NEW AMERICA

May 2019

Automation Potential for Jobs in Elkhart-Goshen

Molly G. Martin, Margaret Streeter, Matthew Schwartz, & Molly Kinder

Last edited on June 03, 2019 at 5:57 a.m. EDT

Acknowledgments

We would like to thank the following for their support in this research: Burning Glass, Matthew Walsh of Burning Glass, Lex Dennis of the Drucker Institute / City of Lifelong Learning project, and Kristin Sharp.

About the Author(s)

Molly G. Martin is the director of New America Indianapolis—a National Network hub launched in 2017 to focus on the innovative grassroots solutions Hoosiers are developing to make the Circle City more livable, resilient, and equitable.

Margaret Streeter is the Engagement Coordinator for the New America National Network and undertakes research, public programming, and community outreach with Work, Workers, and Technology.

Matt Schwartz is an intern with the program on Work, Workers, and Technology.

Molly Kinder is a senior advisor on Work, Workers and Technology as well as the New America National Network. She is also a fellow at Georgetown University's Beeck Center for Social Impact & Innovation and adjunct faculty at Georgetown's McCourt School of Public Policy, where she is teaching a graduate seminar on the social, economic and policy implications of AI.

About New America

We are dedicated to renewing America by continuing the quest to realize our nation's highest ideals, honestly confronting the challenges caused by rapid technological and social change, and seizing the opportunities those changes create.

About Work, Workers, and Technology

Today, work as we know it is shifting, and rapidly. Advanced technologies are changing the demand for skills, the nature of occupations, and what is required to earn a good living. Jobs are no longer so clearly defined. Workers cannot expect to stay in one job or industry for 40 years, while experience and seniority doesn't guarantee advancement. As a result, more people are proactively creating jobs for themselves, such as in creative fields or the gig economy. Automation and artificial intelligence drive some of these changes and will continue to profoundly change what it takes to earn a good living in the future -- a recent McKinsey study found that 45 percent of job activities could be automated with existing technology.

Contents

Introduction

Work as we know it is shifting rapidly. Over the next decade and beyond, how will artificial intelligence and automation change work and opportunity in cities like Elkhart and Goshen, Ind.?

The Elkhart-Goshen metro area and other communities like it across the country will be at the front lines of this change. Elkhart and Goshen are both manufacturing stalwarts in Indiana—the most manufacturing-intensive state in America—and are dominated by automotive-related production. Elkhart is perhaps best known as the recreational vehicle (RV) manufacturing capital of the world, making it a reliable bellwether of (and favorite political emblem during) economic booms and downturns. It is a dramatic understatement to say that the region understands the opportunities and hardships of industry change, worker displacement, and recovery. But this understanding does not necessarily translate to a cohesive or shared vision for moving forward in the face of automation.

For one, automation in the RV industry is not viewed as a certain or predictable force. When business is steady and pay "on the floor" is good, the talent pools are deep and it is difficult to interrupt the momentum to introduce more automation, especially among small to mid-sized RV producers. Michael Hicks, director of the Center for Business and Economic Research at Ball State University, says, "What ought to worry Elkhart is not the business cycle—not the recession to recoveries—those come and go. What they really ought to be worried about is at some point there's going to be a very strong turn toward automation of that industry. I don't know if it's going to happen in 10 years or 20 years."[1]

The prospect of business experiencing a severe slowdown as it did during the Great Recession makes the long-term costs of automation, rather than the immediate costs of reducing payroll, a difficult pill to swallow. There is also a cultural driver. Elkhart-Goshen is a region that prides itself on work ethic and multigenerational relationships with employers. Here, automation is more than a business consideration, it's a very personal one.

RV and automotive production are not the only industries in the region; automation and artificial intelligence are considerations for employer and employee talent and mobility across all local industries. And it is not lack of sophistication or vision that sometimes leaves local leaders at an impasse as to how to best plan to prepare their community and workers. Rather, it is a conversation that is happening against the backdrop of a region that is significantly more vulnerable to change—one that has a lower educational attainment and, in recent history, a more disproportionate credential-to-earnings ratio than much of America.

"What [Elkhart] really ought to be worried about is at some point there's going to be a very strong turn toward automation of that industry. I don't know if it's going to happen in 10 years or 20 years."

In the Elkhart-Goshen metro, more people are still able to earn a higher income without postsecondary education, which is a trend that is fading quickly and is unlikely to be sustainable.

Even in the face of challenges, the Elkhart-Goshen metro area leadership is energized, innovative, and committed, making it an excellent candidate for a partnership with New America. To help Elkhart-Goshen prepare for this future, New America kicked off a ShiftLab in December 2018, with support from Walmart Giving. At the December pop-up design lab, many of the greater Elkhart-Goshen region's economic, educational, and civic leaders came together to consider the impact of technology and automation on work in their hometowns. Local leaders, joined by peers and national leaders, will continue to meet throughout 2019 to develop a long-term, place-based vision for opportunity. The Elkhart-Goshen ShiftLab is the first of New America's Rural ShiftLabs, also working in the Uplands Region of southern Indiana, in northwest Arkansas, and in southern West Virginia.

To bring a data-driven lens to ShiftLabs, New America partnered with leading labor market analytics company **Burning Glass Technologies** to conduct a first-of-its-kind study on the likely impact of automation on jobs in the greater Elkhart-Goshen region.[2] We ask: Of the thousands of jobs held by Elkhart-Goshen workers today, which could be performed by existing technology? Which occupations and skills are at greatest risk of automation, and who holds those jobs today? To answer these questions, we combined and analyzed Burning Glass data on the likelihood of a computer being able to do a job using existing technology, as well as Bureau of Labor Statistics (BLS) data on occupations in Elkhart-Goshen and the nation.

