



2022 Indiana Manufacturing Survey: **Back to Work**

ksm
CPAs & Advisors

ksmcpa.com

Table of Contents

Foreword	2
I. Diminishing Impacts of the Pandemic on Indiana's Manufacturers	3
II. Surging Demand	4
III. Struggling Supply Chains	5
IV. Rising Costs	8
V. Retaining and Attracting Workers	10
VI. Automating Processes	15
Appendix	16

Foreword

In the 15-year history of the *Indiana Manufacturing Survey*, we have never seen more dramatic macroeconomic changes to the manufacturing environment than those that have occurred in the past year. In short, while most Hoosier manufacturers have survived the initial business interruptions of COVID-19, they now (and for the foreseeable future) face a variety of new challenges as they get “back to work” on what is hopefully the tail-end of the pandemic. These challenges include how to meet surging demand, handle rising costs, attract and retain workers, and address the seemingly never-ending need to further automate. We hope that the information in this report helps Hoosier manufacturers successfully navigate what are sure to be very challenging times over the next few years.

First, the good news: Unlike our previous report, which focused on solely surviving the pandemic, no Hoosier manufacturer today describes the pandemic as “devastating” to the point of threatening their organization’s existence. In fact, a majority (53%) of Indiana’s manufacturers report that, presently, the COVID-19 pandemic is not a significant threat to their business, and the remaining 47% indicate that while the pandemic’s impact has been very serious, their company is going to successfully ride it out. Furthermore, most have been able to maintain or improve their profit margins in the face of rising costs, with an average improvement of about 9% expected for 2022 over 2021. Additionally, nearly half (45%) of Hoosier manufacturers report recent surges in customer demand.

Now the bad news: This surge in demand is unprecedented. It has strained supply chains to the limit and, in some cases, beyond. The vast majority (81%) of respondents report that their supply chains are currently experiencing shortages, with about half blaming these issues on labor shortages and the other half placing the blame on a lack of available materials. Furthermore, supply chain imbalances are contributing to inflationary pressures. Every participant in the survey (100%) reports that the costs of materials in their supply chains have recently increased. The average reported increase in material costs is an astounding 33%. Labor costs have also increased dramatically at 17%. The vast majority (93%) of survey participants are raising their salary levels and/or adjusting benefits in order to attract workers.

At the same time, the pandemic has increased the use of automation in Indiana’s factories. Notably, 73% of respondents indicated that the lack of workers is accelerating this trend, with the cost of automation and a lack of skilled workers serving as material hurdles. While much of the data in this year’s Indiana manufacturing report is certainly worrisome, Hoosier manufacturers have historically been resilient. As was the case with the Great Recession, manufacturers always seem to evolve their strategies and implement changes in order to rebound. Hence, we expect that Indiana’s manufacturers will weather the latest round of challenges and emerge in the coming years even more capable and competitive than ever before.



Jason E. Patch
Chair, Manufacturing & Distribution
Services Group
Katz, Sapper & Miller



Mark T. Frohlich
Associate Professor
Kelley School of Business
Indiana University - Indianapolis

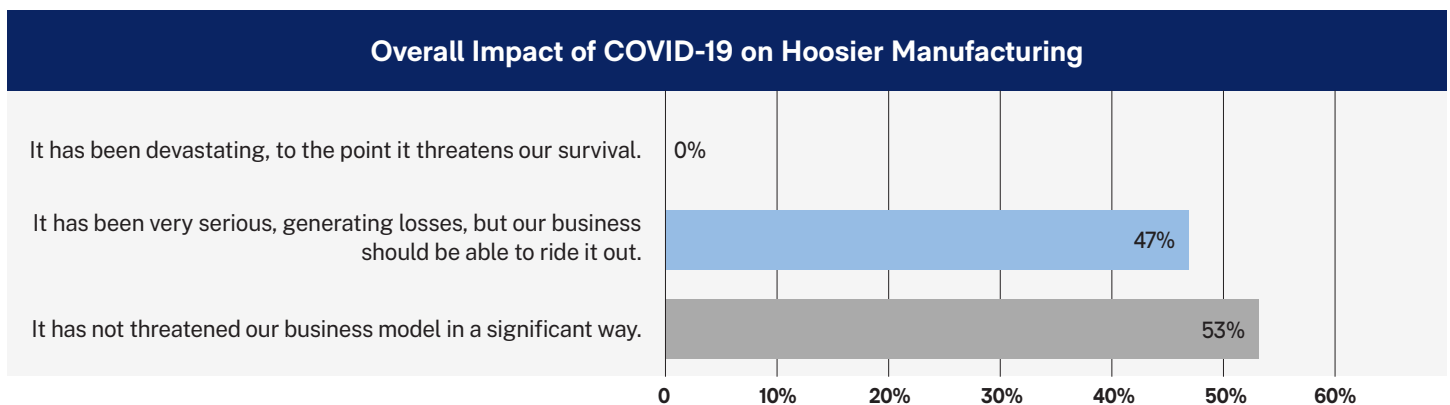


Steven L. Jones
Professor
Kelley School of Business
Indiana University - Indianapolis

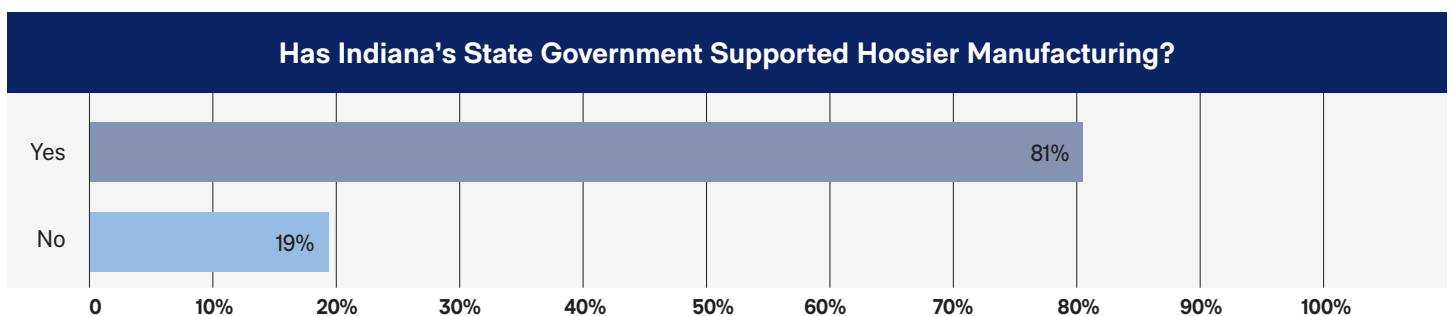
I. Diminishing Impacts of the Pandemic on Indiana's Manufacturers

In our most recent *Indiana Manufacturing Survey: COVID-19 Special Edition*, which took the pulse of the manufacturing industry in the thick of the pandemic, the overall mood was unsurprisingly downbeat. The majority of respondents (62%) described the impact of COVID-19 on their business as having been very serious, while only 31% stated that the COVID-19 pandemic had not significantly threatened their businesses.

Today, the results are much improved, happily, with a majority (53%) of Indiana manufacturers reporting that the COVID-19 pandemic is not significantly threatening their business, though the remaining 47% of respondents still consider it to be a very serious threat, albeit something that their company can successfully ride-out. And while 7% of respondents in the previous report described the virus' impact as devastating to their business – to the point of threatening their organization's survival – fortunately, no Hoosier manufacturer reported problems of such severity in this year's study.



For more than a decade, the prevailing view among survey respondents (81%) has been that Indiana's state government has done a good job supporting Hoosier manufacturing, and this view has not been altered by the COVID-19 pandemic.



