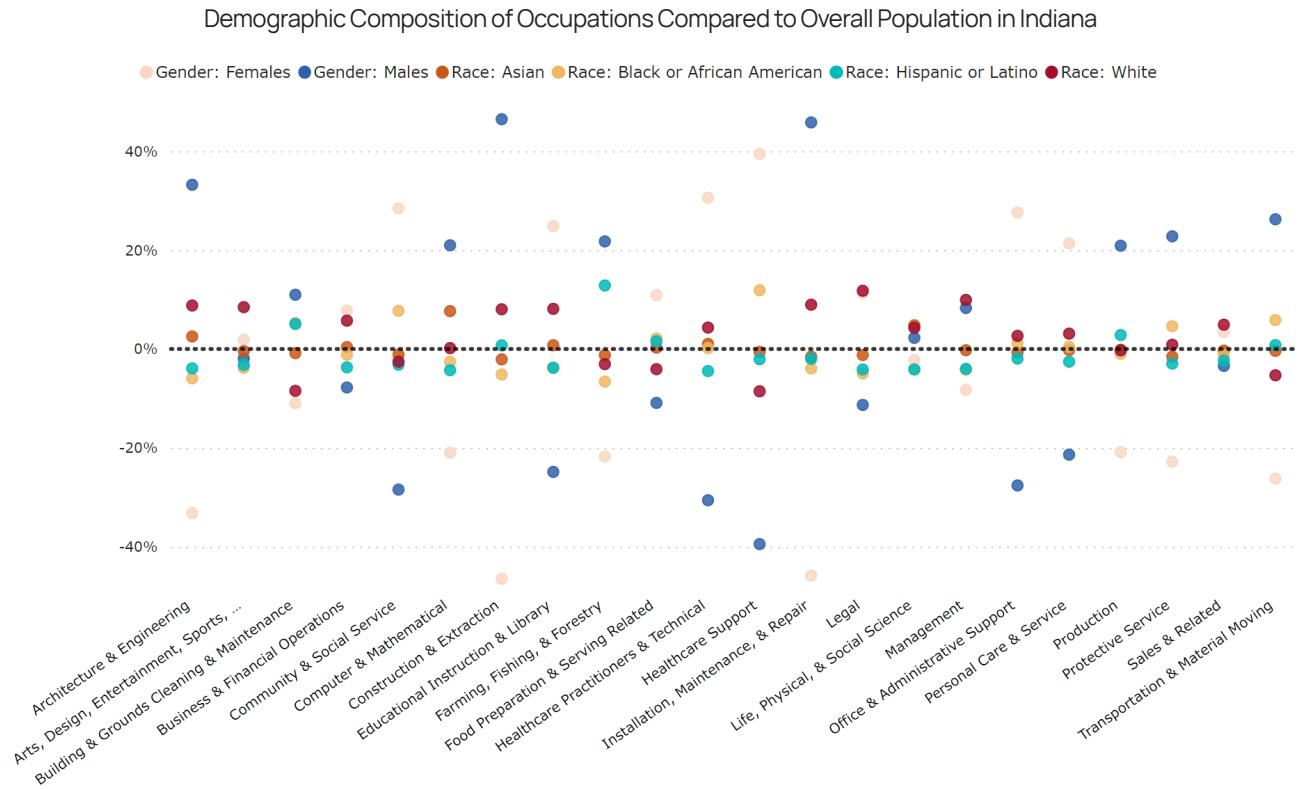


Figure 8. Note: Indiana statewide. This visual compares the demographic composition of each occupation with the demographic composition of Indiana's overall population. Positive demographic compositions indicate overrepresentation in the occupation, while negative values indicate underrepresentation.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.4

KEY TAKEAWAYS: TALENT DEMAND

The pandemic dramatically accelerated demand for postsecondary credentials.

Jobs requiring a high school diploma or no education credential are projected to grow moving forward but are not expected to achieve pre-pandemic levels by 2028. Figure 9 summarizes the cumulative impact of these projections for Indiana job growth. It's clear that associate's, bachelor's, and master's degree job growth rates will outpace growth in jobs requiring less education. Jobs that do not require postsecondary education are critically important to Indiana's economy and will remain so. However, as new jobs are created in Indiana, an increasing share of jobs will require a postsecondary credential as an entry level requirement. See graph (pg. 10).

Jobs requiring a postsecondary credential are projected to grow faster than other jobs.

Indiana Percent Jobs Change by Education Level (2020 to 2028)

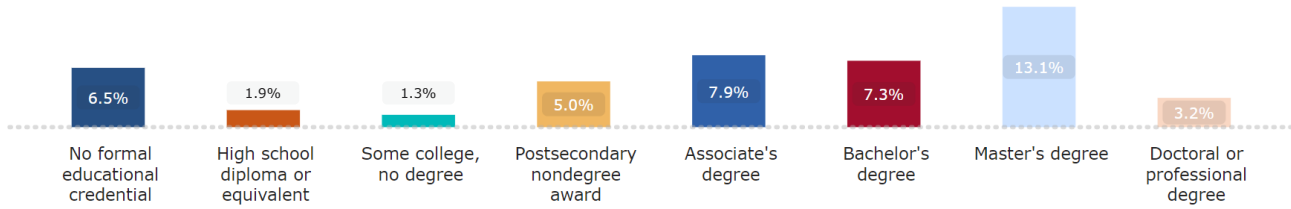


Figure 9. Note: Indiana statewide.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

Educational attainment disparities lead to automation risk.

Research indicates that jobs with lower education requirements are substantially more susceptible to disruption from automation than jobs requiring bachelor's and graduate degrees. Because Indiana's Black and Hispanic/Latino residents earn postsecondary credentials at lower rates and disproportionately work in jobs with lower educational requirements, it follows that Black and Hispanic/Latino workers would be at greater risk for automation than white or Asian workers. The available data on automation risk, when broken out by race/ethnicity, shows this to be the case for Indiana's Black, Hispanic/Latino, and male workers.

Educational disparities lead to disproportionate automation risk for Black, Hispanic or Latino, and male workers.

Employment in Jobs in Indiana by Automation Risk

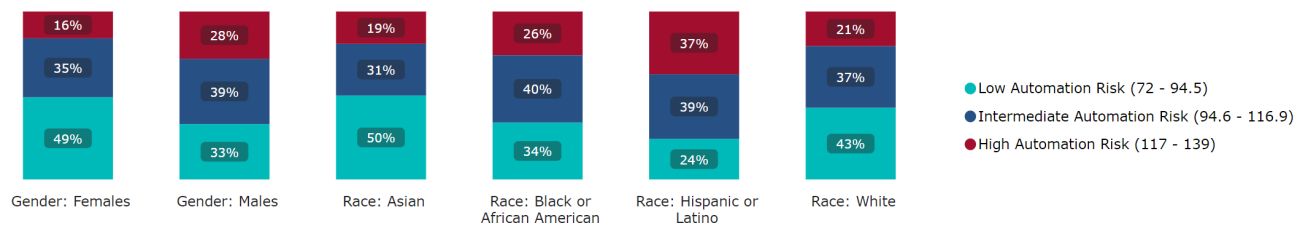


Figure 10. Note: Indiana statewide. Automation risk is assigned by occupation and aggregated for this visual. Automation risk index is developed by Lightcast™. For methodology see: [Automation Index Methodology - Knowledge Base \(emsdata.com\)](https://www.emsdata.com/automation-index-methodology-knowledge-base).

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

Talent Supply in Indiana

Indiana's overall population is undergoing shifts with important labor market implications. From 2011 to 2021, the baby boomer population has largely transitioned to retirement age. At the same time, there has been encouraging growth in younger working age adults between 20 and 39 years of age, but also decline in the 40 to 54 age population.⁸ Indiana's population is also becoming more diverse. Indiana's population growth from 2011 to 2021 is driven entirely by non-white (White, Non-Hispanic) individuals, with the largest growth from Asian, Black, and Hispanic (White, Hispanic) individuals. See graph (pg. 11).

⁸ Lightcast™, www.economicmodeling.com, 2022. Release 2022.3

Indiana's population is becoming more diverse and is increasingly approaching retirement age.

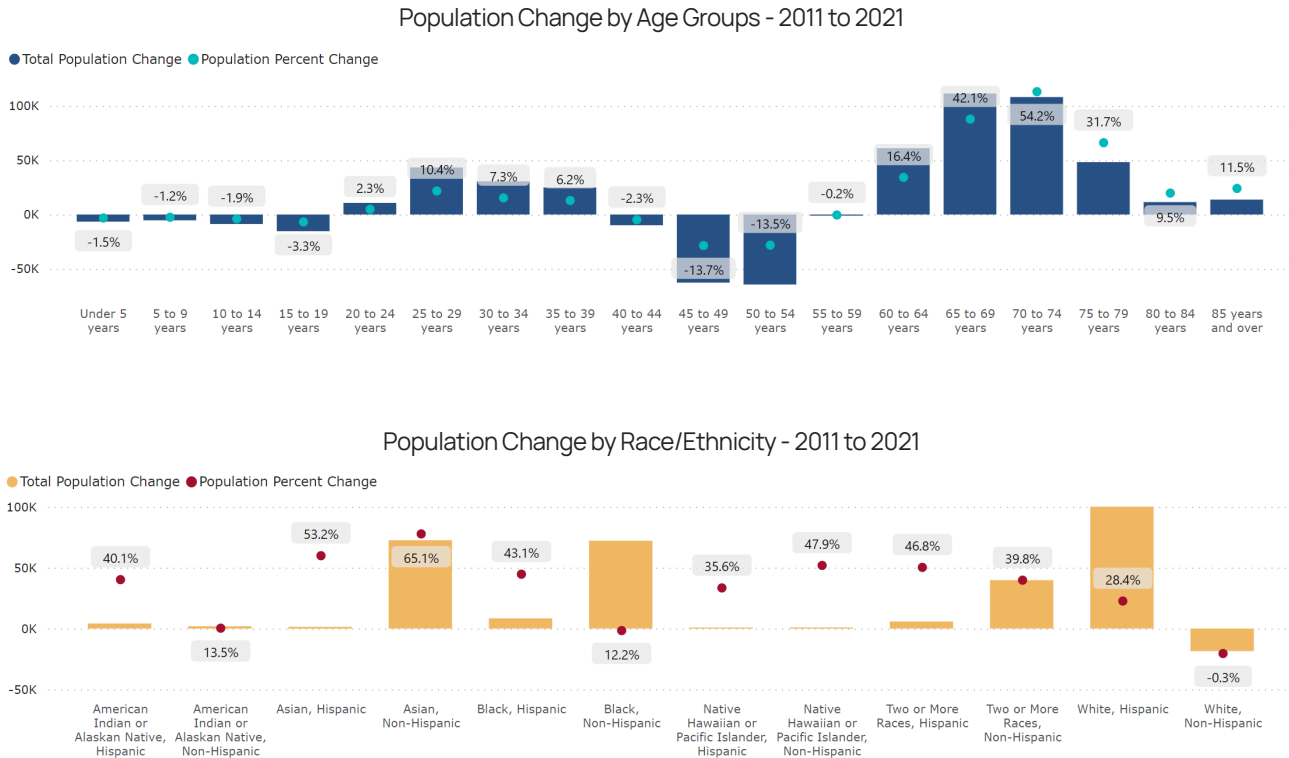


Figure 11. Note: Indiana statewide.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2022.3

While Indiana's population is becoming more diverse and is sluggishly achieving higher levels of education, disparities by race/ethnicity and gender remain significant.⁹ Black and Hispanic/Latino Hoosiers are much less likely to earn a bachelor's degree than white and Asian Hoosiers. In Marion County, gaps are particularly pronounced: Black and Hispanic/Latino individuals are roughly half as likely as white adults to have a bachelor's degree. These disparities exist at every stage of the educational pipeline and persist into workforce outcomes that result in lower incomes for Black and Hispanic/Latino Hoosiers and exacerbated wealth gaps.