To be sure, emerging technologies also will create many jobs, including entirely new jobs that have yet to be conceived. This is a familiar pattern—since 1980, about half of all job growth has come from the creation and expansion of brand-new jobs.[3] On balance, automation and technology may create more jobs than

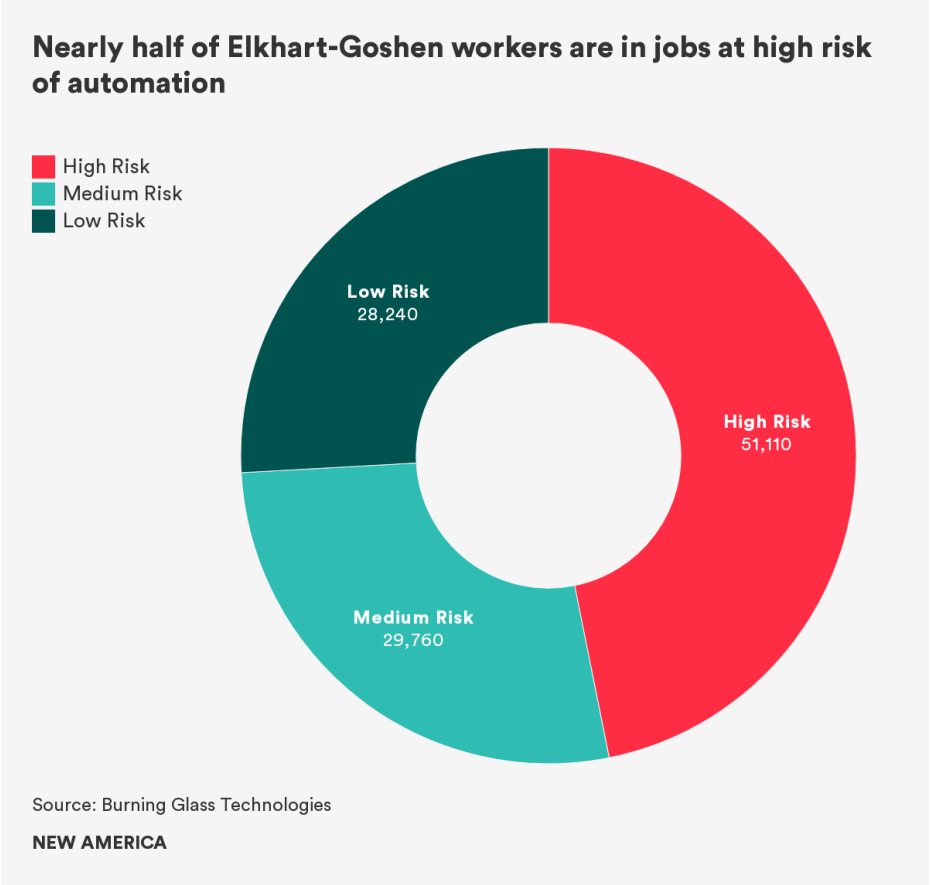
they eliminate, but predictions of the number and types of jobs that will be created are outside the scope of this study.

In the Elkhart-Goshen metro, more people are still able to earn a higher income without postsecondary education, which is a trend that is fading quickly and is unlikely to be sustainable.

The findings of our analysis are clear: Automation will have a widespread impact on jobs in the Elkhart-Goshen region in the years ahead, and especially on low-skilled jobs and low-paid jobs. In some cases, technology will eliminate jobs already at high-risk of automation. In many more cases, technology will change them—sometimes dramatically.

Key Conclusions: Projecting Automation Risk and Job Growth in Elkhart-Goshen

1) **Nearly one in two jobs in the Elkhart-Goshen region are at high risk of automation.** In the Elkhart-Goshen metropolitan statistical area (MSA), 47 percent of all jobs, employing a total of 51,110 people, are at high risk of automation. Another 29,760 people are employed in medium-risk occupations (27 percent) and 28,240 people are in low-risk occupations (26 percent).

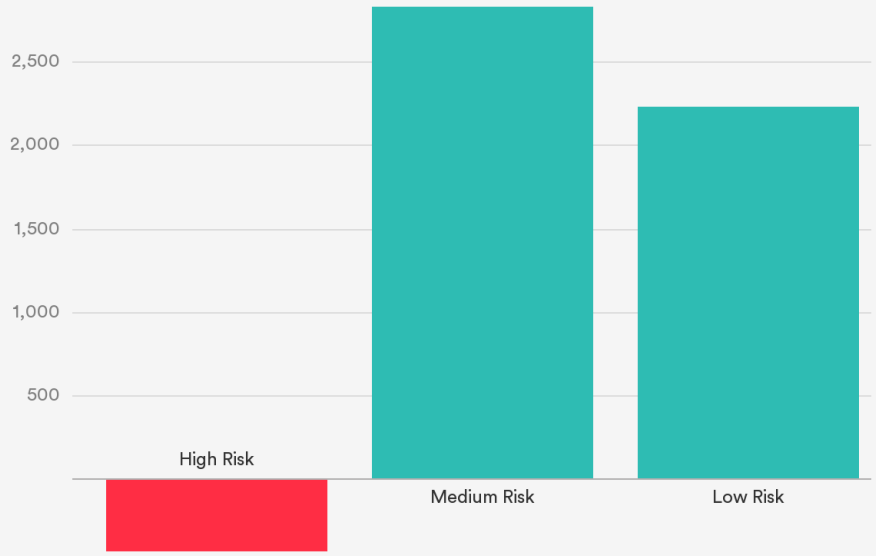


2) **Automation risk in Elkhart-Goshen is significantly higher than the national average.** Compared to the rest of the country, the Elkhart-Goshen region is far more susceptible to automation. In the United States as a whole, only 35 percent of workers fall under the high-risk category. In fact, according to a recent Brookings Institution report, Elkhart-Goshen has the third highest automation risk for all U.S. metro areas.[4]

BLS 10-year job growth projections corroborate a vision for a bearish future for those in the highest risk category. High-risk jobs are predicted to *decline* in raw totals by 2026, shedding 429 positions, meaning they will far underperform on national job growth projections. Much of this is driven by a projected 4,000-job decline in "Team Assemblers," the most common occupation in the region. Meanwhile, medium-risk positions are set to increase by 9.52 percent, while the lowest-risk positions are predicted to increase by nearly 8 percent.