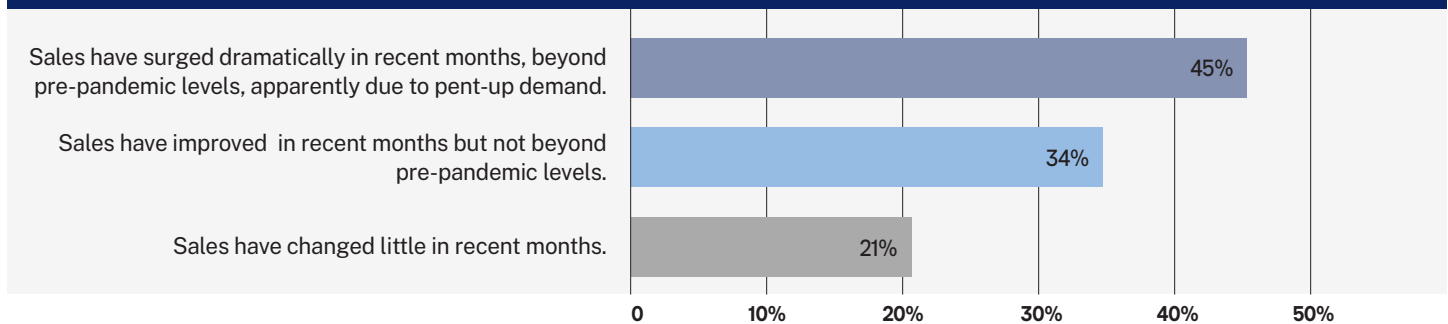
“The future looks different - much of it in good ways.”

II. Surging Demand

One of the most striking challenges (and opportunities) currently facing Hoosier manufacturers is the recent surge in customer demand. A plurality (45%) reported that their sales have surged dramatically in recent months, while another 34% reported sales have improved back to pre-pandemic levels, although not beyond. Only one in five (21%) Hoosier manufacturers reported sales as largely unchanged in recent months. Likewise, when asked to describe their biggest challenges today, typical comments included “meeting demand” and “huge backlogs.”

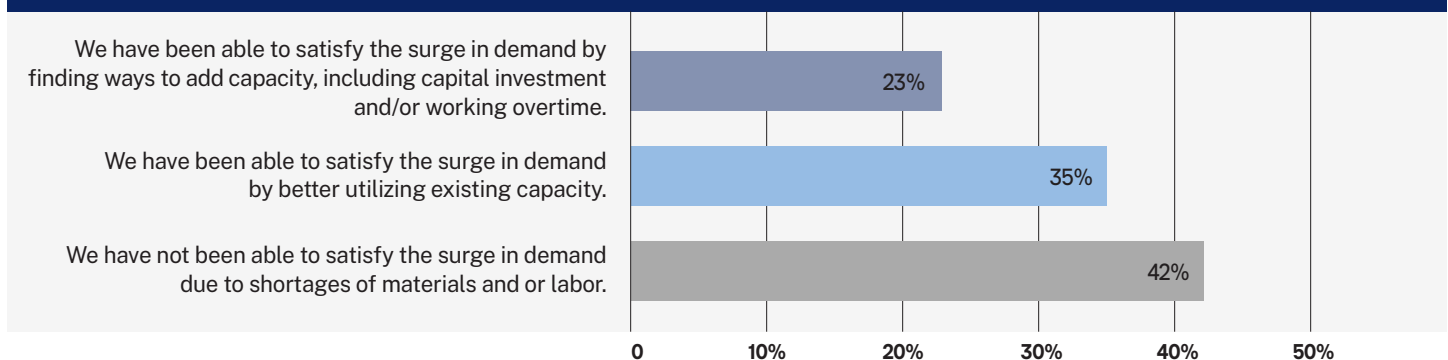
“Our backlog is 12 times its normal size.”

Surging Demand for Indiana's Products



We also asked survey participants how they were attempting to fulfill this demand. Forty-three percent reported that shortages of materials and/or labor have prevented them from meeting the surge in demand. Thirty-five percent said that they have been able to satisfy demand by better utilizing existing capacity, while the remaining 22% have met demand by adding capacity, including capital investments and overtime.

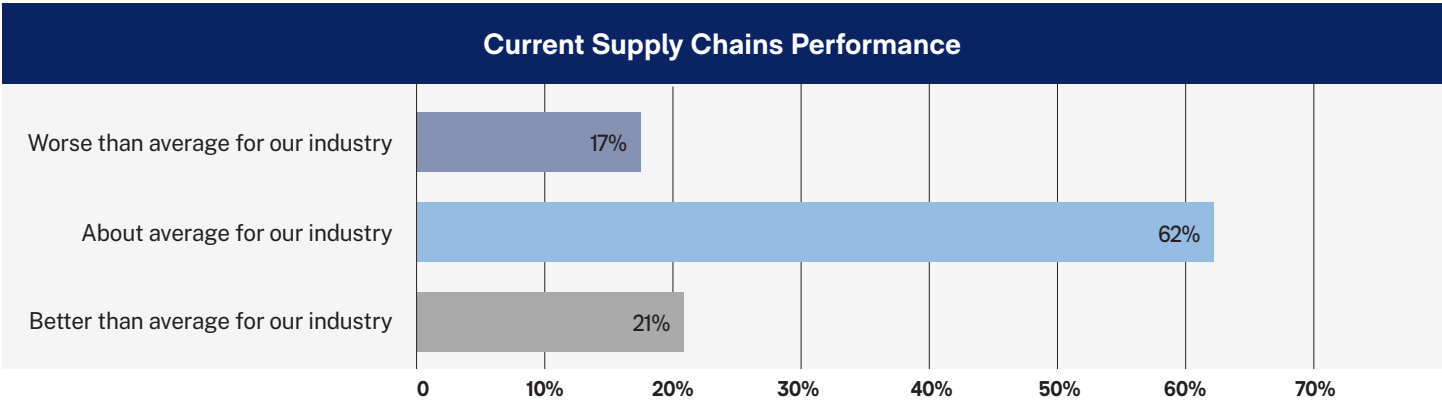
Fulfilling the Demand for Indiana's Products



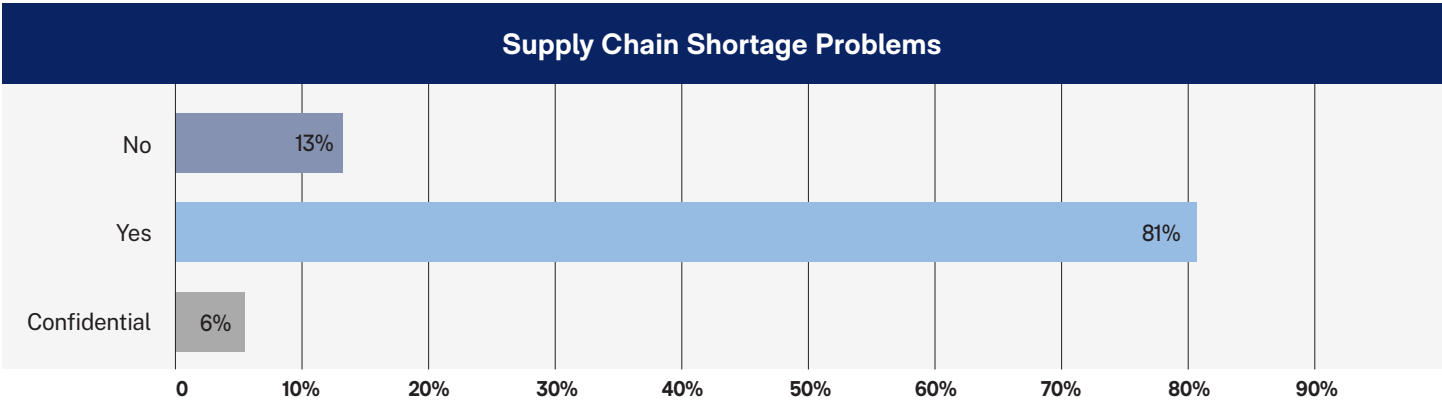
III. Struggling Supply Chains

Another of the significant challenges facing many manufacturers today: global supply chains, bringing raw materials to and shipping finished products from, Indiana’s factories. While only 17% of manufacturers in this year’s study report that their supply chains are performing worse than the industry average, with the rest indicating their supply chain is either better than (20%) or about average (63%), the problem appears to be an overall decline in supply chain performance across industries.