CURRENT WORKFORCE

Labor Market Participation

Indiana cannot meet growing employer demand without increasing the share of Hoosiers who work. As the economy continues to add jobs, the share of Indiana's population actively employed has slowly rebounded, but the total number of employed Hoosiers remains below pre-pandemic levels. The persisting low employment rates are particularly worrisome, given the large number of job openings and strong job posting growth throughout the state since 2021.¹⁰

9 U.S. Census, American Community Survey, Table Series B15002. Data reflect educational attainment of the population age 25 and older.

10 As of April 2022, the percent of Hoosiers actively working stood at roughly 62%, down 2% from February 2020. Indiana's official labor force participation rate tracks with national averages. See: [Labor Force Participation Rate for Indiana \(LBSSA18\) | FRED | St. Louis Fed \(stlouisfed.org\)](#)

To increase overall employment levels throughout the state, the employment status disparities between race/ethnicity and gender must be addressed. Employment rates for Black and female individuals lag behind White, Hispanic/Latino, and male workers. Black Hoosiers experienced the sharpest decline in employment level during the pandemic, with a 7% rate of employment drop from 2019 to 2020. However, Black employment levels had a strong rebound in 2021 compared to other demographic groups but remain below statewide averages.

Women also experienced a significant employment rate drop during the pandemic, and, unlike other demographic groups, work participation rates for women did not rebound in 2021. This setback is especially concerning, as women make up half of the state's population and earn postsecondary credentials at higher rates than men. Indiana will need participation rates of women to return to pre-pandemic levels and continuously increase in the future to meet employer demand.

A stronger rebound in employment rates is needed across demographic groups and for women in particular.

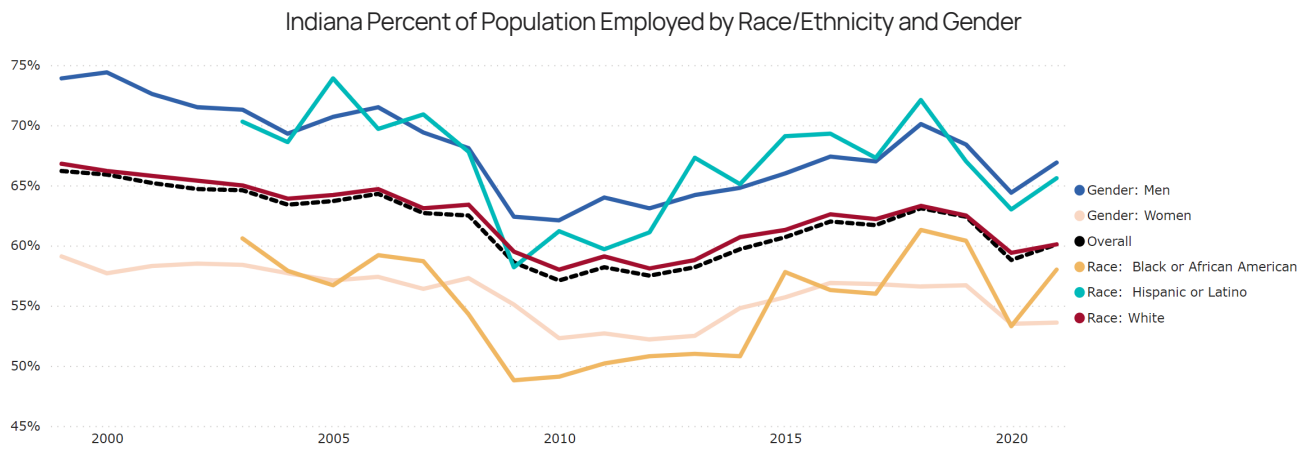


Figure 12. Note: Indiana statewide. The percentages measure employment against Indiana's non-institutionalized civilian population. For details on BLS methodology see: [Concepts and Definitions \(CPS\) \(bls.gov\)](https://www.bls.gov/concepts/and-definitions/cps/). Pre-2003 Hispanic or Latino and Black or African American demographic groups were excluded due to potential estimate error acknowledged by BLS.

Source: BLS, Local Area Unemployment Statistics (See: [Expanded State Employment Status Demographic Data \(bls.gov\)](https://www.bls.gov/data/expansion-state-employment-status-demographic-data/))

Labor force participation throughout the state also differs by age group. The measure declined in 2020 for all age groups, except for workers 65 and older. Indiana's 65 and older population slightly grew in the share and overall total actively working in 2020. The share of 20- to 34-year-olds participating was declining before the pandemic and dropped significantly during the pandemic. While participation for these younger cohorts began to rebound in 2021, levels have not reached pre-pandemic employment. See graph (pg. 13).

To meet long-term employer demand, Indiana must improve employment levels of young and middle-aged Hoosiers.

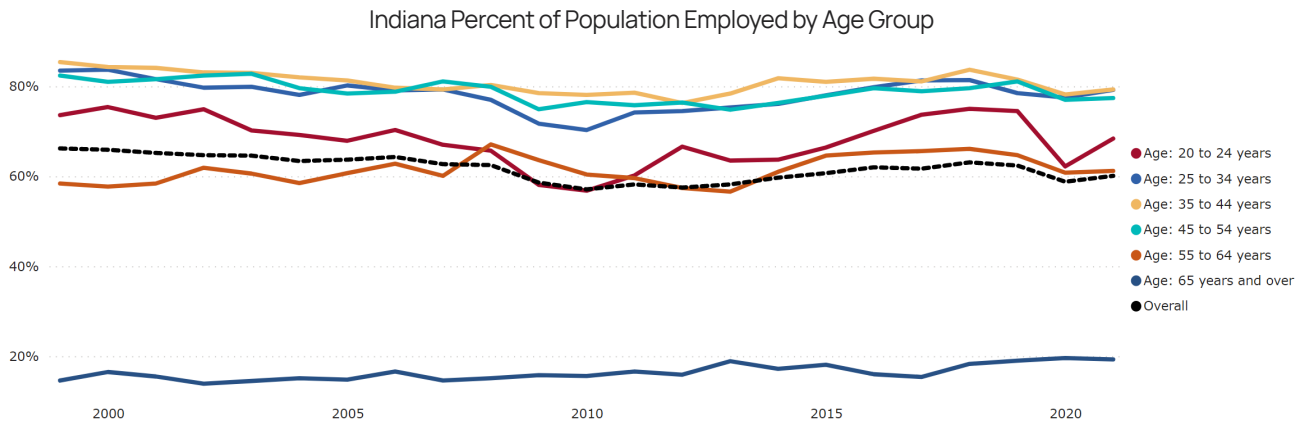


Figure 13. Note: Indiana statewide. The percentages measure employment against Indiana's non-institutionalized civilian population. For details on BLS methodology see: [Concepts and Definitions \(CPS\) \(bls.gov\)](#). Pre-2003 Hispanic or Latino and Black or African American demographic groups were excluded due to potential estimate error acknowledged by BLS.

Source: BLS, Local Area Unemployment Statistics (See: [Expanded State Employment Status Demographic Data \(bls.gov\)](#))

RETIREMENT RISK

The share of Indiana's workforce expected to retire soon is on par with national averages. There are roughly two million workers in Indiana who are 55 and older approaching retirement.¹¹ However, Central Indiana (approximately 560,000 age 55 and older) and Marion County (approximately 240,000 age 55 and older) have a notably smaller share of workers approaching retirement age compared to the national average. Certain high-demand occupations have a steep number of upcoming retirees, including registered nurses, truck drivers, and home health/personal care aides. Also concerning are the large percentage and total number of healthcare professionals and teachers at the secondary and postsecondary level approaching retirement age. See graph (pg. 14).

¹¹ Lightcast™, www.economicmodeling.com, 2022

Indiana's overall workforce at risk for retirement is on par with national averages, but some occupations are more populated with soon-to-be retired workers than others.

Occupation Current Workforce Age 55 or Older (Total and Percent)

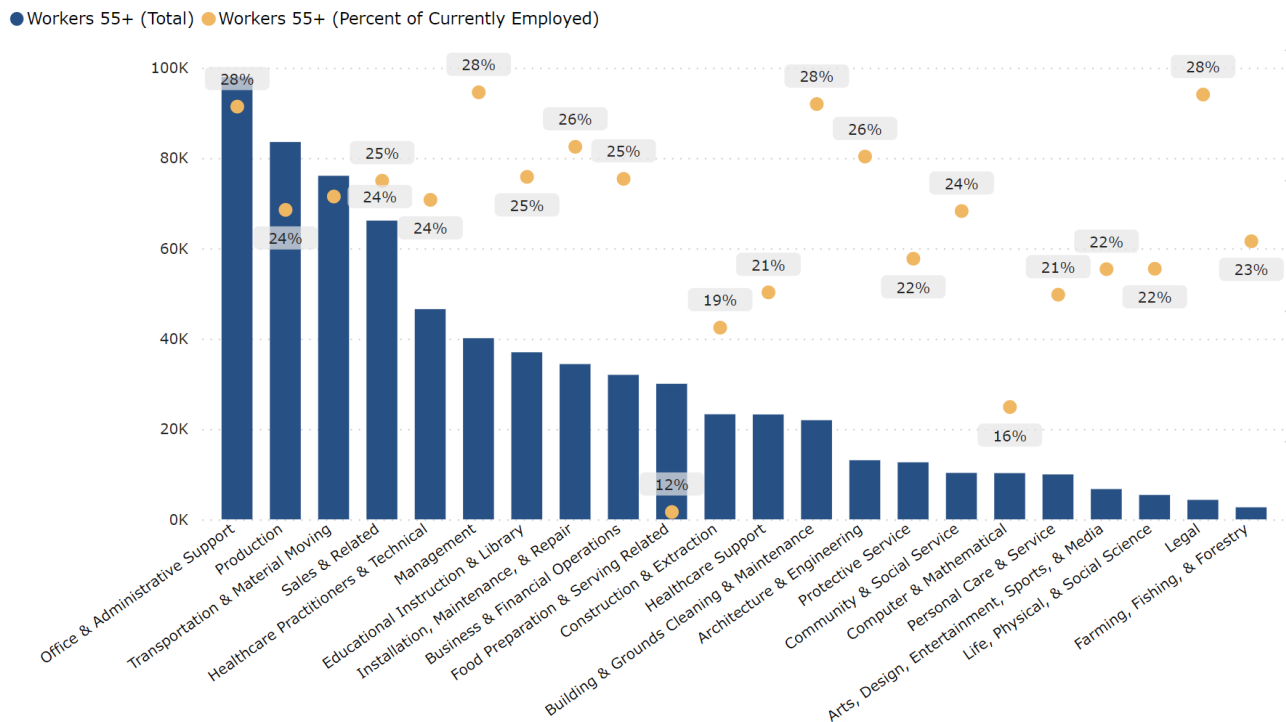


Figure 14. Note: Indiana statewide.

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.4

HIGH SCHOOL GRADUATION

Supply of career-ready talent begins with K-12 students. A high school diploma is a basic requirement for most employment opportunities. Students who fail to graduate or graduate with a waiver diploma are far less prepared for postsecondary opportunities, as well as the modern labor market. Racial disparities in academic outcomes existed long before Covid-19, but the pandemic exacerbated longstanding opportunity gaps for Black and Hispanic/Latino students.

Too few Black and Hispanic/Latino students are achieving academic mastery in core subjects like math, English/language arts (ELA), and science. On Indiana's statewide grade-level proficiency examination (ILEARN), 24.2% of Hispanic/Latino students and 14.8% of Black students passed both Math and ELA, compared to 43.3% of white students. While ILEARN performance dropped for all demographic groups in 2020-21, Hispanic/Latino (15.6%) and Black (8.1%) student passage rates for both Math and ELA declined most significantly. This lack of academic preparation in lower grade levels carries forward to high school performance and graduation outcomes. In particular, Black, Hispanic/Latino, and male students are less likely to earn a high school diploma of any kind compared to other demographic groups.¹² See graph (pg. 15).

¹² Indiana Commission for Higher Education "College Readiness Report;" See: College Readiness 2020 | Tableau Public.

