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**JABIL**

**SPECIAL REPORT:  
SUPPLY CHAIN  
RESILIENCE IN A  
POST-PANDEMIC  
WORLD**

*A Survey of Supply Chain Decision-Makers*  
SEPTEMBER 2020

 dimensional research

# INTRODUCTION

Supply chain complexity is at an all-time high. Component shortages are causing constraints and affecting end-of-life, which means a two-cent component can spark line-down issues. Supply chain managers have to contend with trade disputes, climate change, macroeconomic shifts and natural disasters. They often lack advance warning before an effective supply chain is rendered inefficient.

If that wasn't enough, 2020 saw the largest disruption of any supply chain in memory: COVID-19. Aside from creating a scenario where all the previously mentioned challenges hit us in a massive blow, the novel coronavirus created its own challenges.

As the virus spread, product demand became even more unpredictable. But the coronavirus also exposed vulnerabilities in many organizations as supply chain teams scrambled to mitigate risk. Business continuity became nearly impossible. Transportation and delivery halted in some regions. Environmental, health and safety (EHS) management became an area of intense focus, and supply chain resilience underwent one of its most strenuous tests.

Even after the world returns to some semblance of normal, the repercussions of the novel coronavirus will be felt for years to come. To pinpoint how it will affect supply chains, what effects it has already had and how organizations are changing in response, Jabil partnered with Dimensional Research to survey 715 supply chain decision-makers in seven unique industries: automotive and transportation; consumer electronics; healthcare; telecommunications; energy and industrial; smart home; and retail.

# KEY FINDINGS

## MARKET DYNAMICS ARE STILL IN PLAY

- **7 in 10** say pandemic disruptions are impacting their supply chain
- While COVID-19 has overshadowed other market dynamics, companies are still struggling the most with supply constraints
- **90%** report direct business impact from sourcing issues, especially in production delivery and time-to-market delays
- **42%** of those in the consumer electronics industry have been forced to raise prices due to sourcing issues
- **71%** of healthcare respondents have experienced delays in production delivery and time-to-market
- Only **13%** of OEMs are fully executing a predictive supply chain risk management initiative

# KEY FINDINGS

## COVID-19 HAS DISRUPTED SUPPLY CHAINS WORLDWIDE

- Only **17%** rated their predictive supply chain as “excellent” in facing COVID-19
- **99%** are investing in technologies or services to address the pandemic’s impact on supply chains
- Supply chain network optimization and visualization applications are the most common investments toward pandemic response
- Nearly all OEMs have had to make supply chain changes due to COVID-19. Most commonly, OEMs have optimized processes or deployed new technology
- The most common changes reported to address logistics issues were to quickly identify new options for international shipping and identifying additional options for “last mile” deliveries
- **More than half** of OEMs are looking to manufacturing partners for risk mitigation and flexibility due to COVID-19
- **35%** say they are more likely to bring manufacturing in-house so they can have greater control
- **Two-thirds** of OEMs say COVID-19 has had the biggest impact on their supply chain in the last decade
- **92%** have experienced a direct financial impact due to COVID-19 supply chain issues

# KEY FINDINGS

## SUPPLY CHAIN RESILIENCE TAKES CENTER STAGE

- **94%** care about supply chain resilience but only two-thirds fund it appropriately
- Material availability, logistics and price escalations are the top focus areas of supply chain resilience programs
- **More than half** report quick recovery and multi-sourcing as their key supply chain resilience goals
- **6 in 10** say their supply chain strategies are focused on responding to disruption and reducing risk in the next two years
- Nearly **70%** say time-to-recover is the most used metric in measuring their supply chain resilience
- Participants agree that sourcing, logistics and trade issues pose greater risks than demand issues
- **82%** say their supply chain footprint has shifted notably due to COVID-19
- **89%** agree that recent events have made the importance of a diversified supply chain clearer