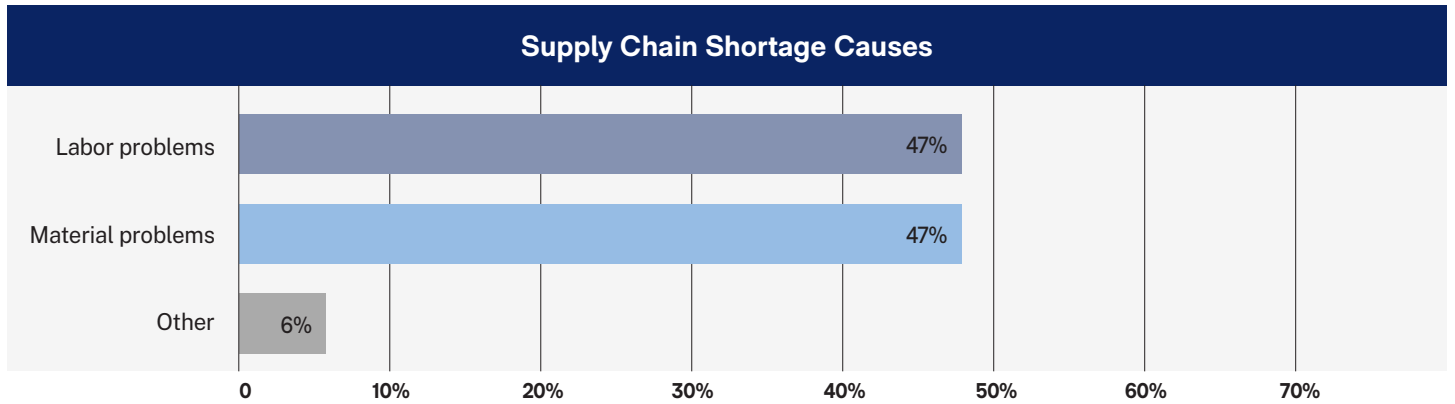
“Our biggest challenges: Supply chain shortages, rising prices for goods and services, and agreeing to price increases with our customers.”



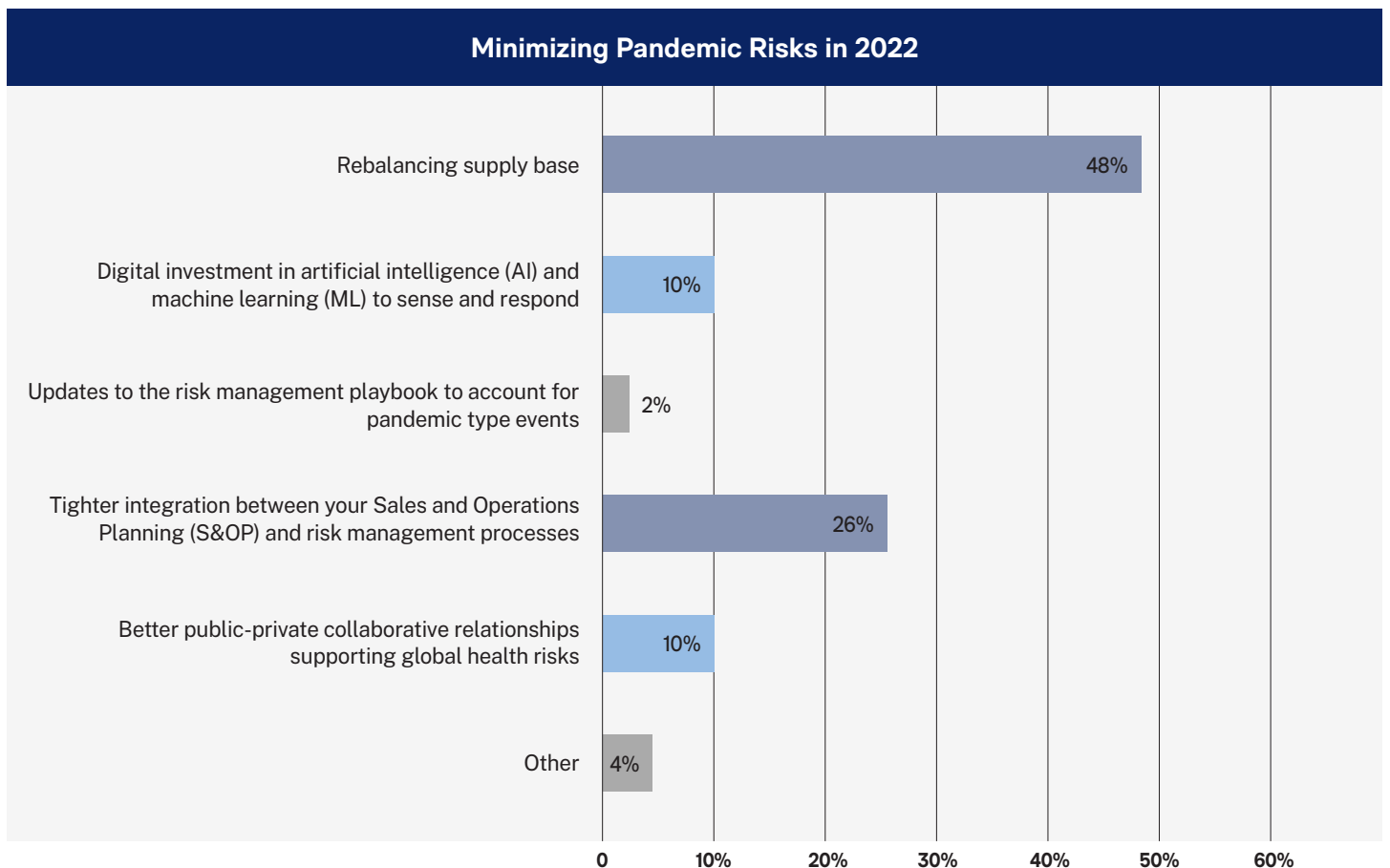
Digging deeper into this topic, an overwhelming majority (81%) of respondents indicate that their supply chains are currently experiencing shortages, while at the other end of the spectrum, a lucky 13% reported that they are not experiencing shortages.



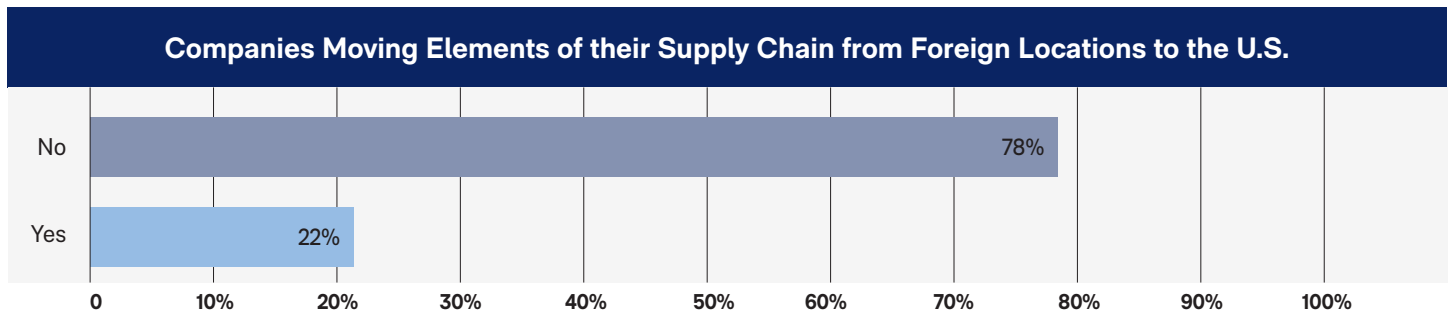
Interestingly, when we next asked respondents what they believe is causing these supply chain shortages, almost half (47%) replied labor problems, while an equal percentage (47%) placed the blame on issues related to materials availability. It is also worth noting that the 6% of respondents replying “other” place the blame mainly on transportation issues, including logistical problems related to overseas and domestic freight.