Notes: For each high school graduation cohort, numbers reflect the percent of the cohort that graduated high school, including students who received a waiver to graduate. These percentages will not exactly match the official graduation rates from the Indiana Department of Education, as the IDOE has a defined approach for adjusting cohort sizes due to student mobility during the high school years. See information on the IDOE's methodology for calculating graduation rates here (DOE: Graduation Rate (in.gov)) and official graduation rates on the Richard M. Fairbanks Foundation's Community Data Snapshot (<https://www.rmff.org/community-data-snapshot/education/>).

Too few students graduate from high school. This is especially true for Black, Hispanic or Latino, and male students

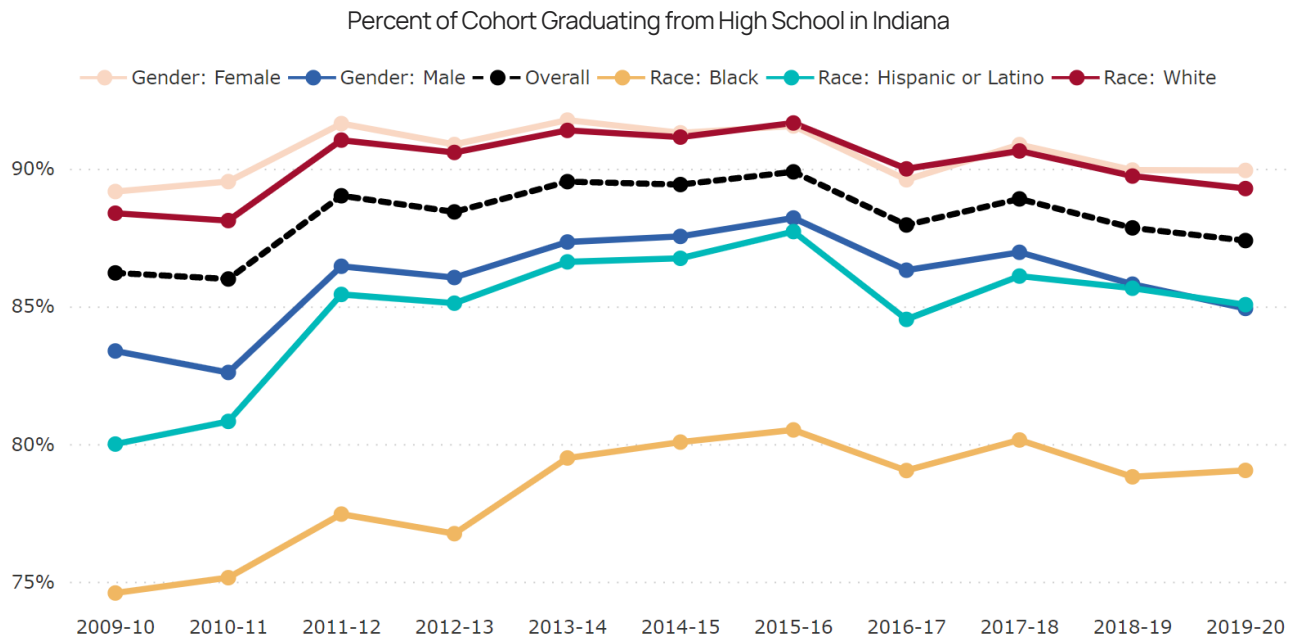


Figure 15. Note: For each high school graduation cohort, numbers reflect the percent of the cohort that graduated high school, including students who received a waiver to graduate. These percentages will not exactly match the official graduation rates from the Indiana Department of Education, as the IDOE has a defined approach for adjusting cohort sizes due to student mobility during the high school years.

Source: High School Graduate value from Indiana Commission for Higher Education "College Readiness Report;" See: [College Readiness 2020 | Tableau Public](#). Cohort value for percentage calculations from Indiana Management and Performance Hub.

Further, Black and Hispanic/Latino students disproportionately earn waiver diplomas to graduate from high school.¹³ In academic year 2018-19, 24.1% of Black high school graduates utilized a waiver diploma compared to 9.4% of white students. This is particularly troubling because students with a waiver diploma who enroll in college are more likely to need remediation and are less likely to persist than students who did not require a waiver diploma. Students who do not meet the requirements for a high school diploma or receive an exemption through a waiver are generally less prepared to meet 21st century workforce demands and adapt to accelerated changes brought on by automation, digitization, and global market forces.

POSTSECONDARY EDUCATION

Postsecondary Enrollment

Consistent with national trends, college enrollment rates for Indiana high school graduates are in steady decline.¹⁴ In 2020, the share of high school graduates enrolling in postsecondary education one year after graduation reached new lows overall and across each demographic group. This downward trend has accelerated in recent years. In 2015, 65% of Indiana high school graduates enrolled in postsecondary education (48% at Indiana public postsecondary institution). By 2020 (most recent year available), the number of high school graduates enrolling in postsecondary after graduation dropped to 53%. In only five years, Indiana's postsecondary enrollment rates have declined by 12% overall, with more significant declines for Black (17%) and male students (13%). See graph (pg. 16).

¹³ Waiver graduates are generally students who fail to pass state graduation exams or diploma requirements by their senior year of high school. These students may be eligible for graduation by receiving a waiver pursuant to requirements outlined in [IC.20-32-4](#).

¹⁴ Indiana Commission for Higher Education. College Completion Report 2021. See: [2021 College Completion Report_06_23_2021_Statewide.pdf \(in.gov\)](#).

Too few Indiana high school graduates advance to the postsecondary stage of the education pipeline. This is especially true for Black, Hispanic or Latino, and male students.

Percent of Indiana High School Graduates Enrolling in Postsecondary Education One Year After Graduation

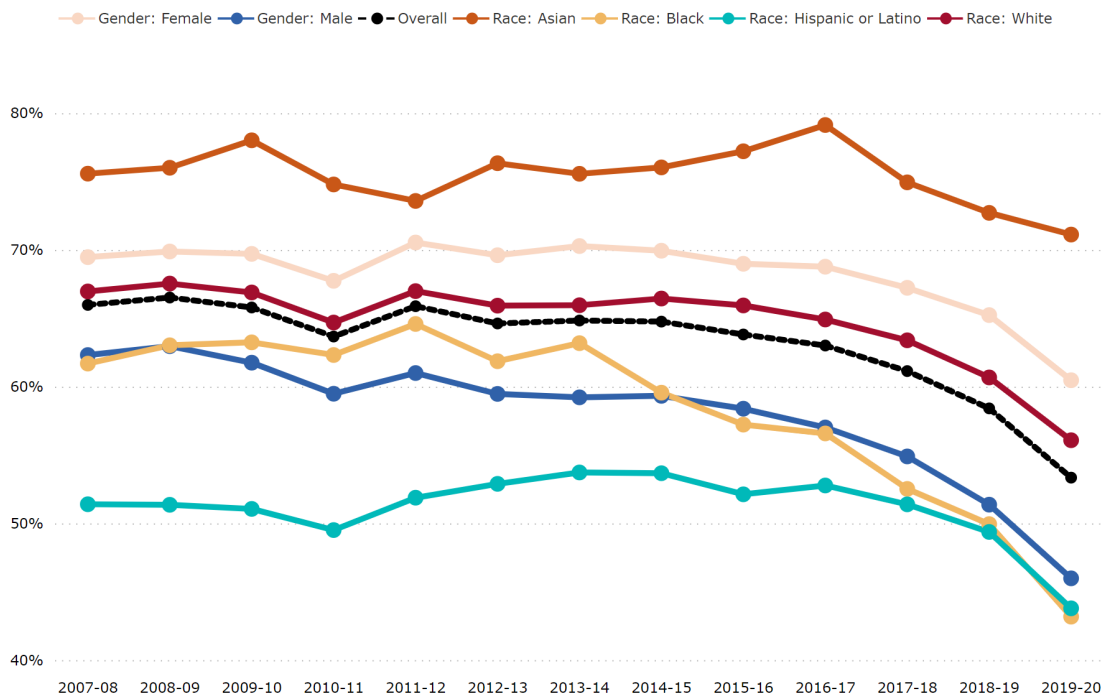


Figure 16. Note: Numbers reflect students who enrolled in an institution (public or independent) within one year following high school graduation. Students were considered enrolled if they were enrolled as a degree- or certificate-seeking undergraduate student and if they were enrolled for the equivalent of at least one semester during the school year.

Source: Indiana Commission for Higher Education "College Readiness Report;" See: [College Readiness 2020 | Tableau Public](#).

Indiana is no exception to enrollment decline trends, which are occurring throughout the country. While it is yet to be seen whether enrollment will return to prior year levels, it's clear there will be even fewer college-level graduates in coming years available to satisfy surging demand for postsecondary-educated talent.

Postsecondary Graduates and Completions

Despite declining enrollment of Indiana high school graduates, overall completions at Indiana's postsecondary institutions are steadily increasing.¹⁵ Growth in overall completions is primarily driven by bachelor's, master's, and certificate degree awards. Certificate completions have grown most significantly, with awards tripling between 2012 and 2021. Similarly, bachelor's degree completions grew by over 9,000 and master's by over 8,000 over the same timeframe. See graph (pg. 17).

¹⁵ U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS); Notes: Data represent degrees awarded at Indiana public postsecondary institutions. The certificates category includes all certificate types, including short-term, long-term, and post-Bachelor's/Master's certificates.

Certificates and other non-degree credentials are driving growth in Indiana's postsecondary pipeline.

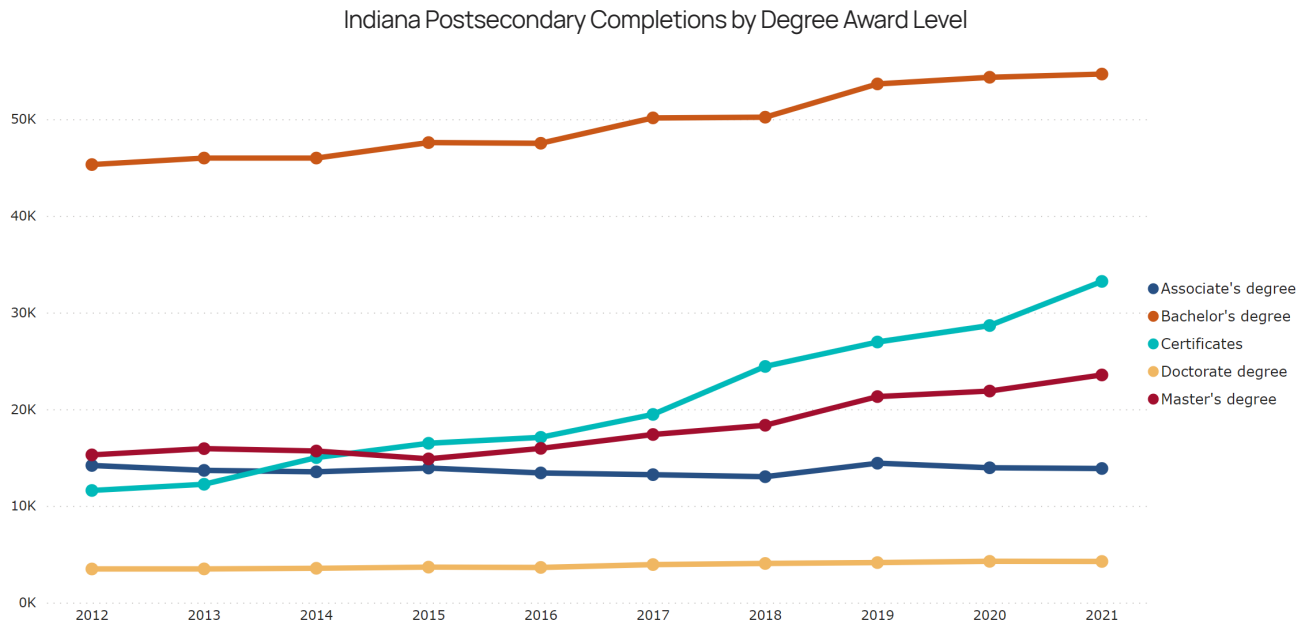


Figure 17. Note: Data represent degrees awarded at all Indiana postsecondary institutions. The certificates category includes all certificate types, including short-term, long-term, and post-Bachelor's/Master's certificates.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)

But there are important details and disparities that affect these trends. Degree completions are growing across all demographic groups at Indiana's postsecondary institutions.¹⁶ This is particularly true for Hispanic/Latino and Black students, who have increased overall degree production more than other demographic groups from 2012 to 2021. However, when broken down by degree award level, there are noteworthy disparities. Black students are significantly less likely to complete a bachelor's degree than white or Asian students. Instead, Black students disproportionately pursue lower degree award levels, including sub-bachelor's certificate/awards and associate's degrees. See graph (pg. 17).