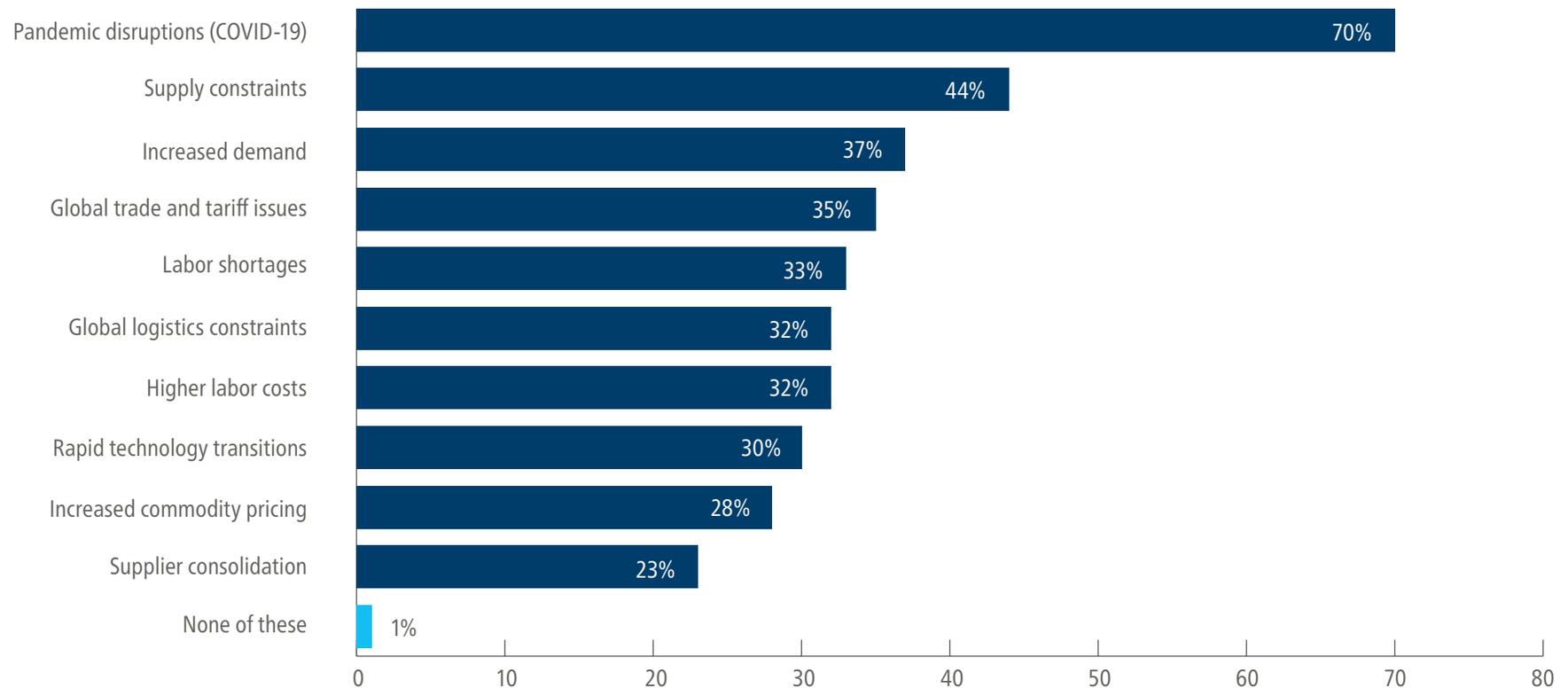
# MARKET DYNAMICS



# COVID-19 HAS THE BIGGEST IMPACT ON SUPPLY CHAINS GLOBALLY

In today's digitally driven marketplace, the importance of efficient supply chain management becomes more obvious. Although many products look like their supply chains are unique and independent, very few are. And with no shortage of disruptions, OEMs worldwide are dealing with numerous headwinds. Seven out of 10 participants say their supply chains are impacted by pandemic disruptions, which can amplify the impact of other market forces.