We also asked survey participants about plans for improving their supply chains, over the remainder of this year and in terms of minimizing pandemic risks. A near majority (48%) rank rebalancing their supply base as their first priority, while 26% are placing a higher priority on looking internally at tighter integration between their sales, operations planning, and risk management processes.



Given these widespread supply chain problems, approximately one in five (22%) report that their organization either already has or plans to move elements of their supply chain from foreign locations to the United States.

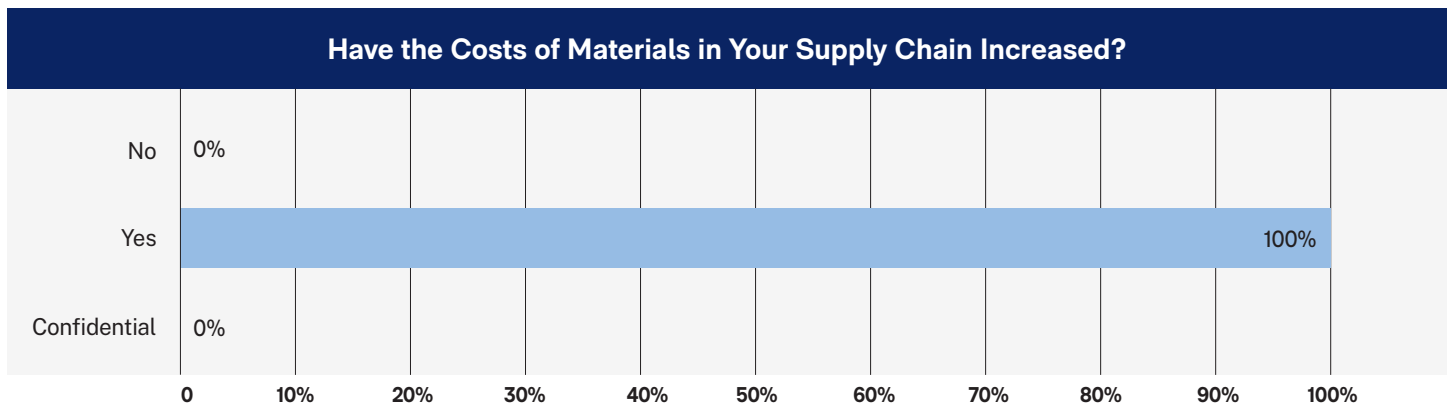


Similarly, when we asked this year's respondents the open-ended question, "**How will your company change its supply chain,**" we received a large number of relevant and insightful comments, including:

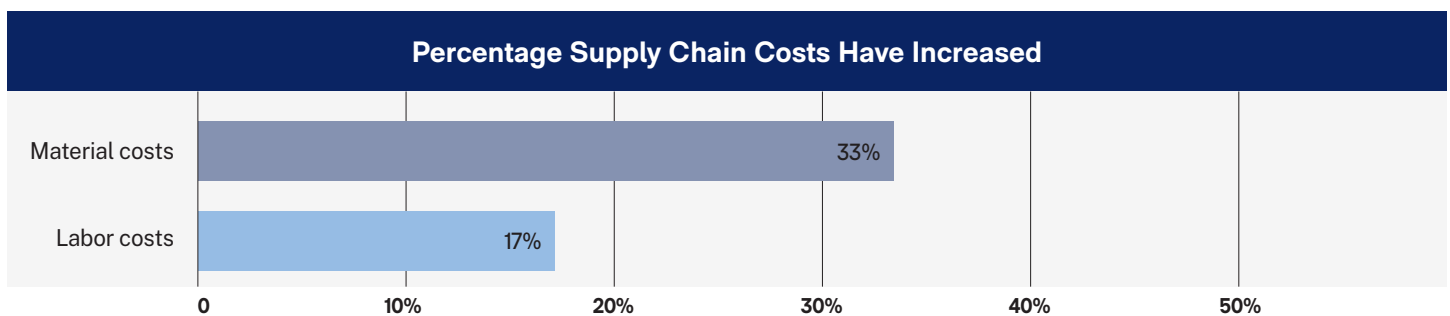
- Diversify, adjust lead times where applicable
- Eliminate all nondomestic suppliers
- Find vendors who can serve us at a reasonable cost
- Find more suppliers to reduce risk
- Purchase domestically produced products to avoid delays in transportation or other delays
- Try to order more standardized or common products that are more easily sourced
- Carry more inventory
- Add secondary suppliers
- Broaden our vendor list
- Seek greater shift to sourcing from Mexico to relieve lead time issues
- Put more inventory on the shelf
- Have more diversified partners
- Move a few items to the U.S. and order product a lot earlier than we normally did
- Diversification and vertical integration of manufacturing
- Finding vendors who better plan and keep more items in stock
- Diversify and seek substitute products
- Find alternative suppliers

IV. Rising Costs

Given the aforementioned data on surging demand and struggling supply chains, it is not surprising that inflation, in terms of rising costs and passing them through, is also a major challenge for manufacturers. And the problem is virtually universal. For the first time in the 15-year history of our study, we have a 100% unanimous response to one of the multiple-choice questions. Every single participating organization in the survey reports that the costs of materials in their supply chains have increased. That said, most respondents have, so far, been able to pass through these higher costs and maintain or improve their profit margins in the face of these rising costs, with an average improvement of about 9% expected for 2022 over 2021.

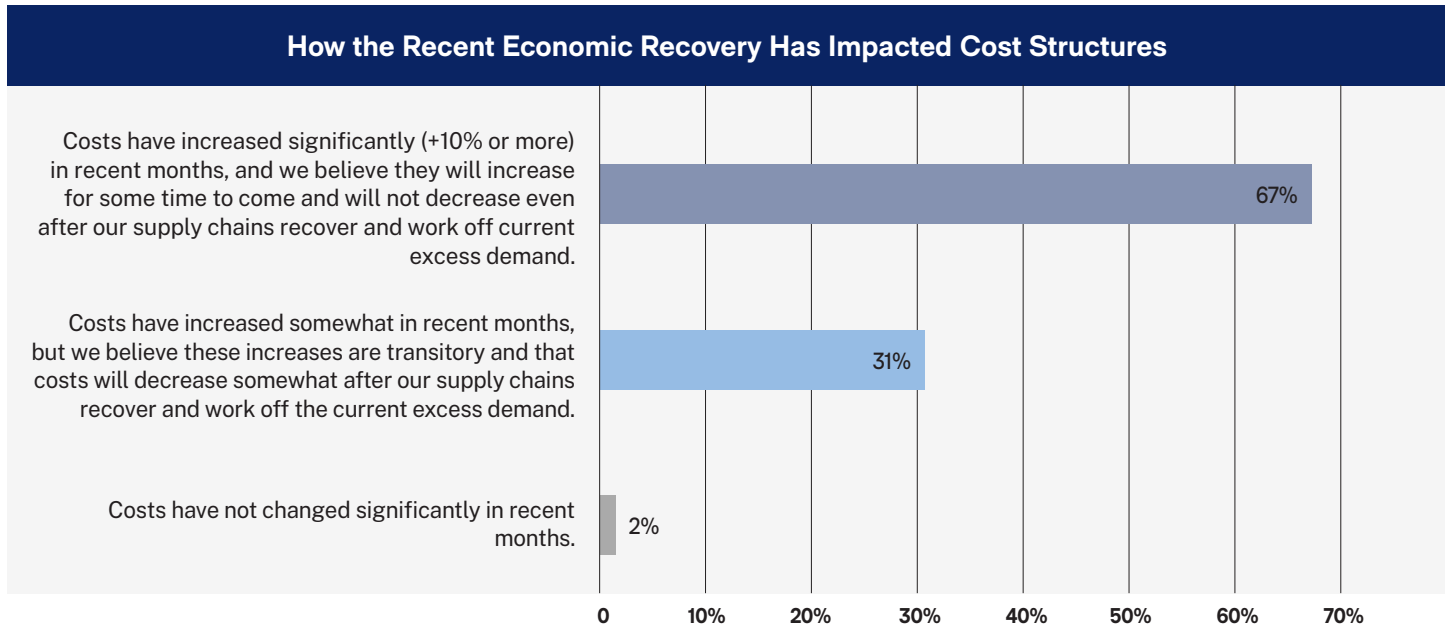


Following up on this issue of rising costs, we asked each participant the approximate percentage by which their material and labor costs have increased during the recent economic recovery. On average, Hoosier manufacturers indicate that material costs have risen recently by an astounding one-third (33%) and labor costs have similarly increased by a dramatic one-sixth (17%).