¹⁶ U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS); Notes: Data represent degrees awarded at Indiana public postsecondary institutions. The certificates category includes all certificate types, including short-term, long-term, and post-Bachelor's/Master's certificates.

Black and Hispanic or Latino students are more likely to pursue sub-bachelor's degrees than white or Asian students.

Degree Award Level Composition of Indiana Postsecondary Graduates by Demographic Group (2018-2020)

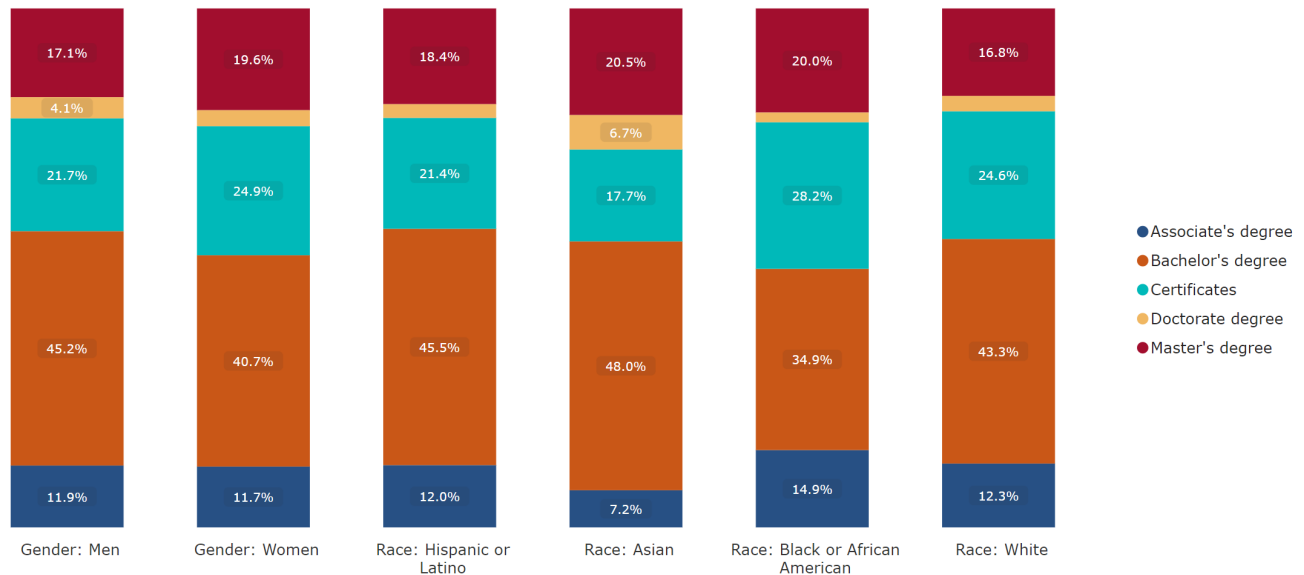


Figure 18. Note: Data represent degrees awarded at all Indiana postsecondary institutions. The certificates category includes all certificate types, including short-term, long-term, and post-Bachelor's/Master's certificates.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)

When broken down by race and gender, there are also significant disparities between demographic groups in the programs of study pursued. White, Asian, and male students are far more likely to complete STEM degrees than Black or female students.¹⁷ Alternatively, men are far less likely to pursue Health degrees compared to women but are more than twice as likely to pursue Trades degrees than women.

Degree programs of study diverge far too much by race/ethnicity and gender.

Degree Program of Study Composition for Indiana Postsecondary Graduates by Demographic Group

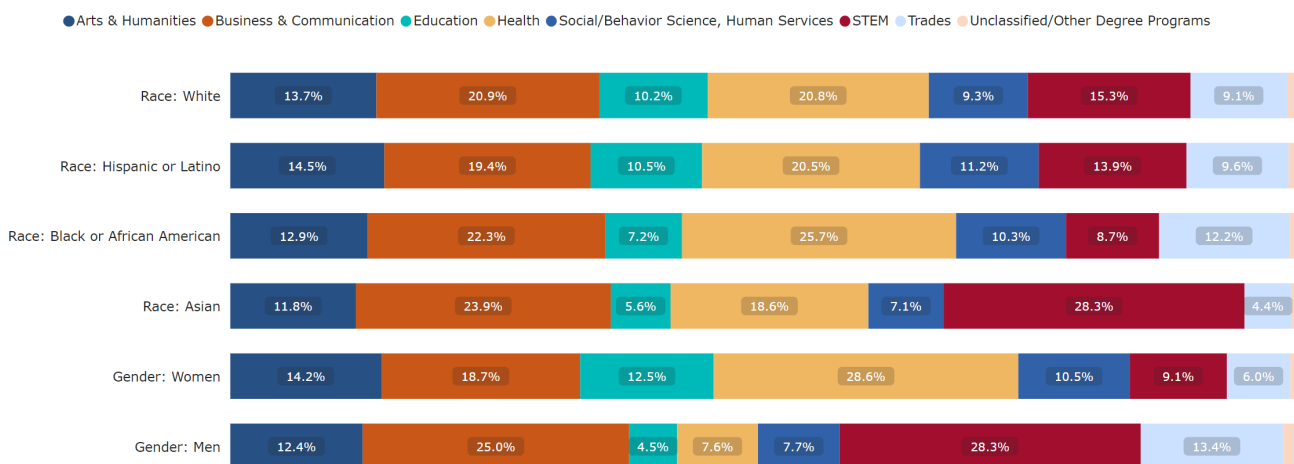


Figure 19. Note: Data represent degrees awarded at all Indiana postsecondary institutions. The certificates category includes all certificate types, including short-term, long-term, and post-Bachelor's/Master's certificates.

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)

17 U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)

KEY TAKEAWAYS: TALENT SUPPLY

Far too many students fall out of Indiana's high school to postsecondary graduation pipeline.

Labor market projections clearly indicate that demand for talent with postsecondary-degrees or credentials experienced a significant shift during the pandemic and will continue to grow over the long-term. To improve Indiana's talent supply gaps, there must be more students successfully graduating from high school who enroll in and graduate from postsecondary education.

Indiana's education pipeline leaks across all stages, but is most severe for students who choose not to enroll in college after high school graduation.

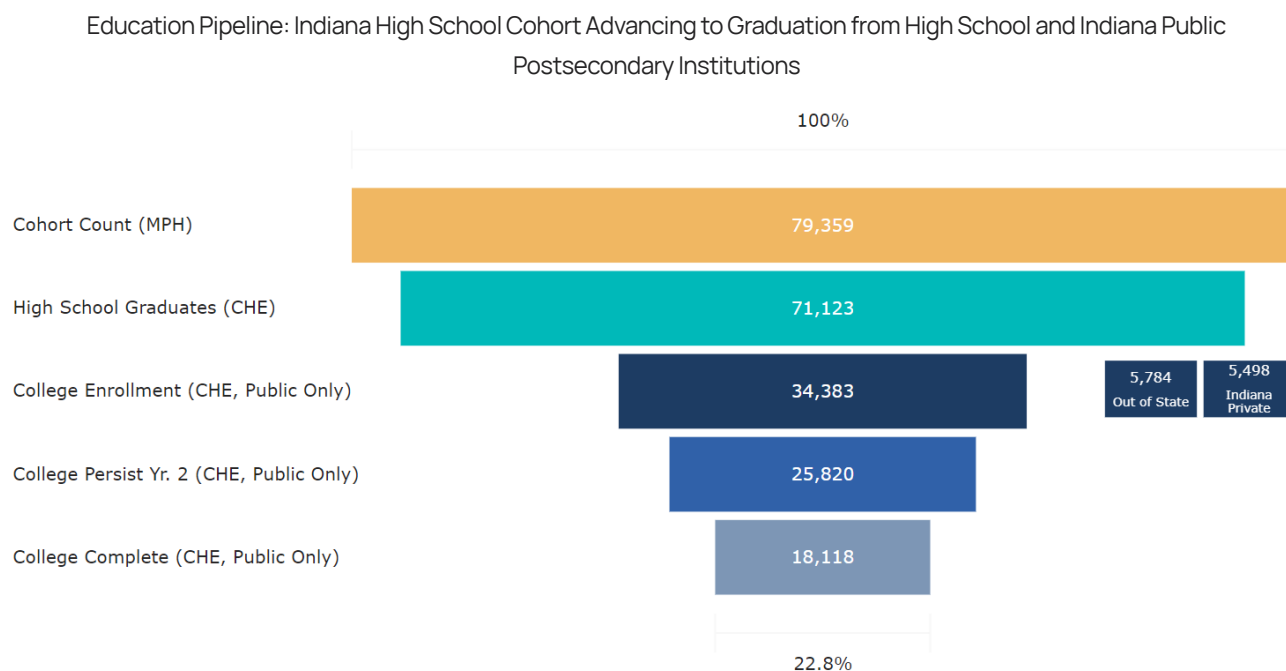


Figure 20. Note: Primary funnel shows Indiana high school students who progress through postsecondary education at Indiana's public institutions (2012-13 cohort). Side boxes for Out of State and Indiana Private display College Enrollment totals only for Indiana high school graduates and but are not factored in the remaining bottom stages (College Persistence and College Completion). College completion reflects any type of completion (on-time or extended time, 2-year degree or 4-year degree). Degree awards include long-term certificates requiring one or more years to complete.

Source: High school graduate through college completion figures from Indiana Commission for Higher Education "College Readiness Report;" See: [College Readiness 2020 | Tableau Public](#). Cohort count is provided by MPH and will not exactly match the cohort numbers used by the Indiana Department of Education.

The transition from high school to postsecondary enrollment represents the greatest level of student drop off among all pipeline stages. The significant recent declines in postsecondary enrollment will generate fewer postsecondary-credentialed graduates to meet the growing demand for degreed workers. For those students who do enroll in postsecondary education, there must be improvement in student persistence and completion, which have remained stubbornly low over time.¹⁸

¹⁸ Cohort count from Indiana Management Performance Hub; all other data from Commission for Higher Education College Readiness Reports. Notes: Postsecondary data (enrollment, persistence, completion) reflects Indiana's public postsecondary institutions only. College completion reflects any type of completion (on-time or extended time, 2-year degree or 4-year degree). Degree awards include long-term certificates requiring one or more years to complete. Cohort count is provided by MPH and will not exactly match the cohort numbers used by the Indiana Department of Education to calculate graduation rates, as the IDOE has a defined approach for adjusting cohort sizes due to student mobility during the high school years. See information on the IDOE's methodology on the IDOE website and official graduation rates by subgroup on the Richard M. Fairbanks Foundation's Community Data Snapshot (<https://www.rmff.org/community-data-snapshot/education>).

Race and gender gaps in postsecondary outcomes carry forward to gaps in workforce outcomes.

Disparities in degree level, program of study, persistence, and completion are reflected in wage levels, placement in high-demand occupations, and employment participation. Problems in Indiana’s education pipeline are especially acute for Black and Hispanic/Latino students. Of Indiana’s 2012-13 high school cohort (most recent year available), only 11% of Black students and 16% of Hispanic/Latino students completed a college degree at a public institution in the state, compared to 25% of white students.

Disproportionate numbers of Black and Hispanic or Latino students fail to advance through Indiana’s education pipeline.