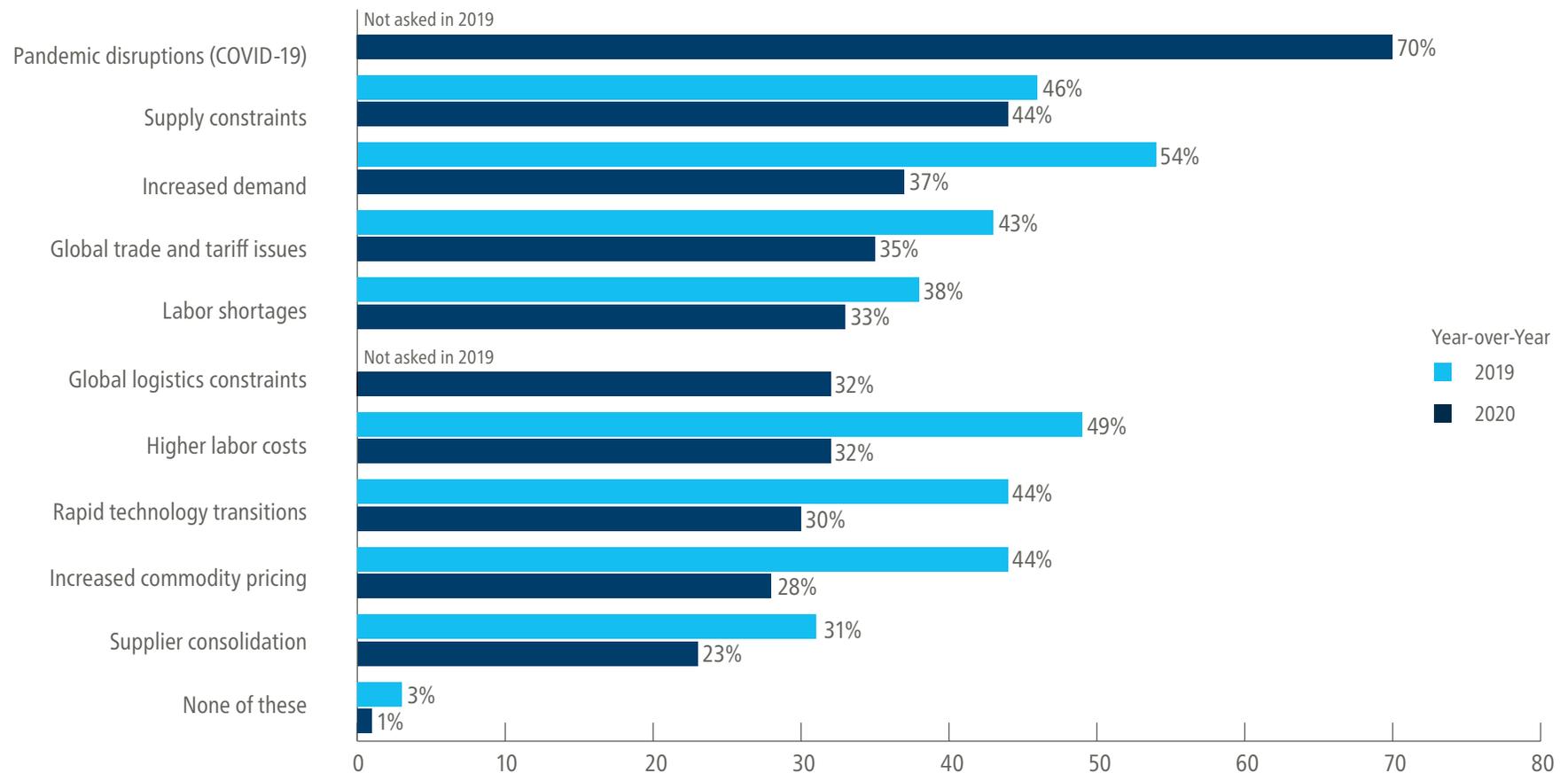
**Which of the following market dynamics are impacting your company's supply chain? Choose all that apply.**



# THE IMPACT OF COVID-19 HAS OVERSHADOWED OTHER FACTORS

While pandemic disruptions were not included in last year's list of market dynamics, it has shot up the list in 2020. The biggest changes in market dynamics from 2019 to 2020 are labor costs and demand.

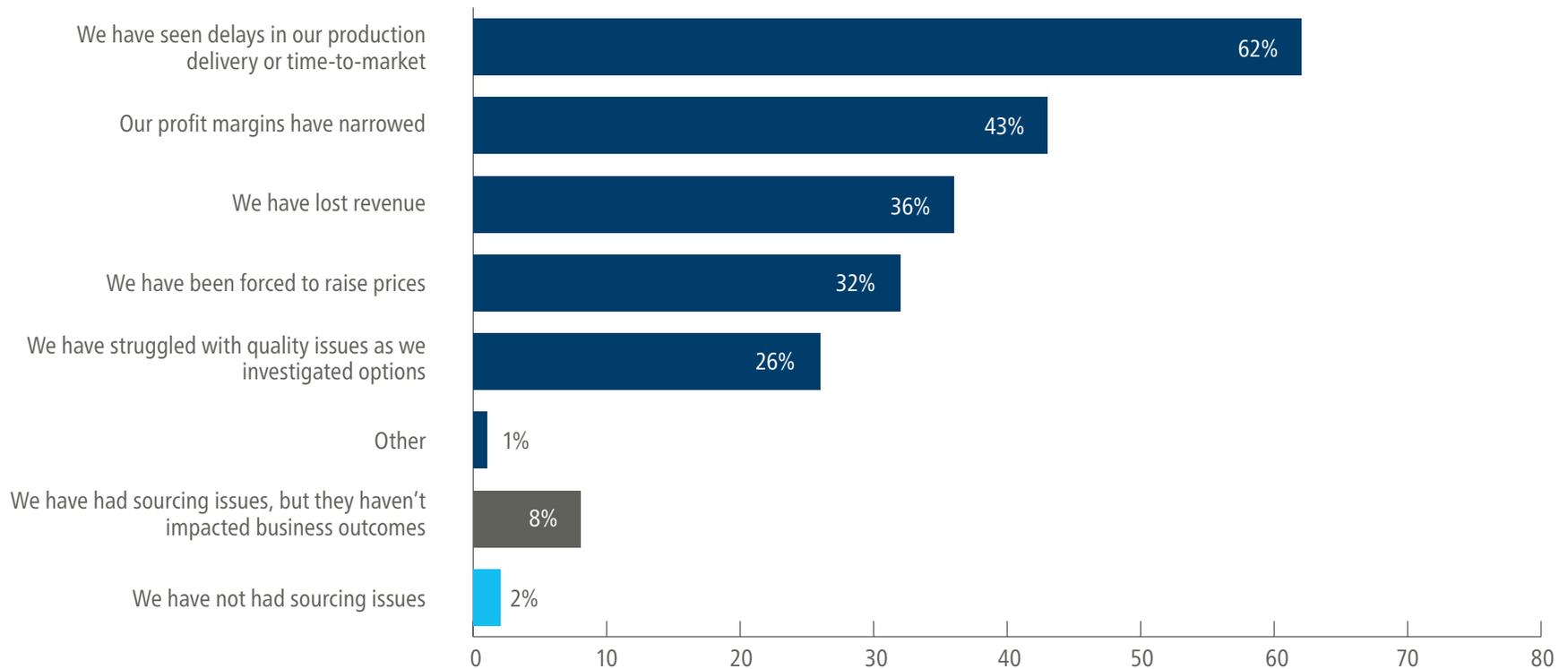
Which of the following market dynamics are impacting your company's supply chain? Choose all that apply.