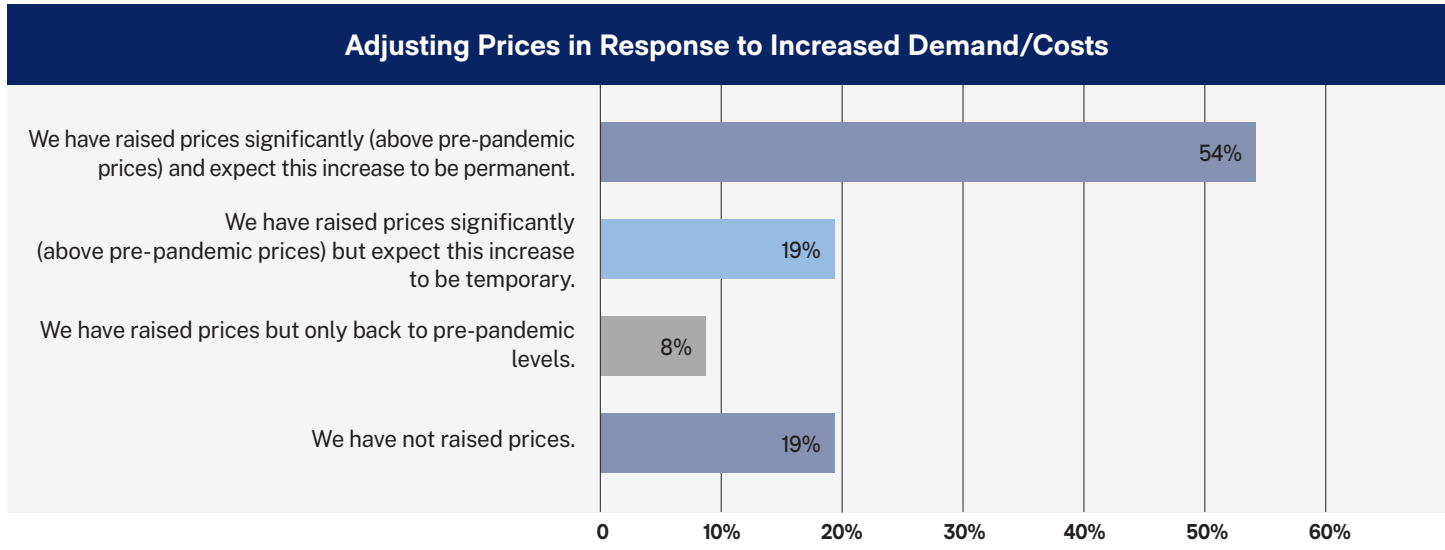


“Our biggest challenge: Changing our pricing to keep up with inflationary pressures.”

It is hotly debated among economic analysts whether the recent inflationary cost pressures are transitory, as result of temporary shortages associated with recovery, or the result of stimulative fiscal and monetary policy (in which case, these pressures will not simply abate as supply chains eventually come back into balance). Two-thirds (67%) of our survey respondents take the latter view, that their costs have increased significantly (+10% or more) in recent months, and they believe such increases will persist indefinitely and will not decrease even after their supply chains recover. While most of the remaining respondents (31%) have also experienced cost increases in recent months, they view the inflationary pressure as more transitory in nature, believing it will decrease as their supply chains come back into balance. Only 2% of respondents indicate that their costs have not increased significantly in recent months.

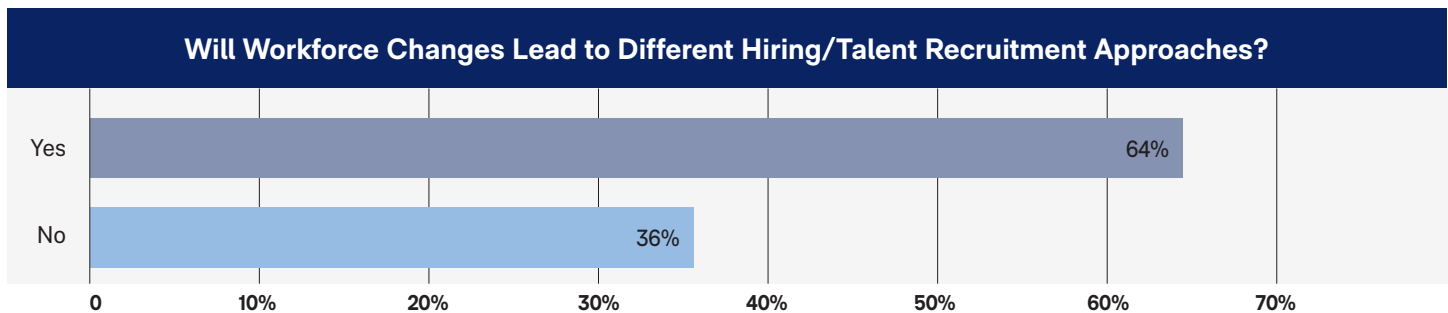


In further probing the topic of inflation, we asked survey participants if their companies had adjusted prices in response to rising demand and costs. A majority (54%) reported that they have raised prices significantly above pre-pandemic levels and that they expect those increases to be permanent.

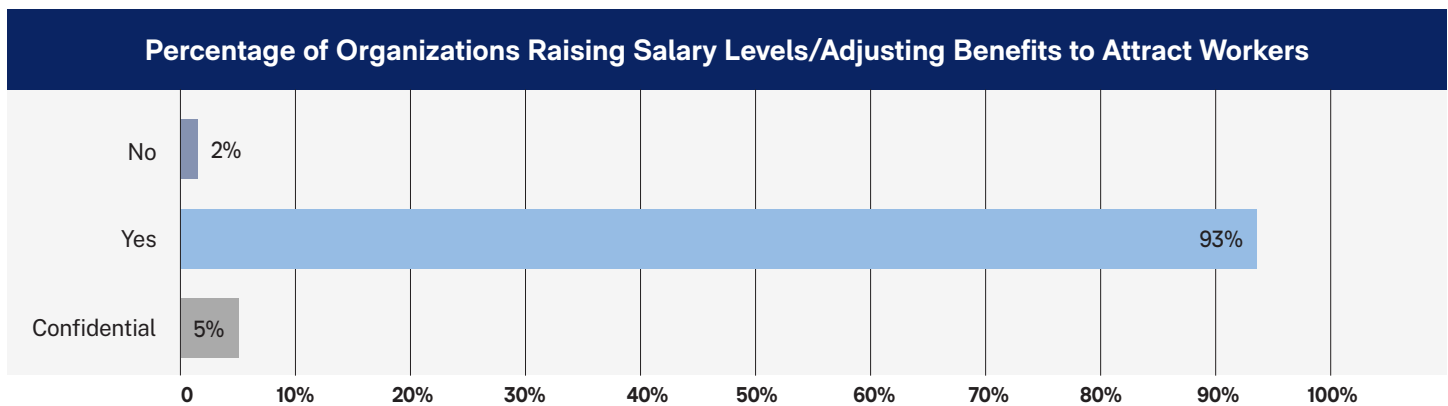


V. Retaining and Attracting Workers

Although the issues of worker shortages and the “skills gap” have been familiar themes in our past surveys, the COVID-19 pandemic has vastly intensified these concerns. Almost two-thirds (64%) of this year’s respondents report that the pandemic and its aftermath have caused them to try different approaches to hiring and talent recruitment.



In attempting to attract and retain workers to satisfy surging demand, an overwhelming majority (93%) of responding organizations are raising wage/salary levels and improving benefits. This is, of course, not only a product of inflation but also a contributor to further inflationary pressures.