Percent of Indiana High School Cohort Advancing to Graduation from High School and Indiana Public Postsecondary Institutions

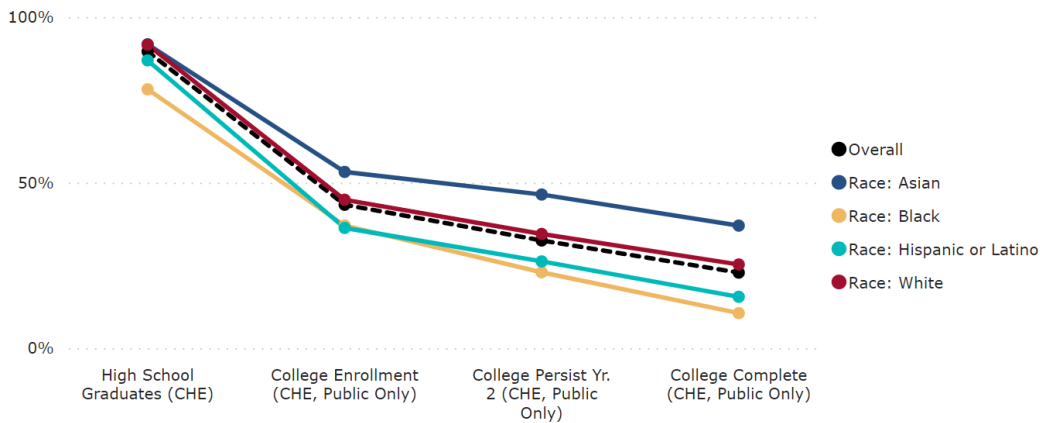


Figure 21. Note: Visual displays Indiana high school students who progress through postsecondary education at Indiana’s public institutions (2012-13 cohort) by race/ethnicity. College completion reflects any type of completion (on-time or extended time, 2-year degree or 4-year degree). Degree awards include long-term certificates requiring one or more years to complete.

Source: High school graduate through college completion figures from Indiana Commission for Higher Education “College Readiness Report;” See: [College Readiness 2020 | Tableau Public](#). Cohort count is provided by MPH and will not exactly match the cohort numbers used by the Indiana Department of Education.

Figure 22, shows current employment in occupations by required entry level education. It’s no coincidence that gaps found within the current workforce are consistent with demographic gaps in progression through the education pipeline.¹⁹ Improving outcomes at each education stage for these demographic groups would provide employers with a larger pool of qualified talent and more equitable access to high quality, good paying jobs for individuals. See graph (pg. 21).

¹⁹ Lightcast™, www.economicmodeling.com, 2022

Inequities in Indiana's education pipeline directly align with employment disparities.

Indiana Employment in Occupations by Entry Level Education Requirements

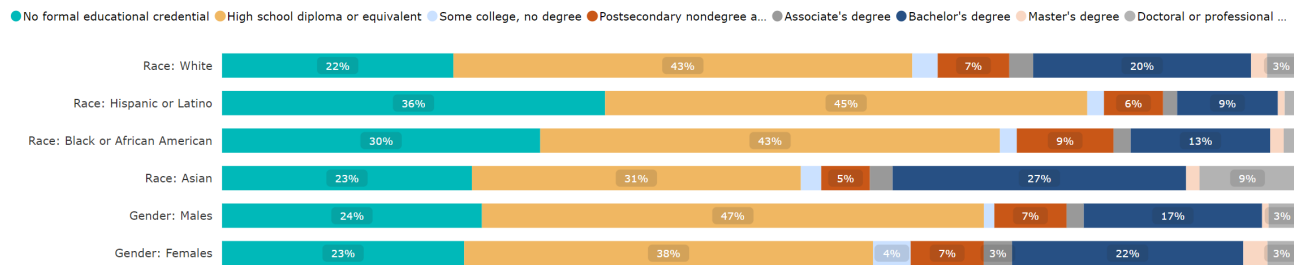


Figure 22. Note: Indiana statewide. This visual uses entry level education requirements developed by USDOL in combination with Lightcast occupation and demographic data. For further information see: [Types of Educational Attainment – Knowledge Base \(emsidata.com\)](https://www.emsidata.com/knowledge-base/types-of-educational-attainment)

Source: Lightcast™, www.economicmodeling.com, 2022. Release 2021.4

Supply and Demand Alignment

To close talent supply and demand gaps, Indiana will need to address many of the issues and concerning trends discussed in earlier sections. In past decades, Indiana contained a comparatively high number of good paying jobs that required no postsecondary credential. This has likely contributed to recent survey results conducted by the American Enterprise Institute (AEI) through the Indiana GPS Project, finding nearly 75% of Hoosiers believe they can succeed without a four-year postsecondary degree, compared to 63% of all Americans.²⁰ Yet, in years leading into the pandemic, approximately one-third of Indiana jobs required postsecondary education, while only one-fourth of working-age adults possessed an adequate postsecondary credential.²¹ The pandemic-driven changes discussed in the Talent Demand section of this report indicate that postsecondary credential gaps will likely grow over time, making it critically important that enrolled students pursue degree programs aligned with good paying job opportunities and that Indiana retains as many higher education graduates within the state as possible.

DEGREE COMPLETIONS AND GROWING JOBS

As the baby-boomer generation continues phasing into retirement, employers will continue to rely on early-in-career degreed graduates to fill talent gaps. For this reason, it's increasingly important that students pursue fields of study that are in high demand. To improve chances of securing a good paying job, students should be encouraged to pursue degree programs with strong job growth trends and sustainable wage levels.

In far too many cases, degree program completion trends are not in sync with projected labor market demand. Students who pursue degrees linked with declining occupations put their own economic well-being in jeopardy. There are many fast-growing occupations awaiting qualified talent. The data suggests that to meet job growth requirements, Indiana must graduate more students from Health/Medical Preparatory, Health Professions & Related Clinical Sciences, and Adult Development & Aging programs.²² See graph (pg. 22).

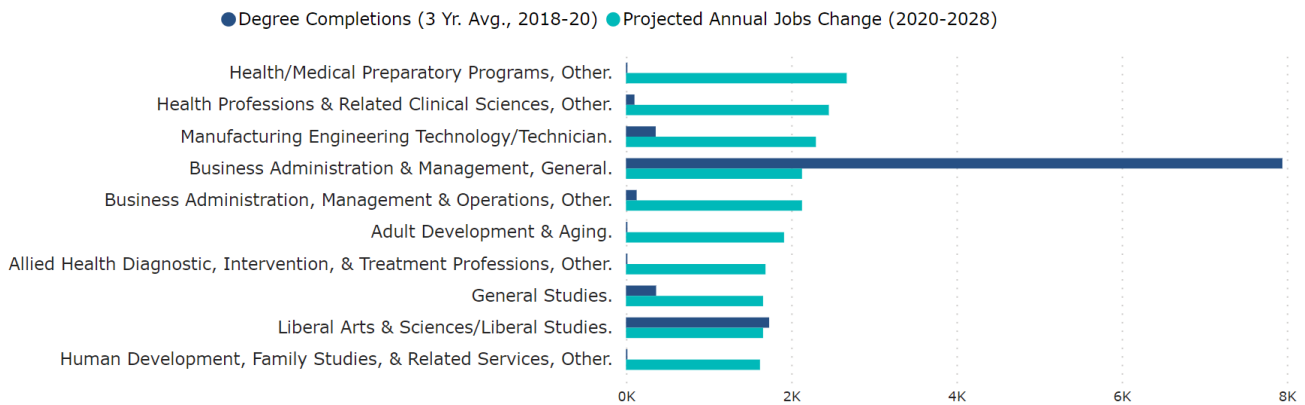
²⁰ See Brookings Metro – [Indiana State of Renewal](https://www.brookings.edu/reports/indiana-state-of-renewal/), page 59. The Brookings report notes, "That view may reflect the state's relatively abundant good-job opportunities that don't require a college education, but it ignores the importance of fast-changing skills demanded in good job intensive industries."

²¹ Chad Shearer, Isha Shah, and Mark Muro, "Advancing Opportunity in Central Indiana." (Washington: Brookings Institution, 2018).

²² Lightcast™, www.economicmodeling.com, 2022. Release 2021.3

It's not enough that Indiana produce more postsecondary graduates; there must be more graduates from in-demand programs of study.

Indiana Top Growing Jobs (Projected Annual Change 2020-28) and Occupation-Aligned Degree Completions (3 Yr. Avg. 2018-20)



Indiana Top Declining Jobs (Projected Annual Change 2020-28) and Occupation-Aligned Degree Completions (3 Yr. 2018-20)

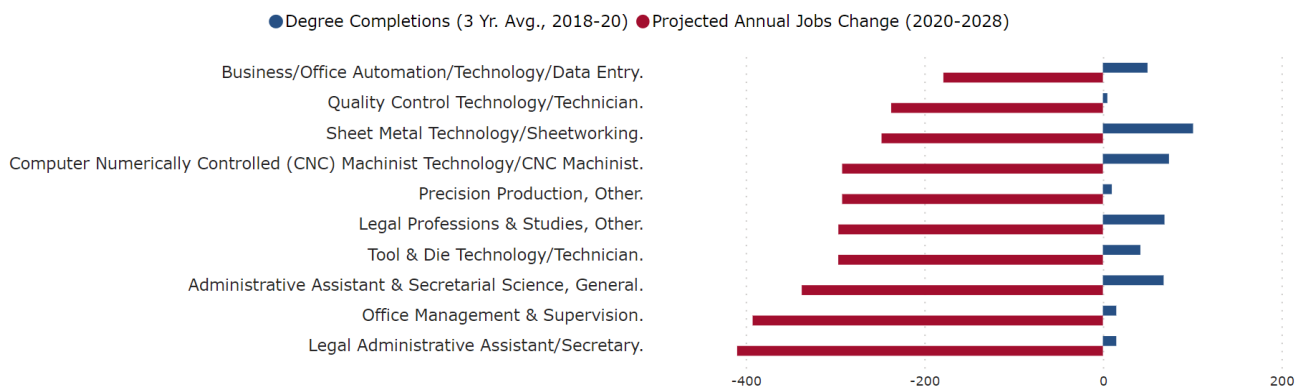


Figure 23. Note: Indiana statewide. The top visual shows Indiana's ten fastest growing occupations and aligned degree production from Indiana institutions. The bottom visual provides occupations with the highest projected jobs losses by 2028 and the recent degree completions
Source: Lightcast™, www.economicmodeling.com, 2022. Release 2022.1

Employment outcomes vary greatly by degree program and level of study pursued by students. At the bachelor's level, students in Health, Engineering, Business Management, Biological or Biomedical, and Computer/Information Science degree programs consistently achieve higher rates of employment one year after graduation compared to students in other programs. By comparison, graduates of associate's level programs are most likely to achieve employment in Health, Precision Production, and Construction Trades. In general, the likelihood of employment after graduation increases with higher degree levels and for lower-level certificate or associates programs that incorporate job-aligned technical training.

Certificates and Short-term Credentials

As enrollment in two- and four-year programs has decreased, students are increasingly obtaining certificates.²³ Students enrolled in associates-level degree programs often earn certificates in pursuit of an associates degree, which allow students to incorporate or “stack” certificates into higher degree levels. Available evidence on short-term credentials demonstrates a wide range of value to employers and workers. The uptick in certificates awarded in Indiana is encouraging in the sense that five years after graduation, those who obtain certificates have an annual median wage that is about \$5,000 more than those with only a high school diploma. However, median wages for certificate graduates are about \$3,500 below Indiana’s livable wage of \$37,600 per year. More analysis is needed on certificates to fully capture career outcomes, but students are encouraged to seek out detailed information on graduate earnings, employment outcomes, and stack-ability before enrolling in certificate programs.

RETAINING INDIANA’S POSTSECONDARY GRADUATES

Indiana benefits from a robust system of higher education that produces large numbers of degree completers who will need jobs after graduation. To realize its economic growth potential and remain competitive, Indiana will need greater shares of postsecondary graduates to fill local employer demand for educated talent. Indiana enrolls 2.26 non-resident students in Indiana postsecondary institutions for every resident student who attends college out of state. On an annual basis, this brings in 10,000 additional postsecondary students into the state, making Indiana a lead net importer of postsecondary students (5th largest net student migration).²⁴ Every effort should be made to retain and employ these graduates within Indiana’s borders.