Job Growth and Decline 2016-2026, by Automation Risk

High-risk jobs in Elkhart-Goshen are predicted to far underperform on national job growth projections, losing an estimated 429 jobs over 10 years.



Source: Burning Glass Technologies

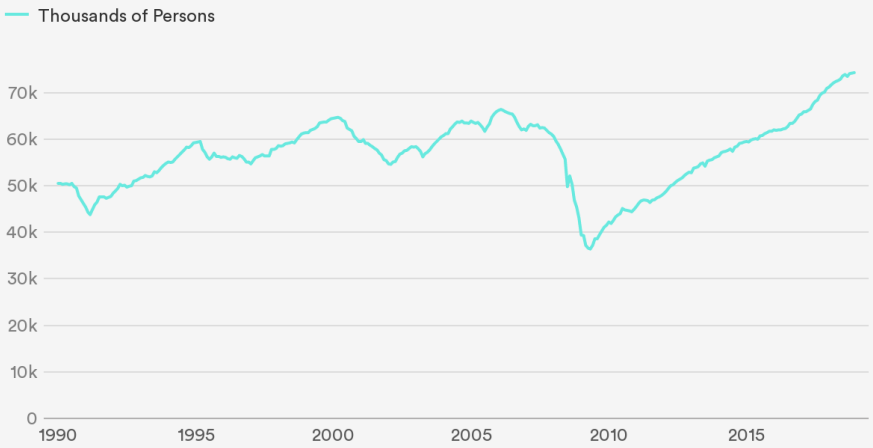
NEW AMERICA

3) **High automation risk stems from the region's manufacturing base and heavy concentration of assembly jobs.** In the Elkhart-Goshen area, widely thought of as the RV capital of the world, employment is heavily associated with the manufacturing of RVs. According to BLS data, the job of "Team Assemblers" employed 21,538 people in 2016—more than the next nine top jobs combined. In total, around 20 percent of the entire regional workforce is occupied in this assembly work. Production jobs like these are some of the highest risk of all occupations to automation. Even in the near term, the BLS projects that the occupation will contract 9 percent statewide by 2026.

In total, around 20 percent of the entire regional workforce is occupied in this assembly work.

4) **Historically, Elkhart-Goshen has bucked some of the national automation trends.** Already, the region has one of the highest rates of entry for robots in the entire country and the highest density of robots of any metropolitan area.[5] Despite the presence of these robots, assembly line employment in RV manufacturing remains robust. The regional RV industry has remained relatively resistant to labor displacement for several reasons. Automation typically hits high-volume production facilities first, whereas RVs are produced slowly, often with high degrees of customization, and so are more similar to residential construction than to many modern automobile production lines. To date, RV manufacturers, unlike the automobile industry, have refrained from investing major capital to automate processes during economic downturns, allowing human labor to fluctuate along with the economy.

Elkhart-Goshen Manufacturing Jobs, by thousands, 1990-2018



Source: Federal Reserve Bank of St. Louis and U.S. Bureau of Labor Statistics, All Employees: Manufacturing in Elkhart-Goshen, IN (MSA) [SMU18211403000000001A], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/SMU18211403000000001A

NEW AMERICA

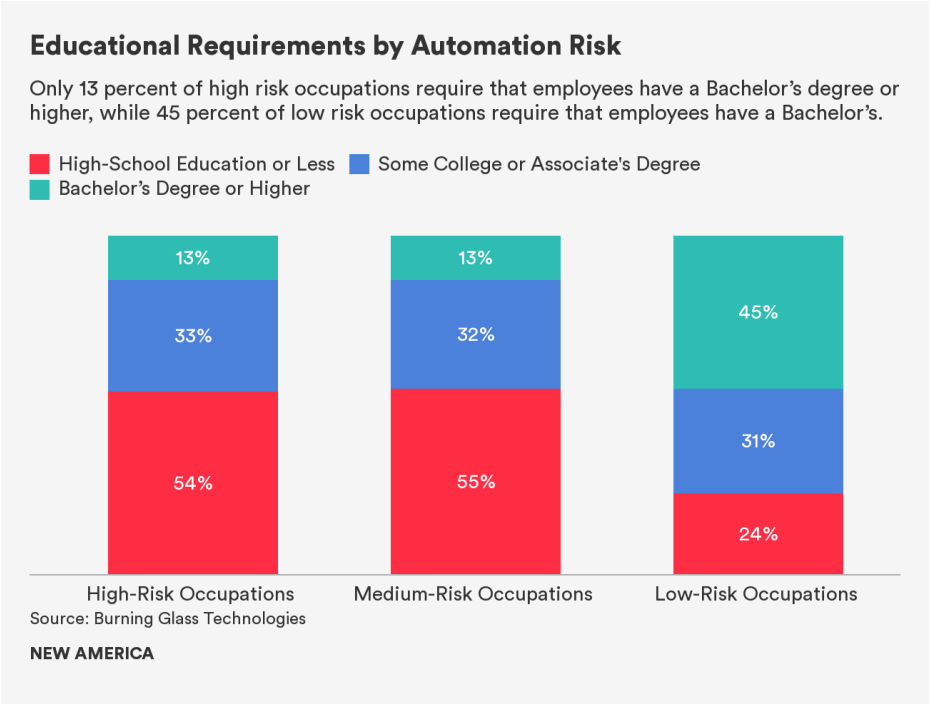
However, the future looks less certain. As Rachel E. Blakeman, community research institute director at Purdue University Fort Wayne, says, "RVs have been one of the most labor-intensive vehicles because it's not automated in the same way as, say, assembly of pickup trucks here in Fort Wayne is. But those days may not last forever and are likely not to."[6]

"RVs have been one of the most labor-intensive vehicles because it's not automated in the same way as, say, assembly of pickup trucks here in Fort Wayne is. But those days may not last forever and are likely not to."