# 90% REPORT DIRECT BUSINESS IMPACT FROM SOURCING ISSUES

Companies managing electronic components have been facing challenging times with successive waves of supply shortages, price hikes and lengthening lead times for the last few years. COVID-19 amplified some of these sourcing challenges, leading to direct business impact. The most common result of these sourcing issues has been delays in production delivery or time-to-market, followed by narrowed profit margins.

**How have component shortages, limited materials or other sourcing issues impacted your business in the past year?**  
*Choose all that apply.*

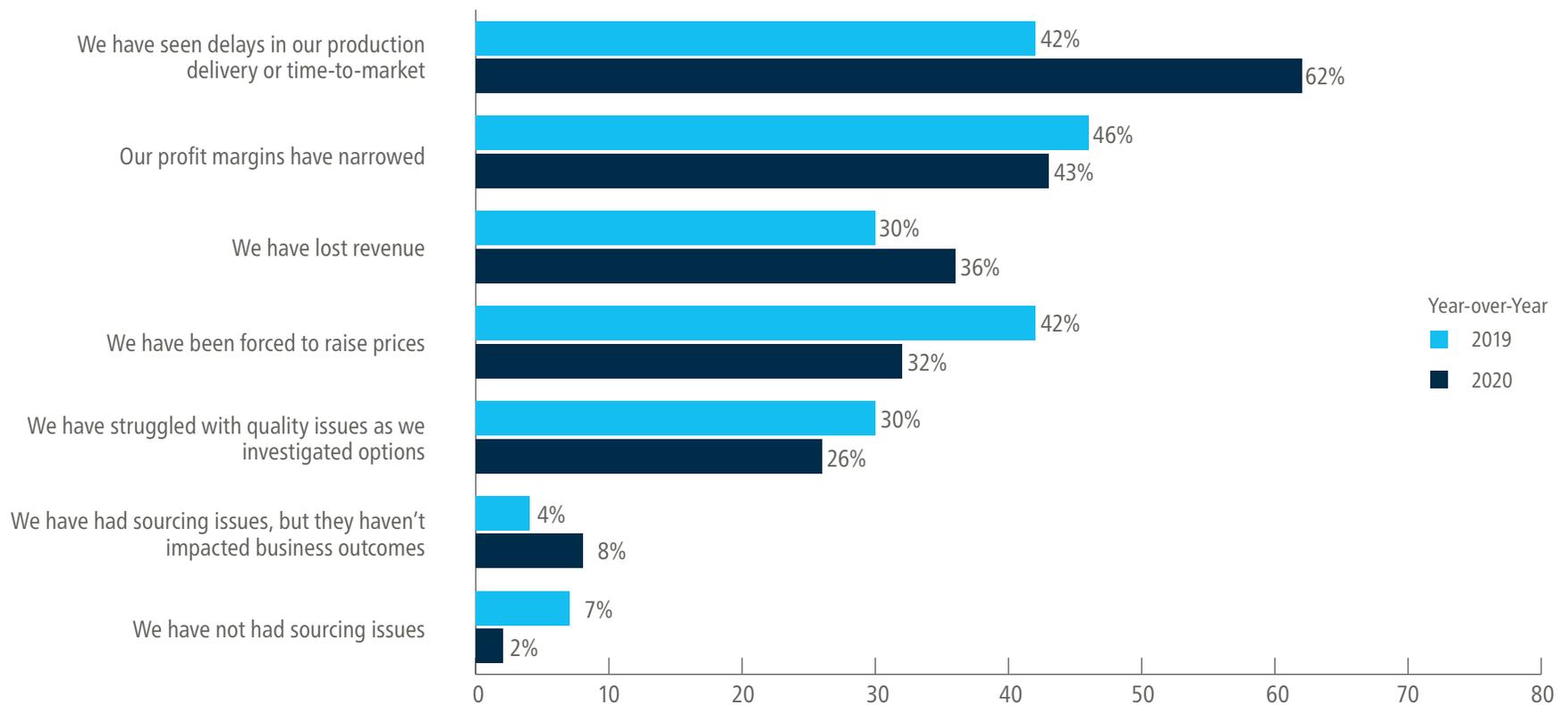


*"Other" responses include the sharp demand fall and rise; having to identify alternative suppliers*

# DELIVERY AND TIME-TO-MARKET DELAYS ARE MORE COMMON IN 2020

Nearly two-thirds of participants said that production delivery or time-to-market delays were more common in 2020 than 2019. There was also a slight uptick in the percentage of companies that reported lost revenue due to sourcing issues. COVID-19 was likely the biggest contributor to these results.

**How have component shortages, limited materials or other sourcing issues impacted your business in the past year?**  
*Choose all that apply.*