Starting in 2009, Indiana began retaining more graduates in state for employment or pursuit of additional postsecondary education than were lost to other states.²⁵ By 2015, Indiana was retaining graduates for employment or re-enrolling almost 5,000 more public postsecondary graduates than were not retained. However, this trend appears to be reversing - by 2017, Indiana retained or re-enrolled only 2,000 more graduates than were not retained. While the overall trend in the last decade is positive, recent year figures show a slowdown in retention totals and acceleration in students not employed or enrolled upon graduation. See graph (pg. 24).

²³ Indiana Management Performance Hub

²⁴ IPEDS Data Explorer, Table 4. Number of first-time degree/certificate-seeking undergraduate students enrolled, residence, and migration at Title IV institutions, by state or jurisdiction: Fall 2020. [The Integrated Postsecondary Education Data System](#)

²⁵ Indiana Commission for Higher Education. 2020 College Value Report. See: <https://www.in.gov/che/college-value-reports/>

Indiana must continue to improve the number of postsecondary graduates retained and employed in-state.

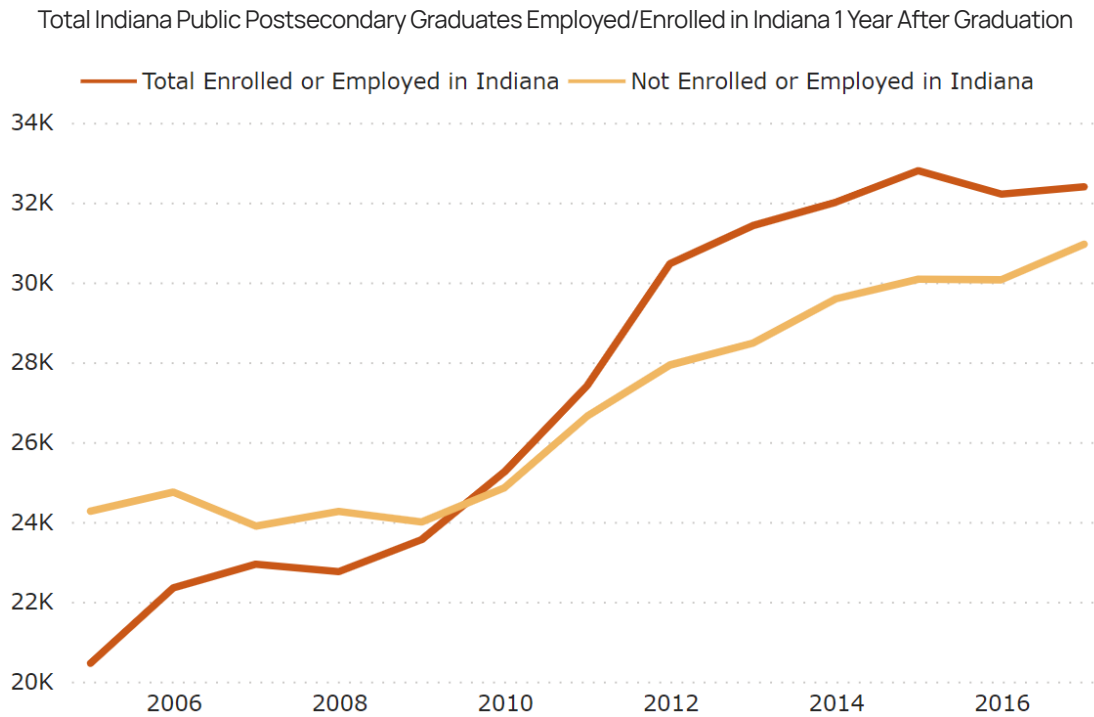


Figure 24. Note: Graduates of Indiana public institutions only.

Source: Indiana Commission for Higher Education. 2020 College Value Report. See: <https://www.in.gov/che/college-value-reports/>

Also of concern are the differing retention rates by degree level. Bachelor’s, master’s, and doctorate-level graduates work or re-enroll outside of Indiana in far greater numbers than students with lower degree award levels. Benefiting from growth in overall student enrollment in public institutions, Indiana is employing or re-enrolling more graduates earning a bachelor’s degree or greater over time. However, in-state employment and enrollment growth for bachelor’s degree and graduate students has been more modest in comparison to growth in students not employed or enrolled in Indiana.

Indiana will benefit from the growing retention of Indiana residents who graduate from an in-state postsecondary institution. This is occurring in total number of resident graduates employed or enrolled in Indiana and the percent of resident graduates employed or enrolled in Indiana.²⁶ Non-resident students are also staying in Indiana for employment or additional education in high numbers. However, the overall share of non-resident graduates staying in-state has declined in recent years. These trends demonstrate that in-state graduates are increasingly likely to remain in Indiana for additional working and learning, while non-resident students are increasingly likely to leave Indiana upon graduation. In light of accelerating employer demand, each student who leaves the state represents a missed opportunity to attract and retain badly needed workers who are physically in Indiana and in search of careers. See graph (pg. 25).

²⁶ Indiana Commission for Higher Education. 2020 College Value Report. See: <https://www.in.gov/che/college-value-reports/>

The state should work to attract and employ the growing number of non-resident students who graduate from in-state institutions.

Percent of Indiana Public Postsecondary Graduates Employed/Enrolled in Indiana 1 Year After Graduation by Residency Status

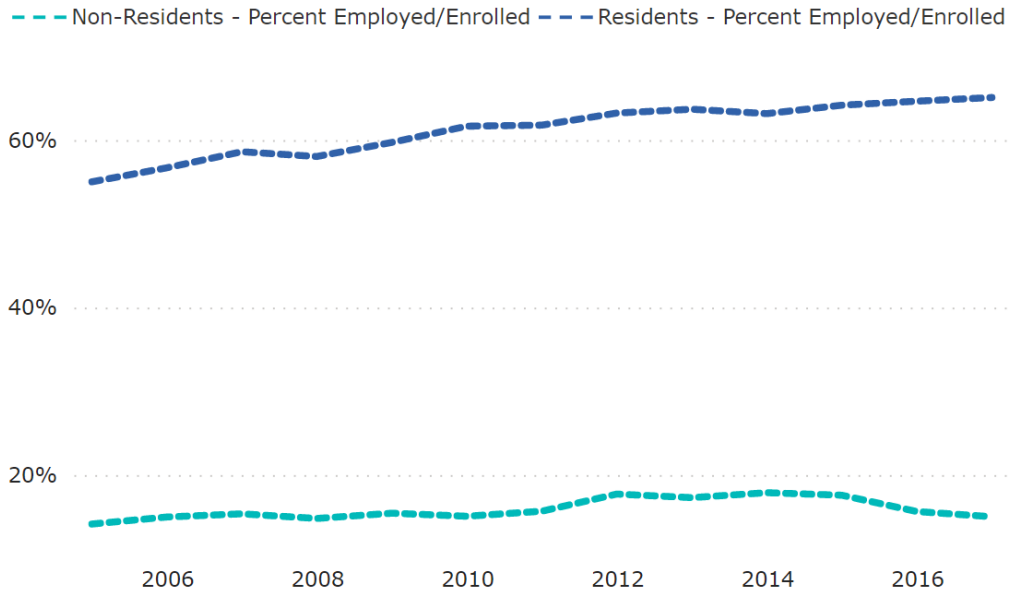


Figure 25. Note: Graduates of Indiana public institutions only.

Source: Indiana Commission for Higher Education. 2020 College Value Report. See: <https://www.in.gov/che/college-value-reports/>

Employment within Indiana also varies by award level and degree program of study. Graduates of programs aligned with high-demand occupations tend to be most likely to obtain employment elsewhere. At the bachelor’s and master’s level, engineering and computer science graduates leave Indiana at comparatively high rates. It is also generally the case that graduates of higher degree award levels in a given field of study find employment out-of-state than lower award levels.

JOB TRAINING AND WORK-BASED LEARNING

Work-based learning (WBL) allows students to understand certain occupations and improve employability through practical experience, workplace engagement, and on-the-job learning. WBL can range from career exposure to job-training for a specific role and be offered at secondary or postsecondary education levels. For students, WBL can provide career awareness, competency development, and real-world training through practical experiences that lead to academic credit. WBL is increasingly used to bridge gaps between classroom learning and workplace experiences. Common forms of WBL include job shadows, internships, student capstone experiences, on-the-job-training, youth apprenticeship, and registered apprenticeship.

Indiana education and workforce agencies are in the process of transitioning to the State's Next Level Programs of Study, which incorporate many forms of WBL in secondary CTE course offerings.²⁷ Currently, available data on WBL is extremely limited, with the exception of federal registered apprenticeships. The Next Level Programs of Study rollout is expected to include additional data collection and reporting for WBL experiences to track student outcomes.

Registered apprenticeships are one of many WBL options students can pursue. These apprenticeships are offered through the U.S. Department of Labor and include job training alongside academic programming that leads to a nationally recognized industry certification. Nearly all registered apprenticeships are aligned with skilled trade occupations and industries, with large differences among aligned occupation groups in wage gain after completion. Since 2014, the number of active apprentices has grown significantly.²⁸ Because registered apprenticeships can last between 3 to 7 years, growth in completions is expected follow in coming years.

Looking at the demographic composition of registered apprentices, there are notable age, race/ethnicity, and gender participation gaps. Unlike students in traditional postsecondary programs, registered apprentices tend to be older in age and more experienced. When broken out by gender, it is clear that women are significantly less likely to participate in and complete a registered apprenticeship. Additionally, Black students are disproportionately more likely to participate in and complete registered apprenticeship experiences. Finally, registered apprenticeship has been underutilized in the high school space. Momentum exists to connect more young adults to these programs starting in high school to ensure they have a strong path to further education and employment. It is important that all workers and students receive access to quality WBL experiences to gain workplace exposure and skills. Indiana has made major strides in recent years to integrate WBL in educational and technical programming, but more work remains to develop and deliver solutions with enough scale to meaningfully impact labor market headwinds facing the state.

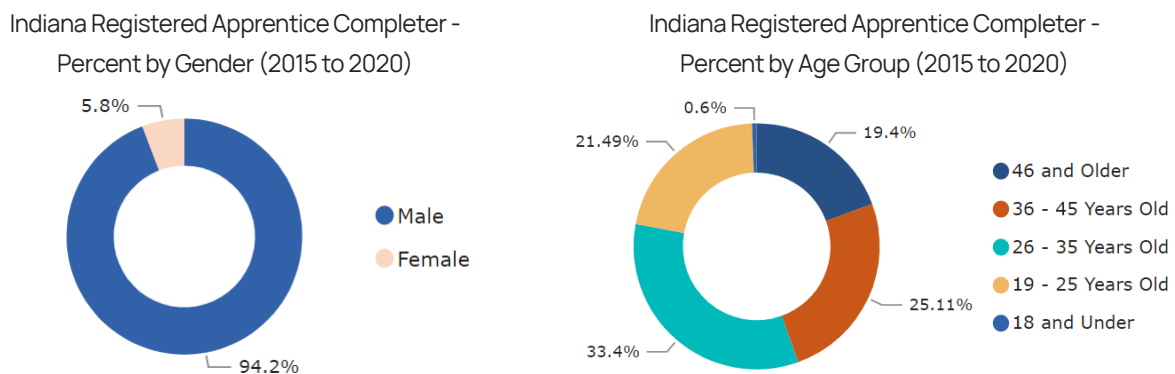


Figure 26. Note: Registered apprenticeships statewide.

Source: U.S. Department of Labor. Employment and Training Administration. See: [FY 2021 Data and Statistics | U.S. Department of Labor \(dol.gov\)](https://www.dol.gov/agencies/eta/apprenticeship/about/statistics/2021#)

²⁷ Indiana Governor's Workforce Cabinet. NLPS Review Document. See: https://www.in.gov/gwc/cte/files/NLPS-Review-Doc_Phase2_4.29.22.pdf

²⁸ U.S. Department of Labor. Employment and Training Administration. See: <https://www.dol.gov/agencies/eta/apprenticeship/about/statistics/2021#>

KEY TAKEAWAYS: ALIGNMENT OF SUPPLY AND DEMAND

Too few students are concentrating in high-demand fields.