Who Is at High Risk of Automation?

Workers with Less Education

Among workers in the region, and in the nation as a whole, the least-educated workers are at greatest risk of automation. This is especially true of workers in jobs that require a high school degree or less, who comprise 54 percent of workers in high-risk occupations. Only 13 percent of high-risk jobs require a bachelor's degree or higher. Those numbers are flipped for low-risk jobs: 45 percent of low-risk occupations typically require at least a bachelor's degree, while just 24 percent require a high school degree or less.



Workers Who Make Less Money

The jobs at low risk of automation pay approximately twice as much as those at low and medium risk of automation, on average. High- and medium-risk occupations earn a mean salary of $31,923 and $37,664, while low-risk occupations earn an average of $62,635. These local trends reflect similar national trends.

Nationally, 68 percent of Team Assemblers have a high school education or less.

The Eklhart region stands out, however, in the number of high-risk, well-paying jobs that require a high school degree or less. With a mean salary of $42,780, jobs on the assembly line pay significantly higher wages than jobs with similar educational attainment spreads, such as fast food workers, who earn only $19,180 per year. Nationally, 68 percent of Team Assemblers have a high school

education or less. Thus, future contractions of this occupation suggest that without additional training, education, or new high-quality opportunities, these workers are likely to see significant declines in income and job quality.

Average Salary by Automation Risk

Among workers in Elkhart-Goshen, workers at low risk of automation earn on average twice as much as high-risk workers.

Source: Burning Glass Technologies

NEW AMERICA

Top Ten Low-Paying (<$35,000) Occupations in Elkhart-Goshen

	TOP TEN LOW-PAYING (>$35,000) OCCUPATIONS	NUMBER EMPLOYED, 2016	MEAN SALARY
1	Laborers and Freight, Stock, and Material Movers, Hand	3,366	**$29,020**
2	Combined Food Preparation and Serving Workers, Including Fast Food	2,737	**$19,180**
3	Office Clerks, General	2,381	**$33,000**
4	Retail Salespersons	2,262	**$29,000**
5	Cashiers	2,227	**$20,260**
6	Shipping, Receiving, and Traffic Clerks	2,019	**$34,290**
7	Stock Clerks and Order Fillers	1,726	**$29,580**
8	Helpers—Production Workers	1,499	**$29,510**
9	Waiters and Waitresses	1,300	**$22,540**
10	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,143	**$27,340**

Source: Burning Glass Technologies

NEW AMERICA

Top Ten Medium-Paying ($35,000–$65,000) Occupations in Elkhart-Goshen

	TOP TEN MEDIUM-PAYING ($35,000–$65,000) OCCUPATIONS	NUMBER EMPLOYED, 2016	MEAN SALARY
1	Assemblers and Fabricators, All Other, Including Team Assemblers	21,358	**$42,780**
2	First-Line Supervisors of Production and Operating Workers	2,232	**$60,670**
3	Welders, Cutters, Solderers, and Brazers	1,911	**$38,420**
4	Heavy and Tractor-Trailer Truck Drivers	1,562	**$47,330**
5	Customer Service Representatives	1,562	**$40,260**
6	Maintenance and Repair Workers, General	1,496	**$40,440**
7	Inspectors, Testers, Sorters, Samplers, and Weighers	1,466	**$37,230**
8	Bookkeeping, Accounting, and Auditing Clerks	1,342	**$35,900**
9	Registered Nurses	1,334	**$58,050**
10	First-Line Supervisors of Office and Administrative Support Workers	1,056	**$54,350**

Source: Burning Glass Technologies

NEW AMERICA

Top Ten High-Paying (>$65,000) Occupations in Elkhart-Goshen

	TOP TEN HIGH-PAYING (<$65,000) OCCUPATIONS	NUMBER EMPLOYED, 2016	MEAN SALARY
1	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,194	**$74,390**
2	General and Operations Managers	1,950	**$111,920**
3	Accountants and Auditors	791	**$69,060**
4	Industrial Production Managers	567	**$97,590**
5	Mechanical Engineers	403	**$67,100**
6	Financial Managers	386	**$114,870**
7	Industrial Engineers	376	**$66,300**
8	Sales Managers	266	**$123,270**
9	Sales Representatives, Services, All Other	241	**$66,160**
10	Medical and Health Services Managers	215	**$84,110**