# BUSINESS IMPACTS VARY BY INDUSTRY

While OEMs wrestle with numerous sourcing issues, the common business impacts have differed by industry. Participants in the consumer electronics industry were more likely to raise prices due to sourcing issues. Seven in 10 healthcare participants have seen production delivery or time-to-market delays. Nearly four in 10 retail participants have lost revenue due to sourcing issues. More than half of energy & industrial participants experienced narrowed profit margins. Finally, a third of telecommunications participants say they've struggled with quality issues. These findings show the nuances of each industry as they feel the impacts of sourcing issues.

**How have component shortages, limited materials or other sourcing issues impacted your business in the past year?**

*(Most common by industry)*



**Consumer Electronics**

We have been forced to raise prices

**42%**



**Healthcare**

We have seen delays in our production delivery or time-to-market

**71%**



**Retail**

We have lost revenue

**37%**



**Energy & Industrial**

Our profit margins have narrowed

**54%**



**Telecommunications**

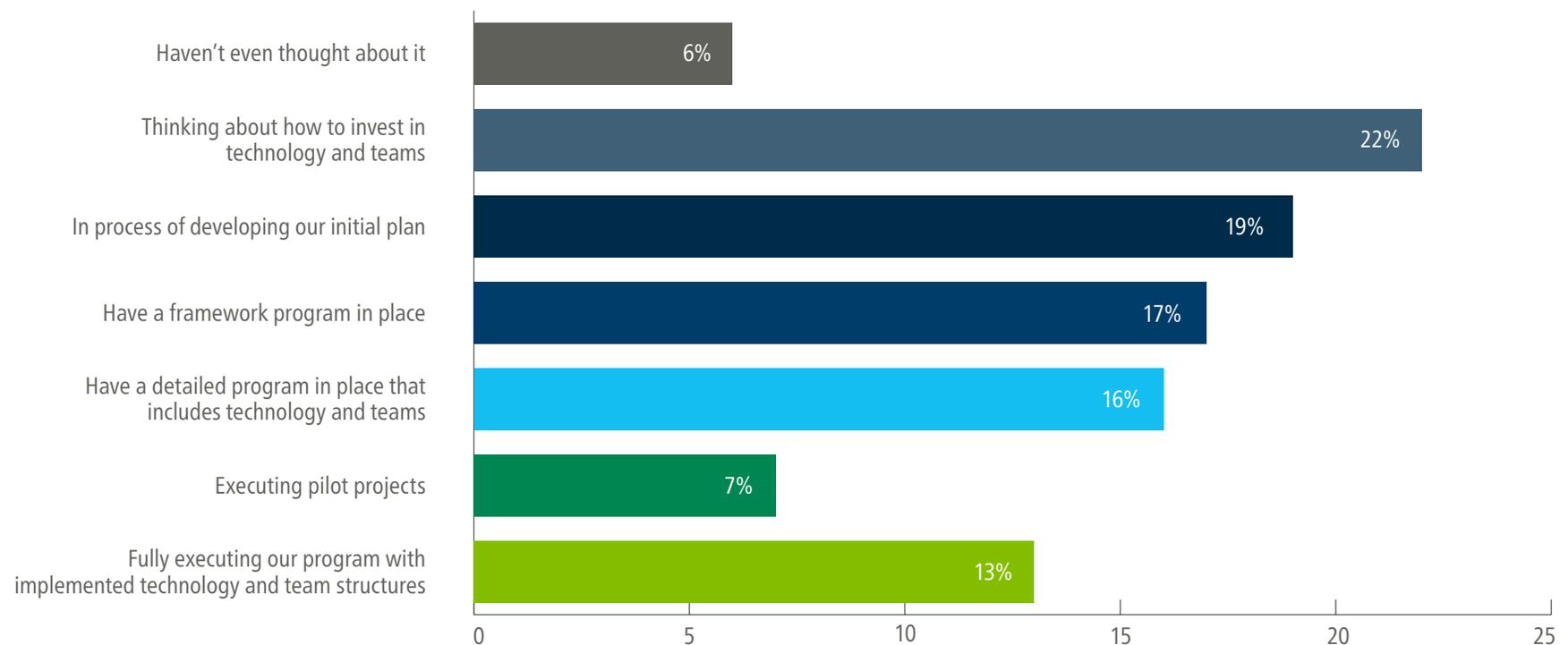
We have struggled with quality issues as we investigated options