Indiana's employers need workers educated and trained in high-demand fields of study. It's not enough to simply graduate more college-educated individuals – future workers must enter the workforce with job-relevant knowledge, skills, and abilities.

Too few postsecondary-educated students remain in Indiana after graduation.

Indiana needs more workers with postsecondary credentials. To meet projected growth in employer demand for workers with greater levels of education, Indiana must retain more graduates from its postsecondary institutions. Varying levels of success can be achieved by attracting out-of-state workers or re-enrolling the current workforce, but the simplest solution with long-term benefits is to attract and retain recent graduates to local jobs.

Work-based-learning (WBL) should be expanded as a core education and training strategy.

Quality WBL ensures that student learning and curricula are aligned with employer needs and good career paths. WBL can better prepare students for jobs and is especially beneficial to minority students.²⁹ While it's unfortunate that more comprehensive data isn't available on WBL, there is a broad recognition that work and learn adoption throughout K-12 and postsecondary systems is at sub-optimal levels. WBL is a key strategy for helping employers think about long-term talent pipeline development. These programs not only provide valuable experience to the students, offering a head start on training and career development, but also an opportunity for other students to learn about local employers and jobs through their peers. For younger students, WBL can provide pathways to earn certificates or postsecondary credit while working and completing high school. In areas of clear misalignment between supply and demand, WBL offers not only an increase in awareness of needed skills, but an alternate option for employers to bring on talent and contribute to employer-relevant training.

Key Recommendations

The opportunities outlined below are intended as recommendations that address alignment gaps and provide equitable opportunities to obtain quality jobs. There are many stakeholders throughout Indiana committed to addressing current and future gaps between employer demand for talent and individuals' knowledge, skills, and credentials. Despite differences in mission, geography, and constituent scope, the problems outlined in this report are shared in varying degrees throughout the state. These shared challenges can be tackled through collaborative, scaled efforts, and build upon the substantial work already underway. It is our hope that these recommendations can be used to make strides toward improving economic outcomes and prosperity for Hoosiers through a high-functioning education to work talent pipeline.

Aligned Advising

There are not enough students pursuing and completing degrees, credentials, and training programs that align with employer demand. Available research indicates that strong career advising services can improve students' education experience and employment outcomes. This is especially true for first

²⁹ Benefits of WBL: <https://cci.stradaeducation.org/pv-release-march-16-2022/>

generation and minority students.³⁰ Strong advising systems that inform students of these careers enable them to make choices about their career paths that will allow them the best opportunities for immediate employment in good jobs upon completion of their education and training. Career service support should proactively engage students and ensure students understand career implications of decisions made within the academic experience, particularly those related to job qualifications, job openings, and earning potential.

Statewide Career Advising Commission

A statewide commission should be established to build on the work begun by regional leaders to design a K-12 career advising framework through the evaluation of best practices. Indiana's career advising system consists of innumerable practices and programs throughout the K-12 and postsecondary landscape that should be synthesized for analysis. The commission should develop findings and recommendations to enable delivery of customized college and career advising to every student, particularly students from low-income households and neighborhoods.

Aligned Learning

The labor market is changing at an increasingly rapid rate, placing an increased importance on ensuring students graduate with relevant and marketable knowledge, skills, and abilities. Up-to-date career and technical coursework should combine career exploration with employer-valued knowledge and skills. Importantly, quality career-aligned learning should provide students with a clear view of education, training, or experiential qualifications to work in each field.

Work-based learning is a key point of connection between in-class learning and real-world job readiness. According to the Department of Education's "Baccalaureate and Beyond" longitudinal survey, students of color are generally less likely to hold internship opportunities. Black, Hispanic/Latino and female graduates were least likely to hold a paid internship.³¹ High-quality work-based learning should be integrated throughout the educational experience, standardized within institutional course offerings, and normalized in student instruction practices.

Education and employer partnerships are foundational to initial development and successful implementation of aligned learning systems. As co-creators of talent, employers can and should actively engage in education processes to train their employees of tomorrow, including curriculum development, instruction, and experience delivery. Employer engagement with education systems must improve to meet accelerating and changing labor market conditions. In the modern economy, the useful lifecycle of individual skills is constantly shortening. Employers should recognize this new paradigm and react with more direct engagement in education and training processes.³² Beginning in middle school and extending into high school, employers of all sizes should provide career exploration, engagement, and experience opportunities, such as youth apprenticeship.

Certificate Research and Analysis

A comprehensive study and evaluation of certificates programs and training providers is needed to understand Indiana's certificate landscape. The state's certificate landscape is rapidly expanding and

³⁰ See Undergrad Career Prep Experience Study: <https://cci.stradaeducation.org/pv-release-dec-8-2021/>

³¹ See: Strada Education Network. The Power of Work-Based Learning. See: [031522-PV-report.pdf \(stradaeducation.org\)](#), Page 10

³² See: [Deloitte Report](#)

changing, with significant activity not captured in established reporting processes. An analysis of this kind should capture these changes and critically evaluate certificate value, stack-ability, and job placement.

Transcript Clearinghouse

To improve postsecondary student enrollment and retention outcomes, Indiana should develop a secure student transcript clearinghouse to provide postsecondary institutions direct access to high school student transcript information. Access should extend exclusively to Indiana's regionally accredited postsecondary institutions and be used to attract, recruit, enroll, and retain Indiana high school students.

FAFSA Completion

Indiana should explore a policy of integrating FAFSA completion as a graduation requirement. Multiple states have pursued a version of this policy, including Louisiana, Texas, and Alabama, and have seen meaningful college enrollment increases.³³ Indiana should follow these states' lead and pursue a policy that formally integrates FAFSA completion within the high school experience and leads to stronger college enrollment outcomes for Indiana high school graduates.

Streamlined Work-based Learning Reporting

Indiana needs to strengthen its data collection and reporting processes for work-based learning through a streamlined, employer-friendly system. Policymakers should explore opportunities to integrate student-level work-based learning outcome reporting within or alongside existing unemployment insurance reporting platforms and processes. This system should be highly usable for employers, provide linkage to Indiana's Graduation Pathways, and lead to new work-based learning opportunities for students and employers alike.

Employer Training Grant Expansion

Employer training grants should be expanded and aligned with industries/occupations that require middle and high skills and lead to higher paying jobs. The current grant program is designed to train individuals for "middle skill occupations" and requires a minimum wage of \$17 per hour for new employees or 3% pay increase upon training completion for existing employees.³⁴ A broadened scope targeting both middle and high skill occupations would allow workers to advance along more comprehensive career ladders that lead to higher paying good jobs over the long-term. Additionally, improved grant design and reporting would yield data on trends in investment in training made by businesses that could also be leveraged for economic development. Talent development leads to better innovation and economic competitiveness for businesses.

Education and Training Provider Rewards

Education and training providers should be rewarded and recognized for increased enrollment, persistence, and completions in high demand fields of study (measured in total and disaggregated). Student outcome metrics should align with meaningful incentive structures that encourage continuous improvement.

³³ See: Digging Deeper into Universal FAFSA Impacts in Four States - National College Attainment Network (ncan.org)

³⁴ See: DWD ETG Flyer: https://www.in.gov/dwd/files/NLJ_ETG_Flyer.pdf; ETG Fact Sheet: <https://www.in.gov/dwd/files/NLJ-ETG-Fact-Sheet.pdf>

21st Century Scholars Automatic Enrollment

Indiana's 21st Century Scholars program provides income-eligible students up to full tuition and enumerated fees at Indiana postsecondary institutions.³⁵ The current policy requiring sign up before the end of 8th grade contributes to under half of eligible students enrolling in the program.³⁶ Students who meet 21st Century Scholar income and academic performance requirements should have access to scholarship funds and program benefits. A policy of automatic student enrollment would encourage more high school students to pursue college and help address Indiana's declining postsecondary enrollment trends.

³⁵ See: <https://learnmoreindiana.org/scholars/>

³⁶ See: 2022 College Readiness Report, page 16: https://www.in.gov/che/files/2022_College_Readiness_Report_06_20_2022.pdf



Appendix



Appendix

EMPLOYMENT OUTCOMES BY DEGREE PROGRAM

● Graduates Employed In-State ● Graduates Employed Out-of-State ● Graduates Jobless or Marginally Employed

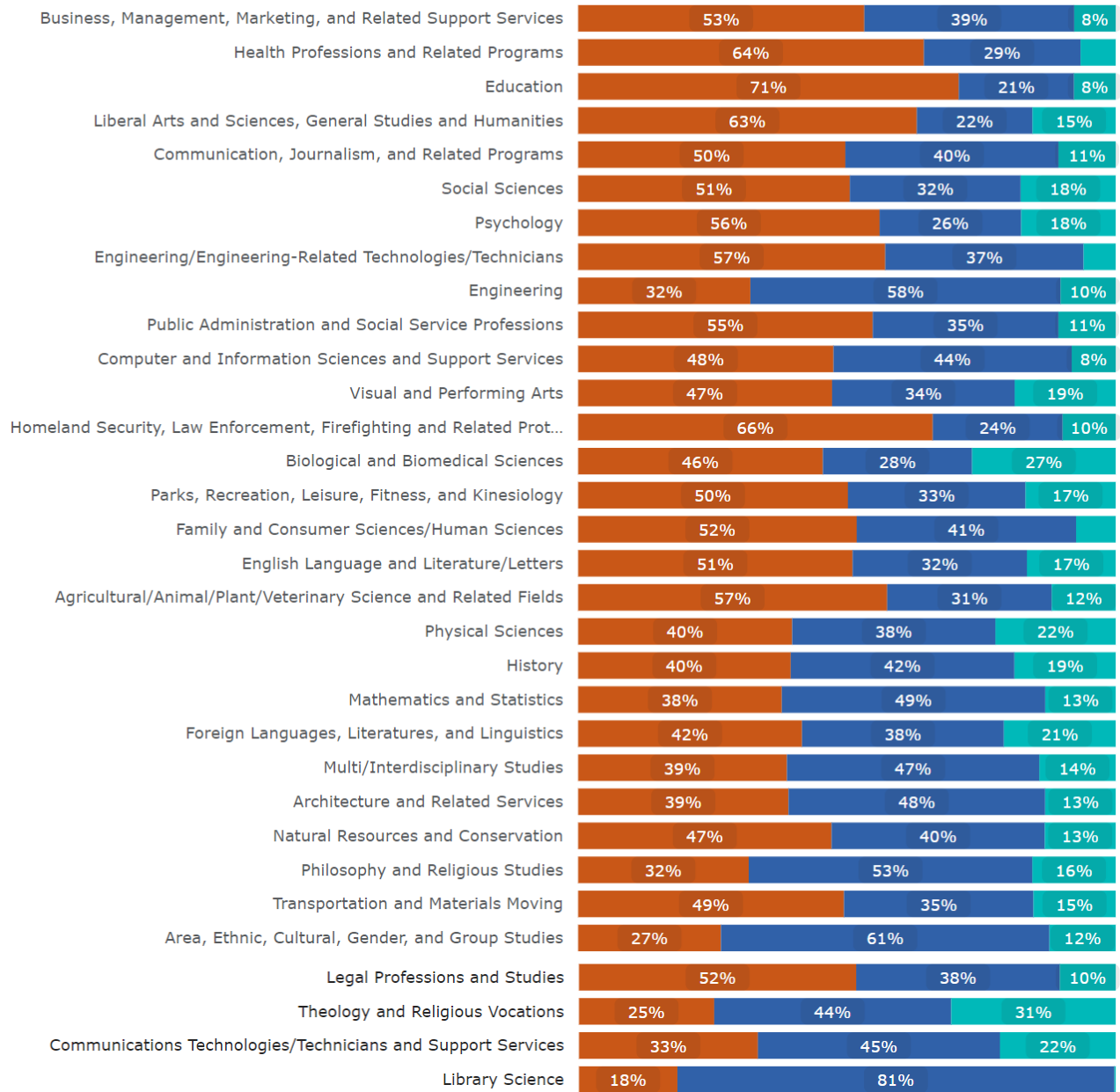


Figure 29. Indiana Postsecondary Graduate Employment Outcomes by Degree Category (CIP 2).