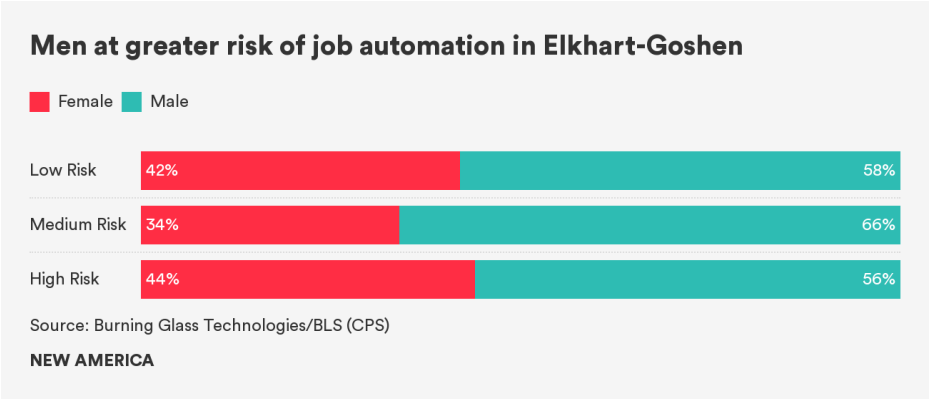
Source: Burning Glass Technologies

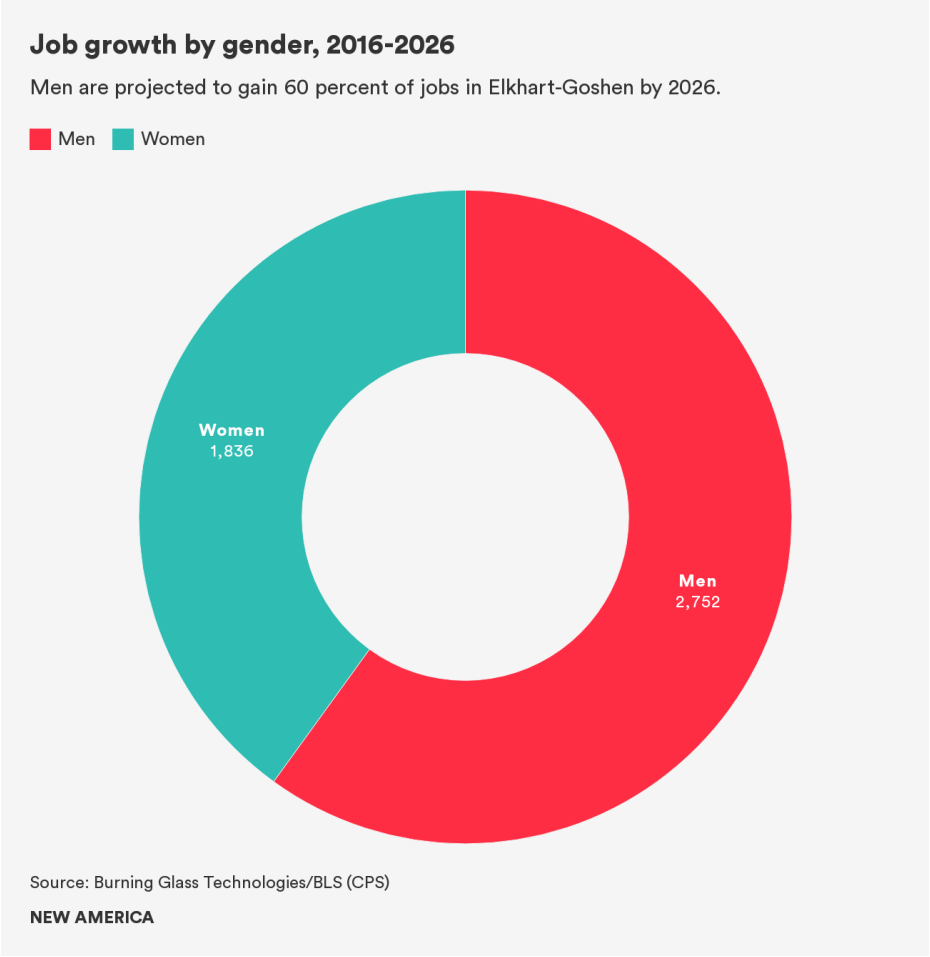
NEW AMERICA

Men

Contrary to the United States overall, where our data suggest that women are more likely than men to be employed in occupations at high risk of automation, male workers in the Elkhart-Goshen region represent 56 percent of those in the highest risk category. However, much of this disparity stems from the disproportionate share of labor force, of which men comprise 60 percent. For instance, women hold only 41.1 percent of positions in the top 10 most common jobs, including only 36 percent of Team Assembler positions.

In the next several years, BLS job growth projections suggest that the gender breakdown of new jobs reflects the current picture, despite heavy declines in certain occupations. Using current gender balances in occupations, combined with predictions of future job growth, men are set to receive around 60 percent of new jobs by 2026.





Projected Job Growth through 2026

High-Paying Jobs are Projected to Grow at the Fastest Rates

According to BLS job projection data, high-paying jobs in the region are expected to grow at the fastest rates. Common high-paying jobs such as mechanical engineers, financial managers, and physicians all are projected to grow at rates greater than 10 percent, compared to lower-paying jobs like inspectors, secretaries, and bookkeepers, which all have negative projected job growth. The balance of job growth raises questions about the talent pipeline and the extent to which the current workforce will have the education, skills, and training to connect to the jobs of the future.

Jobs in Elkhart-Goshen by Earnings Levels

High-paying jobs are projected to grow at the fastest rate.

Earnings Classification	Number of Jobs, 2016	Median Salary	Total Increase in Jobs, 2016–2026	Change in Jobs (%)	Women (%)
High Paying	10,455	$80,130	1,089	10.42%	37.02%
Medium Paying	29,033	$46,420	2,204	7.59%	34.30%
Low Paying	57,567	$27,560	1,419	2.46%	44.97%

Source: Burning Glass

NEW AMERICA

In the Medium Term, Top Growing Jobs Will Require a Variety of Skills

There is no one type of job that will dominate the Elkhart-Goshen labor force in the future, and some of the jobs projected to grow in the medium term may not stick around for the long term. Of the top five growth jobs in Elkhart-Goshen, only one, registered nurses, is at a low risk of automation. Fast food workers are projected to have the greatest number of job openings over the next few years, even though this job also has a high risk of automation in the longer term. Thus, the challenge is to fill these positions while ensuring that those workers have the skills and education to move on in the long term if automation ultimately displaces those jobs.