**33%**

# MATURITY OF PREDICTIVE SUPPLY CHAIN RISK MANAGEMENT INITIATIVES VARY SIGNIFICANTLY

A company's predictive supply chain risk management program may include the technology and teams involved in the management of events like sourcing shortages, natural disasters or geopolitical change. Given the numerous challenges of global supply chains and rise in technology, most companies are still in the early stages of developing their program. Only 13% are fully executing their predictive supply chain management initiatives.

**How would you characterize your company's PREDICTIVE supply chain risk management initiatives (i.e. technology and teams involved in the management of events such as pandemic/global health issues, sourcing shortages, natural disasters, and geo-political change)? Choose the one answer that most closely applies.**





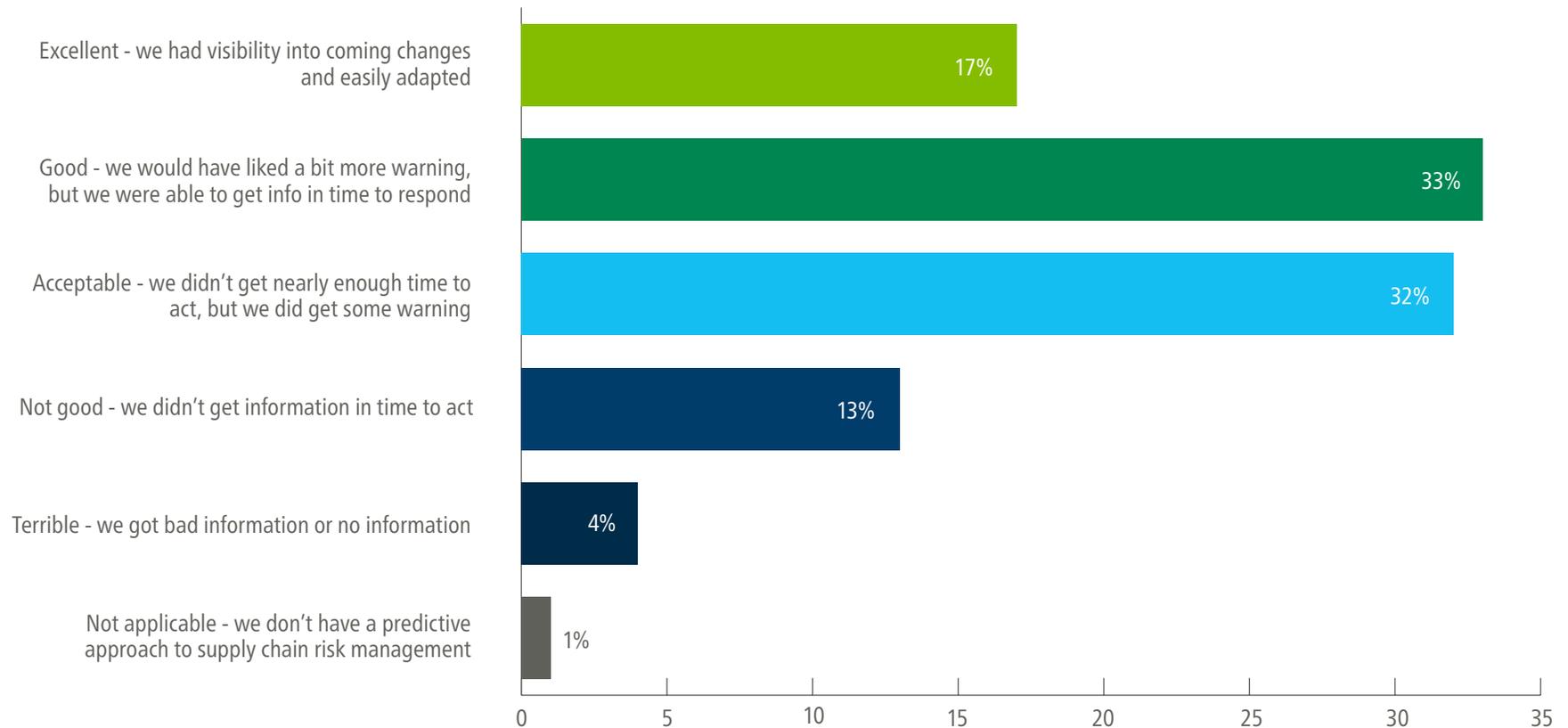
# SUPPLY CHAINS VS. COVID-19



# ONLY 17% RATED THEIR PREDICTIVE SUPPLY CHAIN AS EXCELLENT IN FACING COVID-19

Aligned with the 13% that are fully executing their predictive supply chain management initiatives, only 17% rated their predictive supply chain risk management approach as excellent in dealing with the impact of COVID-19.

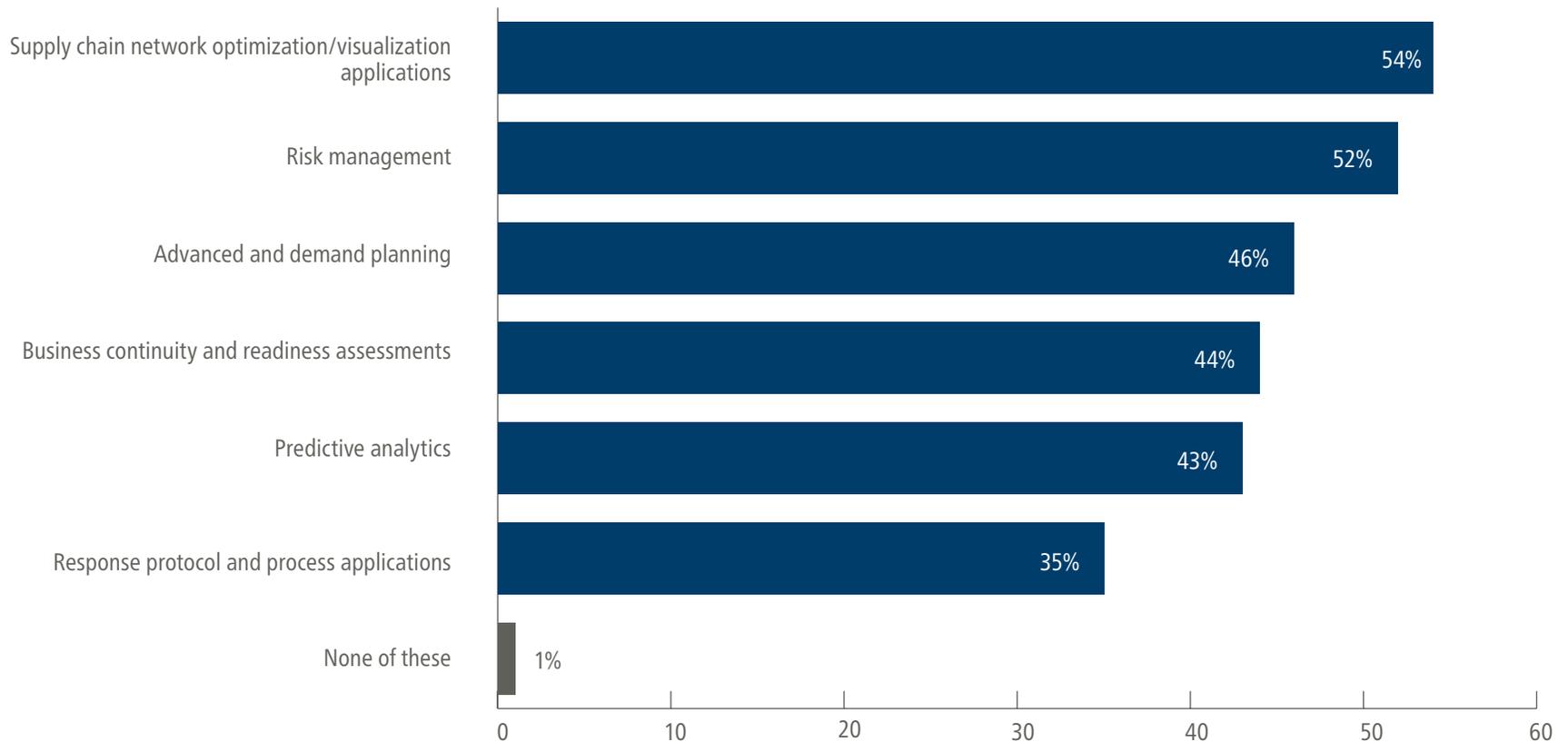
## How effective was your company's predictive supply chain risk management approach in dealing with the impact of COVID-19?