“Our biggest challenge: Finding workers. We need to hire 10 people and can’t (no matter the amount of money and benefits thrown around).”

In order to gather individual perspectives on the issues around wages and benefits, we posed the question, **“How has your business adjusted benefits to attract workers?”** The responses indicate that many Hoosier manufacturers are adjusting not only their wages but also their benefits in order to attract (and retain) workers, as reflected in the following comments:

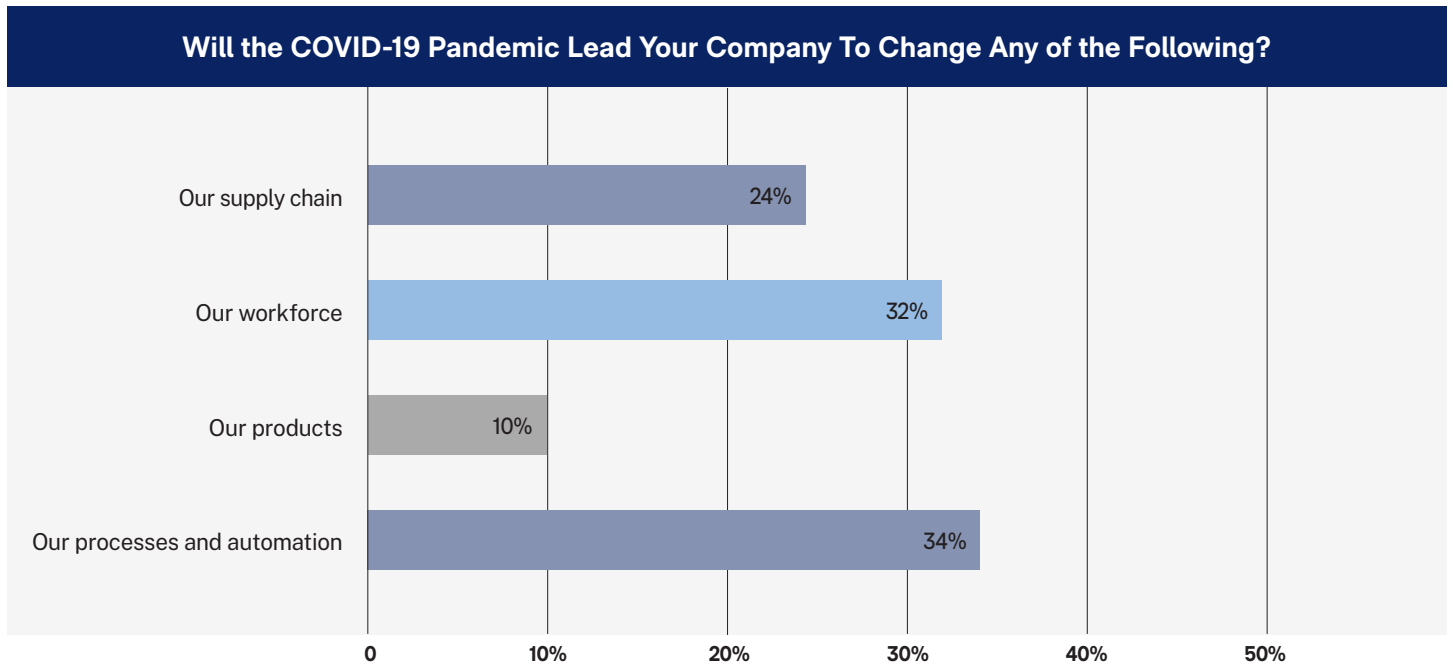
- Instituted bimonthly attendance bonus, referral bonus, sign-on bonus
- Accelerated availability of fringe benefits to new hires
- Eliminated all benefit waiting periods and starting wage and probationary periods for new hires; also increased vacation benefit along with adding more money to our productivity incentive program
- More time off
- Improved our 401k plan
- Increasing the company paid portion of health care insurance premium
- Instituted flex scheduling and allowing remote work
- Expanded our tuition reimbursement greatly; also added three new shifts, including weekend and a 9:30 a.m. to 3:00 p.m. part-time shift to allow those with kids in school but no childcare to work
- More compensation, work-from-home options, keeping insurance costs flat
- Far more flexible with work schedules and work-from-home than we ever were in the past
- Promoting our family-oriented business; offering more appealing benefits (flex schedule)
- Raised hourly wage and mini-bonuses each quarter
- Looking to add more benefits, including healthcare, dental, vision, retirement savings, and possibly others
- More generous with flexible leave; increased vacation
- Extended vacation benefits (added a fifth week for employees with 20 years, lowered years needed to obtain additional weeks); doubled annual bonus for hourly employees; increased starting wages from \$14 to \$16/hour; kept medical withholdings unchanged; added high-deductible healthcare plan; increased short-term disability payments by 33%
- Added two more days of PTO; added spot bonus; increased driver wages up to 20%
- Increased starting salaries; more flexibility in working hours; remote work

The pandemic has also led some Hoosier manufacturers to change the way they identify new talent. Below are representative responses to the question, “**What will change about your recruitment strategy?**”

- More incentives for current workers to attract others
- Hired training manager just for hourly team members
- Onboarding has become paramount in the HR process
- Widen search area
- More direct hiring and less through temp agencies
- Consider hiring those that do not meet qualifications and provide training internally
- We hired new HR staff to refine our strategy
- Heavier reliance on staffing firms to source quality candidates
- Brought in a full-time recruiter; also revamped our training, onboarding, and first 90 days plan
- Hosting more hiring events
- Spend more time at the high school level and educate individuals on future possibilities of working with robots and computers
- May look at more associate degree-level employees

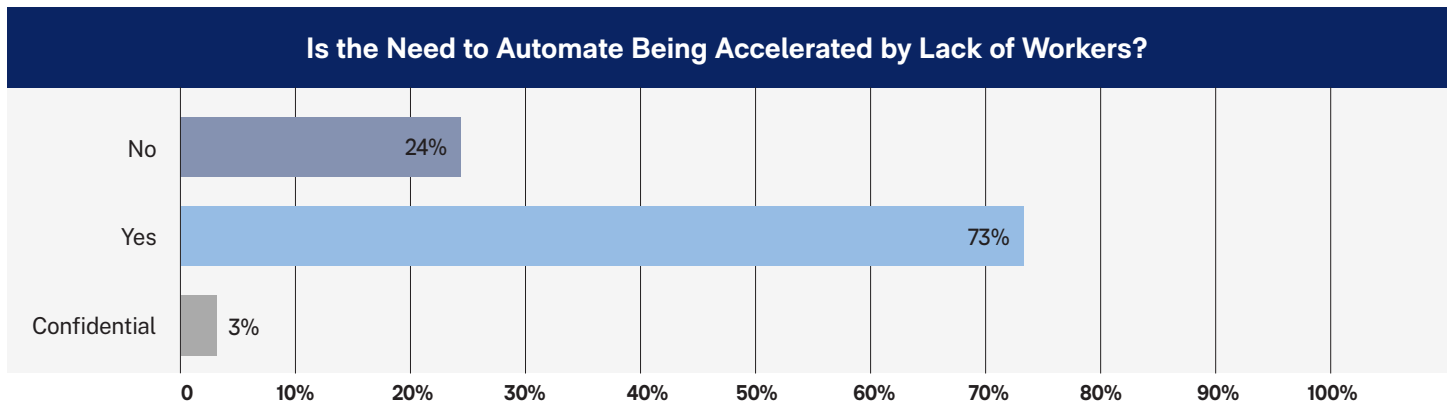
VI. Automating Processes

When asked to rank the general areas of business operations in which the pandemic is propelling future changes, 34% ranked processes and automation first, closely followed by workforce (33%), supply chains (24%), and products (9%). The results to this question are actually very similar to those from the last several surveys.