Several positions with the greatest projected *percentage* growth are health and hospitality positions, which typically are associated with women and involve automation-resilient job tasks such as caregiving and empathy. Personal care aides, registered nurses, and medical assistants are expected to grow in stature in

the region; based on current national estimates, each of those jobs is held by a woman more than 70 percent of the time.

Top 30 Growth Jobs by Magnitude

Occupation Title	Number Employed 2016	Job Openings, 2016–2026	Total Jobs 2026	Automation Risk	Top Requested Skill
Combined Food Preparation and Serving Workers, Including Fast Food	2,737	416	3,153	High	Food service experience
Helpers—Production Workers	1,499	340	1,839	Medium	Hand tools
Laborers and Freight, Stock, and Material Movers, Hand	3,366	340	3,706	Medium	Forklift operation
Personal Care Aides	745	277	1,022	Medium	Caregiving
Registered Nurses	1,334	220	1,554	Low	Cardiopulmonary Resuscitation (CPR)
Welders, Cutters, Solderers, and Brazers	1,911	212	2,123	High	Mig and Tig Welding
First-Line Supervisors of Production and Operating Workers	2,232	190	2,422	Low	Scheduling
General and Operations Managers	1,950	183	2,133	Low	Budgeting
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,194	162	2,356	Medium	Sales

Occupation Title	Number Employed 2016	Job Openings, 2016–2026	Total Jobs 2026	Automation Risk	Top Requested Skill
Maintenance and Repair Workers, General	1,496	139	1,636	Medium	Predictive / Preventative Maintenance
Shipping, Receiving, and Traffic Clerks	2,019	119	2,138	High	Forklift Operation
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,143	117	1,260	Medium	Cleaning
Medical Assistants	399	113	512	Low	Injections
Heavy and Tractor-Trailer Truck Drivers	1,562	103	1,666	Medium	HAZMAT (Hazardous Materials)
Stock Clerks and Order Fillers	1,726	93	1,820	Medium	Forklift Operation
Nursing Assistants	807	87	894	Low	Activities of Daily Living (ADLs) Assistance
Accountants and Auditors	791	87	878	High	Accounting
Packers and Packagers, Hand	857	87	943	Low	Manufacturing Processes
Plumbers, Pipefitters, and Steamfitters	441	78	519	Low	Manufacturing Processes
Industrial Truck and Tractor Operators	679	77	755	High	Forklift Operation
Customer Service Representatives	1,562	77	1,638	Medium	Customer Service

Occupation Title	Number Employed 2016	Job Openings, 2016–2026	Total Jobs 2026	Automation Risk	Top Requested Skill
Computer-Controlled Machine Tool Operators, Metal and Plastic	699	74	773	High	Computer Numerical Control (CNC)
Recreational Vehicle Service Technicians	614	74	687	Medium	Repair
Financial Managers	386	72	458	Low	Accounting
Industrial Engineers	376	71	447	Low	5S Methodology
Waiters and Waitresses	1,300	70	1,370	High	Guest Services
Medical Secretaries	294	68	362	Medium	Administrative Support
Teacher Assistants	889	62	951	Medium	Special Education
Elementary School Teachers, Except Special Education	977	62	1,038	Low	Lesson Planning
Machinists	701	61	762	Medium	Machining
Mechanical Engineers	403	58	461	Low	Computer Aided Drafting/Design (CAD)

Occupations at Highest and Least Risk

The Largest Occupations Most at Risk

Of the 50 occupations that employ the most people in the Elkhart-Goshen metro area (totaling well over half of all workers), the following 20 occupations are the most at risk of automation.

Occupation Title	Number Employed, 2016	Mean Salary, 2017
Assemblers and Fabricators, All Other, Including Team Assemblers	21,358	$42,780
Combined Food Preparation and Serving Workers, Including Fast Food	2,737	$19,180
Office Clerks, General	2,381	$33,000
Retail Salespersons	2,262	$29,000
Cashiers	2,227	$20,260
Shipping, Receiving, and Traffic Clerks	2,019	$34,290
Welders, Cutters, Solderers, and Brazers	1,911	$38,420
Inspectors, Testers, Sorters, Samplers, and Weighers	1,466	$37,230
Bookkeeping, Accounting, and Auditing Clerks	1,342	$35,900
Waiters and Waitresses	1,300	$22,540
Sewing Machine Operators	896	$30,050
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	868	$30,730
Accountants and Auditors	791	$69,060
Packaging and Filling Machine Operators and Tenders	782	$29,990
Woodworking Machine Setters, Operators, and Tenders, Except Sawing	714	$31,030
Computer-Controlled Machine Tool Operators, Metal and Plastic	699	$35,800
Industrial Truck and Tractor Operators	679	$34,640
Cooks, Restaurant	549	$22,580

Occupation Title	Number Employed, 2016	Mean Salary, 2017
Receptionists and Information Clerks	451	$28,270
Production, Planning, and Expediting Clerks	414	$49,620