CERTIFICATE GROWTH AND WAGE

Figure 30 below, shows contextualized growth in certificate programs by providing median wage levels one year after graduation of individuals completing an Indiana certificate program. Programs in red were found to have median wage levels below the livable wage of \$37,440. Fortunately, there is high growth in many certificate programs that generate wage above the livable standard. However, there is also significant growth in certificate programs that earn at or well below livable wage levels. Given this significant growth and increasing reliance on certificate programs for career readiness, it is important to thoroughly understand trends and student-level outcomes through research and analysis that informs policy makers and prospective students.

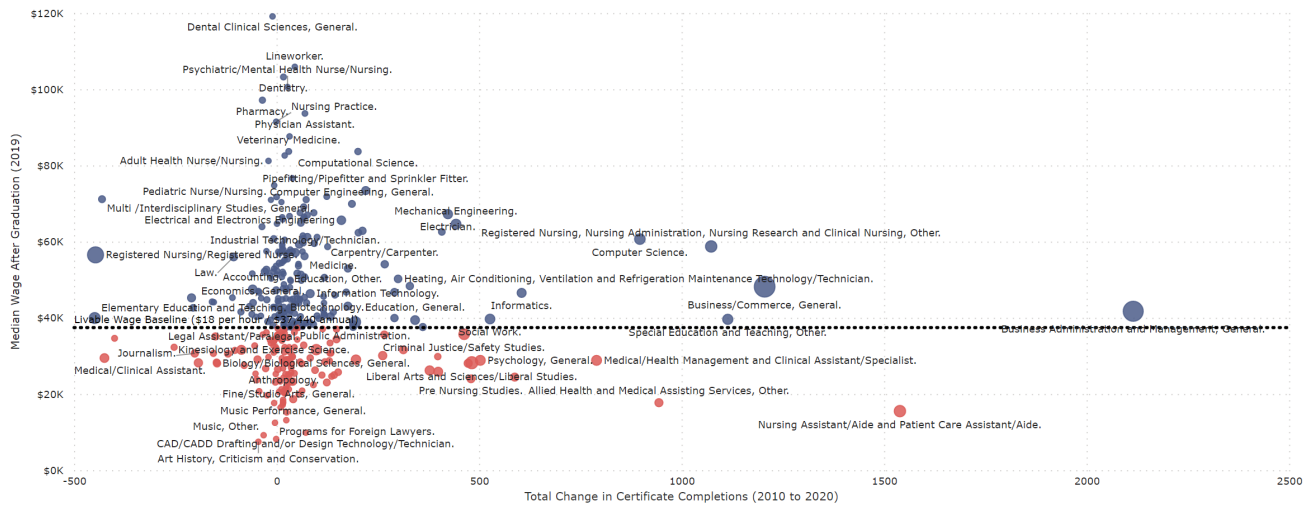


Figure 30. Certificate Median Wage One Year After Completion and Percent Change in Total Completions (2010 to 2019).

CHANGE IN DEGREE PROGRAM COMPLETIONS AND ALIGNED JOBS

Figure 31 below, attempts to demonstrate this misalignment by mapping percent change in jobs (x-axis, positive growth in green and negative in red) against percent change in degree completions (y-axis) in Indiana from 2010 to 2020. Ideally, all degree program completion would grow alongside aligned jobs (top right quadrant) or reduce with declines in aligned jobs (lower left quadrant). However, many degree completions are growing in declining occupations (top left quadrant) and declining in growing occupations (bottom right quadrant). These scenarios represent missed opportunities for employers and future workers alike. See graph (pg. 31).



Glossary

Glossary

The following terms and concepts apply throughout this report. They are provided verbatim from the [EMSI Burning Glass Glossary web page](#).

Automation Index

The automation index captures an occupation's risk of being affected by automation using four measures:

- % of time spent on high-risk work
- % of time spent on low-risk work
- Number of high-risk jobs in compatible occupations
- Overall industry automation risk

The automation index is presented as a scale with a base of 100. An automation index greater than 100 indicates a higher-than-average risk of automation; an automation index less than 100 indicates a lower-than-average risk of automation.³⁷

CIP-to-SOC Mapping

The CIP-to-SOC mapping connects educational programs with target occupations, showing potential higher ed talent pipelines into occupations. Emsi's CIP-to-SOC mapping is based on the National Center for Education Statistics' CIP-to-SOC mapping. Emsi has made modifications to the mapping to make it more useful.³⁸

Degree Completer (Graduates)

A student who receives a degree, diploma, certificate, or other formal award. In order to be considered a completer, the degree/award must actually be conferred. Emsi sources completer data from IPEDS.

Degree Completions

The number of degrees or certificates conferred for a specific course of study in a given year. Includes all award levels. May be greater than the actual number of students who graduated, as Emsi includes both primary and secondary majors. Both primary and secondary majors are included because a graduate with a dual major in mathematics and electrical engineering should be considered part of the potential supply for occupations that map to both majors.

The reference period for a completion year is July 1 of the prior year through June 30 of the current year. For example, the 2017 Completions metric is a count of completions from 7/1/2016-6/30/2017.³⁹

Employed

In Emsi data, employed refers to any person who is currently paid as an employee or is self-employed. It is important to note that Emsi employment counts count jobs, not people.

³⁷ For information on the methodology for the automation index, see [this article](#).

³⁸ NCES.

³⁹ NCES, IPEDS.

Graduate

Emsi uses the terms “completion” and “graduate” interchangeably, and it is important to understand what is meant. Both terms refer to the number of degrees awarded rather than the number of students who graduated. Although students may graduate with multiple awards (e.g. “double majors”), our source data do not link awards to students.

Hires

The number of hires for the selected timeframe. When compared with Unique Postings, Hires shows how much actual hiring activity there is relative to the amount of posting activity. A hire is reported by the Quarterly Workforce Indicators when an individual’s Social Security Number appears on a company’s payroll and was not there the quarter before. The QWI program produces a comprehensive tabulation of employment and wage information for workers covered by State unemployment insurance (UI) laws, similar to the QCEW program. For more information from the Census Bureau on how hires data is collected, see [this publication](#). For more information on how Emsi calculates hires for occupations, see the [methodology article](#).⁴⁰

Industry

A group of businesses that produce similar goods and services, and share similar production processes for creating the goods and services they sell. Industries are classified using NAICS codes. Note that in the NAICS system, what a business produces is given less importance than the process used to create it. See [NAICS](#).

Industry Projections

Emsi projects employment data 10 years into the future. Industry projections are built from Emsi’s final industry data, which is based on the BLS’s Quarterly Census of Employment and Wages (QCEW) dataset.⁴¹ See [this article](#) for a more thorough treatment of Emsi’s industry projections methodology.

Job

A job is any position in which a worker provides labor in exchange for monetary compensation. This includes those who work as employees for businesses (a.k.a. “wage and salary” employees) and proprietors who work for themselves.

Emsi reports employment as annual averages. The exception is the Extended Proprietors Class of Worker (Class 4), which counts proprietors that existed at any time during a given year, because those data are based on tax returns. Employment averages represent jobs, not workers, since one individual may hold multiple jobs.

Due to limitations of source data, both full- and part-time jobs are included and counted equally, i.e. job counts are not adjusted to full-time equivalents. Geographically, payroll jobs are always reported by the place of work rather than the worker’s place of residence. Conversely, self-employed and extended proprietors are always reported by their place of residence. Unpaid family workers and volunteers are excluded from all Emsi data.⁴²

⁴⁰ Quarterly Workforce Indicators (QWI) from the Census Bureau and Emsi’s proprietary employment data

⁴¹ [QCEW](#)

⁴² Emsi data based primarily on the [Quarterly Census of Employment and Wages \(QCEW\)](#) from the [Bureau of Labor Statistics \(BLS\)](#) and the [Bureau of Economic Analysis \(BEA\)](#).

Job Projection Methodology

Emsi Burning Glass provides projected employment values, by industry and occupation, for the next 10 years from the current year. These projections are built under the assumption that past trends continue unchanged into the future. We first project industry employment data, and then adjust the projection trends to data from the BLS Employment Projections program. We then calculate occupation projections by multiplying these projected industry values by projected regional staffing patterns.

It is clear that the recent pandemic-induced recession has had and will continue to have a large and diverse impact on industry and occupation employment. While neither Emsi Burning Glass nor the BLS have not changed projection methodologies to include assumptions about the changing economy in the wake of the recession, the BLS continues to evaluate the assumptions underlying their methodology.

For further information see:

- [Does Emsi Burning Glass account for the COVID pandemic recession in employment projections? – Knowledge Base \(emsideata.com\)](#)
- [Why Don't Emsi Burning Glass Projections Match BLS or State Projections? – Knowledge Base \(emsideata.com\)](#)

Labor Force

Labor force encompasses all employed individuals as well as individuals seeking jobs.

Occupation

The term occupation refers to professions or careers in the workforce. In Emsi data, occupations are differentiated from jobs, as jobs show the count of positions held within a certain occupation. For example, Health Educators would be considered an occupation; in a report focused on the Minneapolis-St. Paul-Bloomington, MN MSA, there might be 970 currently held jobs for Health Educators.

Openings (Job Openings)

A combination of both new jobs and [replacement jobs](#) constitutes total openings. The annual openings figure is derived by dividing total openings by the number of years in the user's selected timeframe.⁴³ For example, an occupation showing 130 openings between 2016 and 2026 would result in an annual openings figure of 13. For more information on how Openings is calculated, see [this article](#).

Program / Program of Study / Area of Study/ Degree Program

Emsi data uses the term program in reference to select courses offered at accredited colleges or universities. Programs are oriented toward a specific occupation, and completion of these programs is often signified by a specific award level, such as Baccalaureate, Master's, and Doctorate degrees.

Replacements

Replacements are jobs that will need to be filled by new hires due to existing workers leaving the occupation. Replacements are part of the Openings calculation (Openings = Replacements + Growth). For more information on how Replacements are calculated, see Emsi's [methodology for Openings](#).

⁴³ Emsi's proprietary employment data, combined with occupation-specific percentages from the [U.S. Bureau of Labor Statistics Employment Projections](#) program.

Standard Occupation Classification (SOC)

The Standard Occupational Classification (SOC) system is used by Federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of about 775 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form about 450 broad occupations, about 95 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases skills, education, and/or training, are grouped together.

The SOC system uses hyphenated codes to divide occupations into four levels: major groups, minor groups, broad occupations, and detailed occupations.

29-0000: Healthcare practitioners and technical occupations (major group)

29-1000: Health diagnosing and treating practitioners (minor group)

29-1020: Dentists (broad occupation)

29-1021: Dentists, general (detailed occupation)

The SOC classification system was updated in 2010, and the update to the 2018 classification is currently happening across various government LMI datasets. For more information on Emsi's use of SOC codes (including departures from the standard classification), see [this article](#).

Typical Entry Level Education

The education level most often needed to enter an occupation. Typical entry-level education is reported at the national level, so alternate paths to employment may exist in a region of study.⁴⁴

Unemployed

An estimate of total unemployed persons by industry or occupation in a region. Emsi uses LAUS as the basis of its unemployment data, which uses a definition of unemployment roughly equivalent to U3, the most widely used measure. Available by county for all 2-digit NAICS and 2-digit SOCs.⁴⁵

Unique Job Postings

Unique Job Postings is the number of deduplicated job vacancy advertisements scraped from over 45,000 websites. [Deduplication](#) is the process of identifying duplicate job postings and only counting one of the duplicates. The unique posting count is the count of postings after the deduplication process has taken place. The [total posting count](#) is the count of postings before deduplication. For example, if a user runs a report that returns 12 total job postings and 2 unique job postings, this means that the 12 postings contained 10 duplicates and only 2 unique job advertisements.

⁴⁴ BLS' [Education and training assignments by detailed occupation](#)

⁴⁵ [LAUS](#), combined with CIU and Emsi's proprietary employment data.