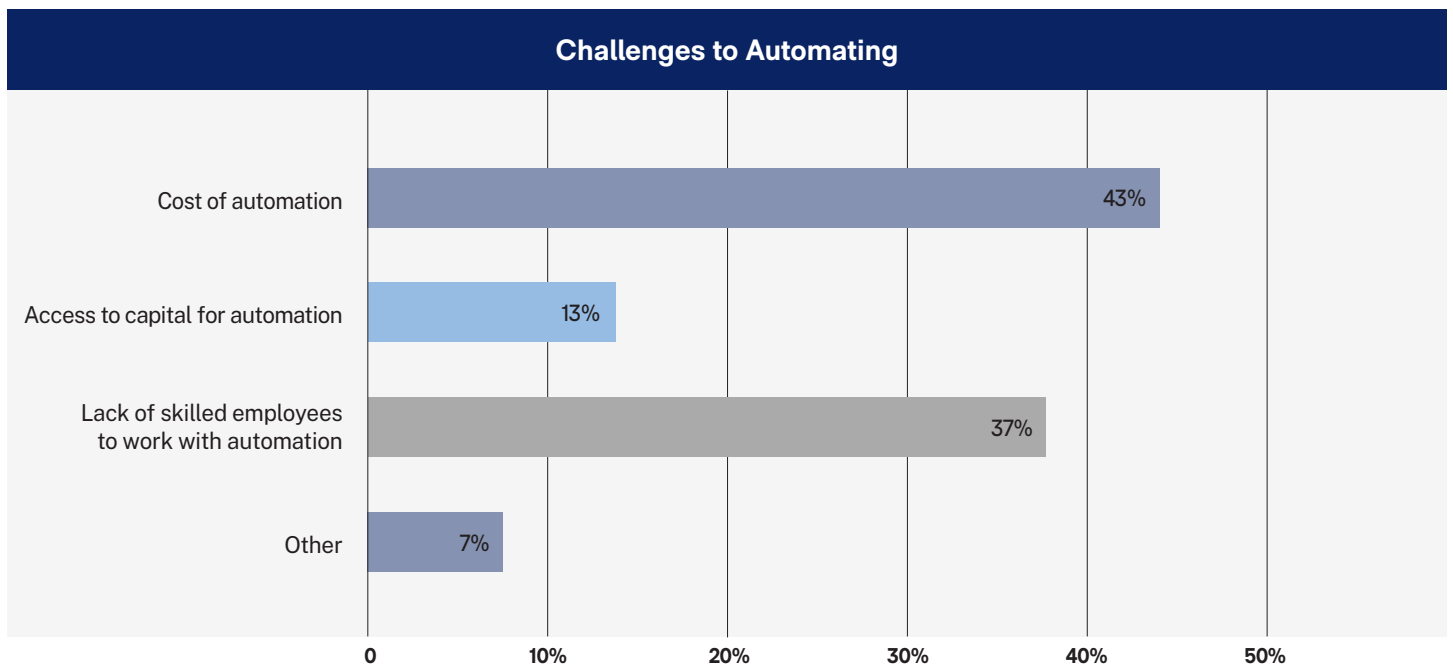


“We plan to buy more machines and get into robots. Since I can't find labor, if someone is doing something 3-5 days a week and a machine can change that to 1 day a week, I just freed up that person 2-4 days to do other stuff. Even if the machine sits there the rest of the week.”

Our 2018 survey report, *Industry 4.0 Has Arrived*, described the increasing pace of advanced manufacturing and related Industry 4.0 technological implementations. Four years later, the pace of automation is accelerating even faster. Specifically, 73% of respondents indicate that the lack of workers is accelerating the pace of automation, something the pandemic is undoubtedly exacerbating.



In terms of the challenges manufacturers face in automating, to compensate for a lack of workers, respondents indicate the biggest challenge is the cost of automation (43%), followed closely by the lack of skilled workers (38%). Lack of access to capital is less of a challenge to automation (12%).

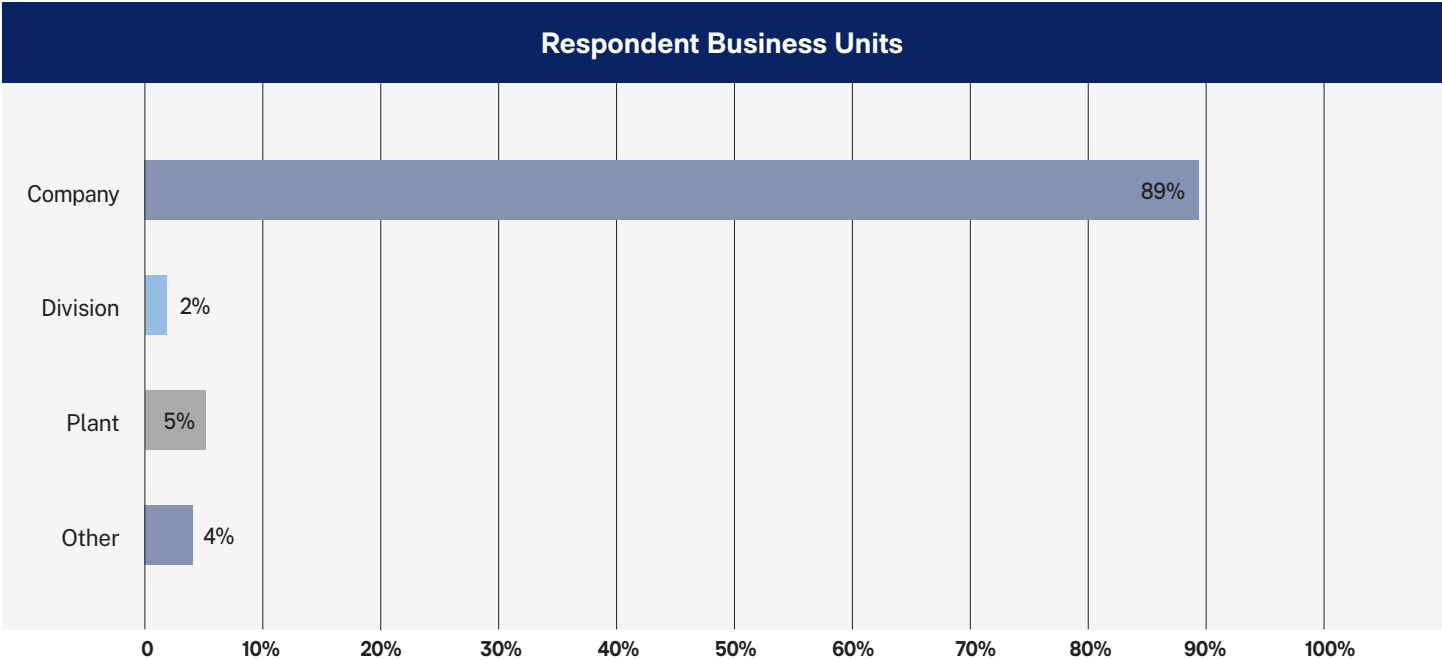


Finally, we asked respondents to comment on how their companies are changing processes, specifically as they relate to automation. It is important to note that not only are Hoosier manufacturers automating traditional shopfloor tasks such as fabrication and assembly, but in some businesses, related manufacturing staff and indirect labor activities are being automated. Some representative responses include:

- Robotic welders, assembly functions, one-piece flow
- The goal would be to move ahead with increased automation to drive productivity with fewer people
- Automated material handling projects are now front-and-center with new outlook on ROI
- Automate to reduce high-labor operations
- Improved ergonomics so that we can hire workers that have limitations on their physical abilities
- Accelerated process automation using collaborative robots (COBOTS)
- Simplify processes to allow for automation
- Low-hanging fruit first; AP automation and sales commission statement automation
- Automation is becoming more flexible for lower-volume parts; we previously outsourced automation engineering tasks but have brought in an in-house group that focuses full-time on automation projects
- Use more COBOTS and more self-driving material handling
- Software and training to improve productivity
- Utilizing IT to process AP, AR more efficiently
- Build more fixtures, reduce manual labor, increase parts per cycle, and add robots as needed
- Software innovation, better lean process study/integration with software
- Make sure we are supporting new staff with automation to assist in performance
- Reduce the need for people we can't hire.