The Largest Occupations Least at Risk

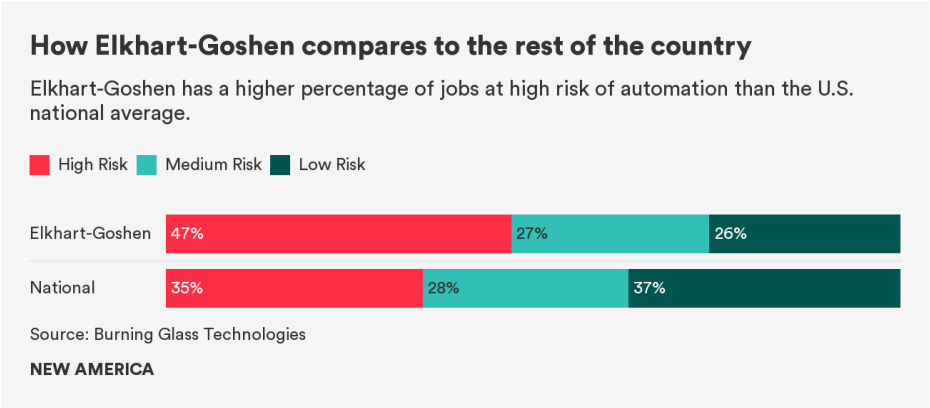
Of the 50 occupations that employ the most people in the Elkhart-Goshen metro area, the following 13 occupations have a low risk of automation.

Occupation Title	Number Employed, 2016	Mean Salary, 2017
First-Line Supervisors of Production and Operating Workers	2,232	$60,670
General and Operations Managers	1,950	$111,920
Registered Nurses	1,334	$58,050
First-Line Supervisors of Office and Administrative Support Workers	1,056	$54,350
Elementary School Teachers, Except Special Education	977	$50,460
Packers and Packagers, Hand	857	$25,300
Nursing Assistants	807	$25,270
First-Line Supervisors of Retail Sales Workers	717	$36,690
Secondary School Teachers, Except Special and Career/ Technical Education	628	$52,020
Industrial Production Managers	567	$97,590
Electricians	500	$52,630

Occupation Title	Number Employed, 2016	Mean Salary, 2017
First-Line Supervisors of Mechanics, Installers, and Repairers	445	$59,910
Plumbers, Pipefitters, and Steamfitters	441	$55,980

How Does Elkhart-Goshen Differ from the U.S. Average?

Overall, the risk of automation facing workers in the Elkhart-Goshen region is far higher than the rate of risk across the U.S. workforce overall.



Ways the Elkhart-Goshen Area Workforce Is More Resilient to Automation Than the Nation Overall

- To date, the RV sector has displayed notable resiliency to automation, which has protected workers in otherwise high-risk occupations, such as Team Assembler and Welder.

- Medium-risk jobs have the highest growth rate of risk categories over the next few years, possibly reflecting the current strength of the U.S. economy. So long as the nationwide economy continues to perform well and demand for RVs remains strong, there is reduced incentive to automate.

Ways the Elkhart-Goshen Area Workforce Is More Vulnerable to Automation Than the Nation Overall

- The Elkhart-Goshen regional economy relies heavily on a single sector: manufacturing. Around half of all nonfarm workers in Elkhart-Goshen are employed in the manufacturing sector, whereas only 8.5 percent of all U.S. workers are employed in manufacturing. If employers do automate, many people in the region will be affected simultaneously. This will cause large worker outflows to underdeveloped secondary industries and strain social and personal safety nets.

- Elkhart-Goshen lags behind the state of Indiana and the nation in educational attainment. The amount of people with no high school diploma in Elkhart County (19.5 percent) far exceeds the comparative percent for the state of Indiana as a whole (11.5 percent). The amount of people with at least a bachelor's degree in Elkhart-Goshen (18.3 percent) is far below the Indiana (24.6 percent) and national averages (30.3 percent). When employers eventually do automate certain processes, those who have less education will struggle to fill the higher-caliber jobs that take their place.

What to Do?

While Elkhart and Goshen have managed to buck certain trends and displacement from automation, the region has experienced the ups and downs too frequently and too recently to assume that massive displacement will not reoccur. Perhaps more urgently, the interim employment many residents sought during the Great Recession—frontline roles in fast food or retail—are incredibly vulnerable and becoming less available, meaning that future disruption could be even more harmful to families. In order to grow the resilience of the workforce and ensure that more workers are able to smoothly transition to roles requiring new skills, to new industries, or to entrepreneurial self-employment, leaders in the region should consider:

1. **Automation-Informed Decision-Making**: Training career and technical educators, career and high school counselors, faith leaders, and customer-facing staff at community-based organizations to better understand automation vulnerability, the importance of lifelong learning, and the concrete opportunities for continuing education and training.

2. **Future-Oriented Work-based Learning**: Continued investment in registered apprenticeship and work-based learning experiences that communicate to participants and employers the need for building

fundamental—sometimes called "soft" or "employability"—skills. Local leaders in the space include Horizon Education Alliance.

3. **A Reality Check On Wages**: Analyzing the cost-benefit of low paid, low skill roles that are difficult to fill or retain versus paying more competitive wages for roles that involve work-based learning to develop employees to move within an organization or take on bundled roles. Considering trends in younger worker mobility and migration in an area that has difficulty retaining and growing population, you are increasingly unlikely to find enough workforce to fill underpaid roles with mobility ceilings.

4. **Entrepreneurial Training and Infrastructure For All**: Entrepreneurial education and support should be designed and made available for all, including—and perhaps, especially—for those outside of residents emerging from university settings, tech incubators, or personal wealth. Residents who are selling crafts on Facebook Marketplace, individual farmers, and others who are not always considered entrepreneurs are ripe for development.

5. **A Focus on English-Language Learners**: Goshen especially has had a major shift in demographics, with more than 50 percent of students enrolled in Goshen Community Schools identifying as Hispanic/Latinx. This presents an opportunity to promote the community as more vibrant and inclusive, a major asset for recruiting new businesses to the region. It is also a call to action for local employers to adjust recruiting, pay attention to inclusion efforts, and ensure that multilingual learning for *all* students is a priority to produce a talent pipeline ready to compete in a changing environment.