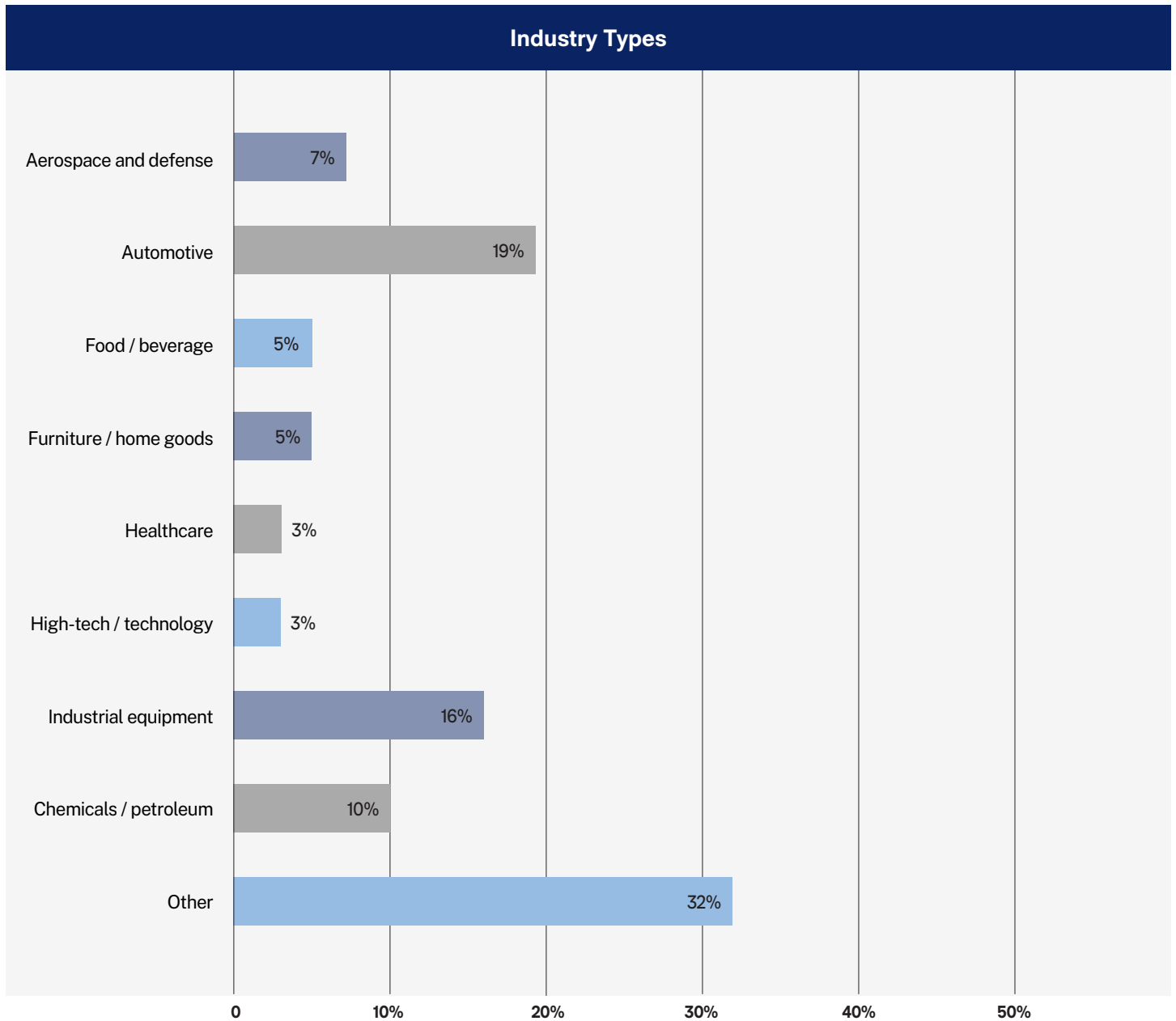
Appendix

As with previous years, this year’s study collected information from across Indiana from a variety of different manufacturers. The majority of participants in the 2022 Indiana Manufacturing Survey were reporting for their organizations at the company level (89%), with the rest responding for divisions of larger organizations (2%), individual plants (5%), or other units (4%). The average number of direct or full-time employees per respondent is 478, with the largest employing 10,500. In addition, the average number of contract workers and temporary workers per respondent is nine and 19, respectively.



	Direct / Full-Time Workers	Contract Workers	Temporary Workers
Mean	478	9	19
Maximum	10,500	250	1,100

As with prior studies, the 2022 sample reflects all of Indiana’s most significant manufacturing industries. The three largest industry groups, represented by the survey respondents, are automotive (19%), industrial equipment (16%), and aerospace and defense (10%). Another 26% of respondents are distributed between high-tech (3%), healthcare (3%), furniture/home goods (5%), food/beverage (5%), and chemicals (10%). Companies in the “other” category (32%) ranged from metal fabrication and paper products to signage.



About Katz, Sapper & Miller

Founded in 1942, Katz, Sapper & Miller (KSM) is the largest Indianapolis-based CPA firm. Today, an employee owned company with 52 partners and more than 400 staff, KSM is widely recognized as one of the country's preeminent accounting firms. Our mission is simple: Inspiring great people to do great things.

KSM has long believed the manufacturing and distribution industry is both key for Indiana and strategic for our firm. Accordingly, we have made a strategic commitment to this practice area. We consistently dedicate substantial resources, including our top talent, to ensure we stay on top of emerging industry issues and provide the highest level of service to our clients. As a result, our Manufacturing and Distribution Services Group is one of our largest practice areas.

The professionals of KSM's Manufacturing and Distribution Services Group are dedicated to providing practical and innovative solutions for the unique needs of manufacturers and distributors. The group is comprised of a cross-functional team of specialists with extensive industry experience who provide services ranging from mergers and acquisitions; process and operational improvement consulting; accounting, tax, and audit services; technology and human resources consulting; strategic planning; and more.

For more information, please visit ksmpca.com/industries/manufacturing/.

Katz, Sapper & Miller
800 East 96th Street
Suite 500
Indianapolis, IN 46240



About the Researchers

The research study was conducted in conjunction with faculty from Indiana University's Kelley School of Business at IUPUI.

Associate Professor Mark Frohlich

D.B.A. Boston University 1998

Dr. Mark Frohlich is an associate professor of operations and supply chain management at the Kelley School of Business at IUPUI. His research interests are in manufacturing and supply chain strategy, and he currently serves as the director of the Kelley School's Center for Excellence in Manufacturing. Mark has been published in a variety of scholarly journals, won many awards for his papers and cases, and is among the top-50 most cited academics in the field of operations management. He has likewise won IU's Trustees Teaching Award multiple times and, through executive education, had the opportunity to teach on four continents in more than a dozen countries. Prior to becoming an academic, he worked at Deloitte Consulting and managed numerous projects related to factory modernization, advanced technologies, and process improvements.

Professor Steve Jones

Ph.D. Purdue University 1989

Dr. Steve Jones' research interests are in financial management and strategy, with an emphasis on how financial decision-making interacts with capital market conditions and corporate strategy. His work has been published in the top scholarly journals in finance, including the *Journal of Financial Economics*, the *Journal of Finance*, the *Journal of Business*, *Financial Management*, and the *Journal of Corporate Finance*. He teaches courses in financial management, financial markets, and investment analysis, and he is a five-time winner of the Kelley School's MBA Teaching Excellence Award. He previously served four terms as faculty chair of the Kelley School's Evening MBA program and later as director of the school's Finance Education Enterprise (FIND). He continues to serve as a liaison between the school and the professional finance community in Indiana. Prior to his academic career, he worked as a financial analyst for Amoco Oil Corp. in Chicago, IL.

For more information regarding Indiana University's Kelley School of Business at IUPUI, please visit kelley.iupui.edu.

Kelley School of Business
801 West Michigan Street
BS 4042
Indianapolis, IN 46202-5151



COMPILED THROUGH THE COMBINED EFFORTS OF