6. **Experimentation With Investment in Sobriety Pathways For Workers**: Just as there is return on investment to employers for investing in release time for training or paying for tuition and training (versus expecting employees to pay and be reimbursed), there is emerging evidence on a decent return on investing in employee sobriety. The region is struggling, like much of the Midwest, with rampant opioid addiction. A frequently voiced frustration of employers looking to hire is not the complexity of hiring in an environment of full employment, but rather finding a sober candidate among those trying to re-enter the workforce. Following the lead of another Indiana employer who offers **addiction treatment as part of onboarding** could cut recruitment costs, increase retention, and contribute to community stability. We will not fulfill the needs of a future workforce by stranding large populations of recovering Hoosiers.

7. **A Shift in Mindset**: Manufacturing is not going away, even as technology alters it dramatically. Even as Elkhart-Goshen has been somewhat unique in opting in and out of certain waves of automation in select sectors, automation will continue to impact opportunities for earning. The inability to find enough talent for traditional manufacturing roles is driving some automation, but we are not seeing workers flock to the lowest paid roles to stem that tide. Nor are we likely to. Meanwhile, the efficiency and safety gained by redeploying repetitive tasks is simply too great. To hope for it to sort itself out by attrition is circular. To design for a more mobile, adaptable worker who can do advanced work in manufacturing and move fluidly across roles and employers is strategic.

Data and Methodology

What Do We Mean by Automation and Risk of Automation?

In our analysis, the rankings of automation risk describe the technical feasibility that an occupation can be computerized or automated with state-of-the-art technology available today. The data on automation potential come from Burning Glass Technologies, and are derived largely from the well-known 2013 study **"The Future of Employment: How Susceptible Are Jobs to"** by Oxford University researchers Carl Benedikt Frey and Michael A. Osborne.[7] To calculate the automation risk of a given occupation, Frey and Osborne evaluated the ability of computers to perform its underlying associated tasks:

- "High risk" occupations are the top quartile of risk, with at least 85 percent risk of automation for a given occupation.
- "Medium risk" occupations are in the second quartile of risk, between 50 percent and 85 percent risk of automation for a given occupation.
- "Low risk" occupations are in the bottom two quartiles, with less than 50 percent risk.

A few key caveats are important to consider when interpreting the data.

First, the rankings are *not* a probability that a given job actually will be automated. Even if a job or task *technically* could be done by a computer, this does not necessarily mean that it *will*. A range of legal, logistical, business, financial, political, and social factors could lower the real rate at which businesses and employers adopt technology and automate functions. Moreover, predictions about technology have a relatively high degree of uncertainty.

Second, jobs that have some tasks that technically can be automated will not necessarily be displaced. Instead, the nature of many jobs will change—in some cases, dramatically—but they jobs themselves will not be eliminated. (A January 2017 McKinsey report estimates that half of job tasks could be automated, but **only 5 percent of jobs** will be outright eliminated.)[8] This change implies that workers in at-risk occupations will need to continuously upskill to keep pace with the changing requirements of their occupation.

Finally, even though technology and automation will displace some jobs and change others, new jobs also will be created and other jobs will expand. Our analysis does not capture the impact of projected job creation.

Notes on the Data

- Data on automation potential come from Burning Glass Technologies, derived largely from the 2013 study "The Future of Employment: How Susceptible Are Jobs to Computerisation?" by Carl Benedikt Frey and Michael A. Osborne.

- Occupational and wage data for the Elkhart-Goshen metropolitan area are from the BLS and cover the period from January 1 to December 31, 2017. The geographic area covers the entirety of Elkhart County.

- Data on national averages of women in occupations come from the BLS.

- Data on education levels of employed individuals come from the American Community Survey five-year estimates (2011–15).

Notes

1 James Briggs, "7 Charts Show Why Anyone Can Get a Job in Elkhart's Bonkers Economy," Indianapolis Star, May 14, 2018, https://www.indystar.com/story/money/2018/05/14/elkharts-booming-rv-job-market-explained/604979002.

2 Carl Benedikt Frey and Michael A. Osborne, The Future of Employment: How Susceptible Are Jobs to Computerisation?,, *Oxford Martin School*, September 17, 2013,. https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf.

3 Daron Acemoglu and Pascual Restrepo, "The Race Between Machine and Man: Implications of Technology for Growth, Factor Shares and Employment," NBER Working Paper No. 22252 (Cambridge, Mass.: National Bureau of Economic Research, June 2017), http://www.nber.org/papers/w22252.

4 Mark Muro, Robert Maxim, and Jacob Whiton, Automation and Artificial Intelligence: How *M*achine s *Are A*ffecting *P*eople and *P*laces (Washington, D.C.: Brookings Institution, January 24, 2019), https://www.brookings.edu/wp-content/uploads/2019/01/2019.01_BrookingsMetro_Automation-AI_Report_Muro-Maxim-Whiton-FINAL-version.pdf.

5 Mark Muro, "Where the Robots Are," The Avenue blog, Brookings Institution, August 14, 2017, https://www.brookings.edu/blog/the-avenue/2017/08/14/where-the-robots-are/.

6 Rasmus S. Jorgensen, "Automation's Local Impact," Elkhart Truth, January 27, 2019, https://www.elkharttruth.com/hometown/elkhart_county/automation-s-local-impact/article_0c884db6-b48f-51b1-a627-5c77f5873bfd.html.

7 Frey and Osborne, The Future of Employment.

8 James Manyika et al., A Future That Works: Automation, Employment, and Productivity (New York: McKinsey Global Institute, January 2017), https://www.mckinsey.com/~/media/McKinsey/Global%20Themes/Digital%20Disruption/Harnessing%20automation%20for%20a%20future%20that%20works/MGI-A-future-that-works_Full-report.ashx.

NEW AMERICA