# NEARLY ALL ARE INVESTING IN SUPPLY CHAIN TECH OR SERVICES TO ADDRESS COVID-19

Nearly all participants indicated that they are investing in technologies and services to address the impacts of COVID-19. More than half are investing in network optimization and visualization applications or risk management technologies or services.

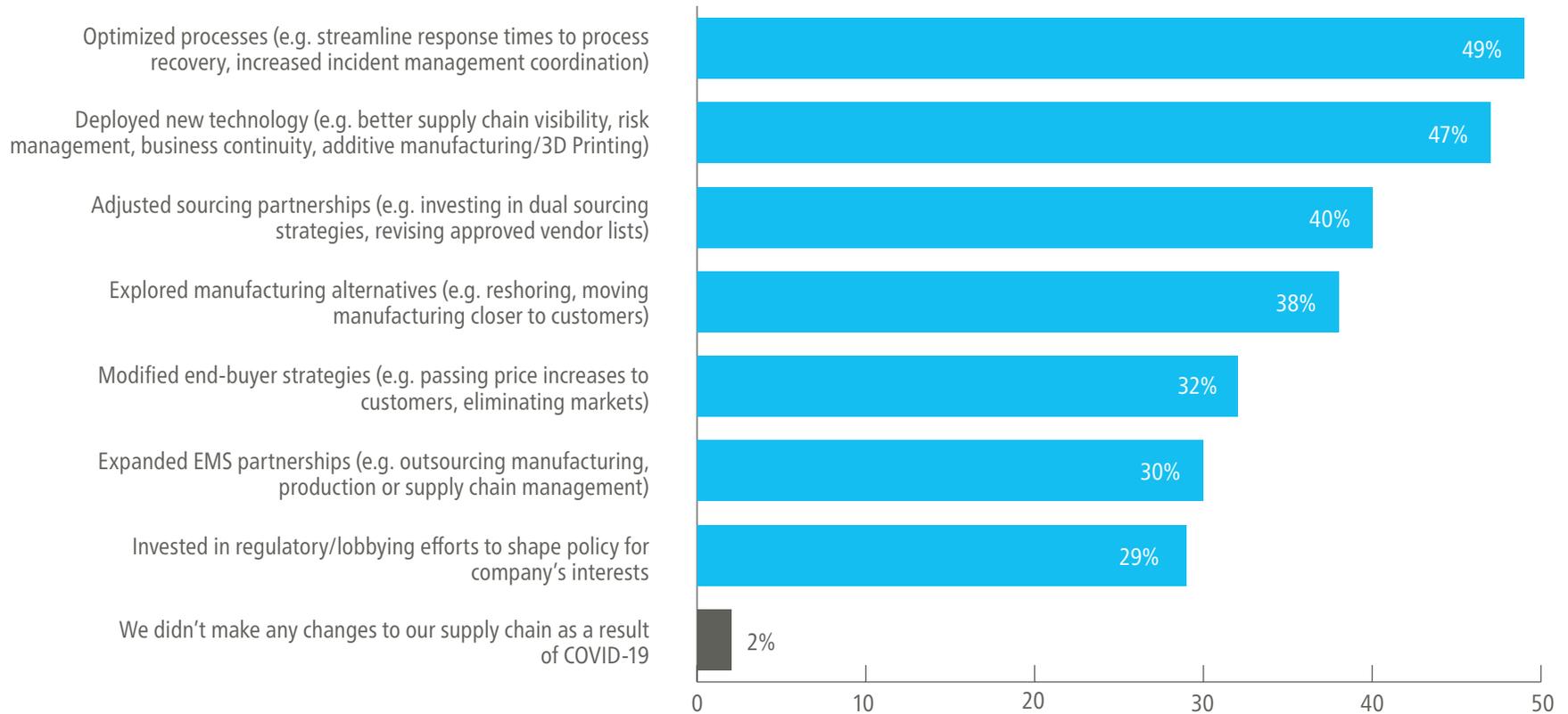
**Is your company investing in any of the following technologies or services to address the impacts of COVID-19 on your supply chain? Choose all that apply.**



# COVID-19 HAS REQUIRED SUPPLY CHAIN CHANGES WORLDWIDE

In dealing with a pandemic response, 98% of companies have made changes. Nearly half have optimized their processes to streamline response times to process recovery or increased incident management coordination. Another 47% have deployed new technology in areas including supply chain visibility, risk management and additive manufacturing.

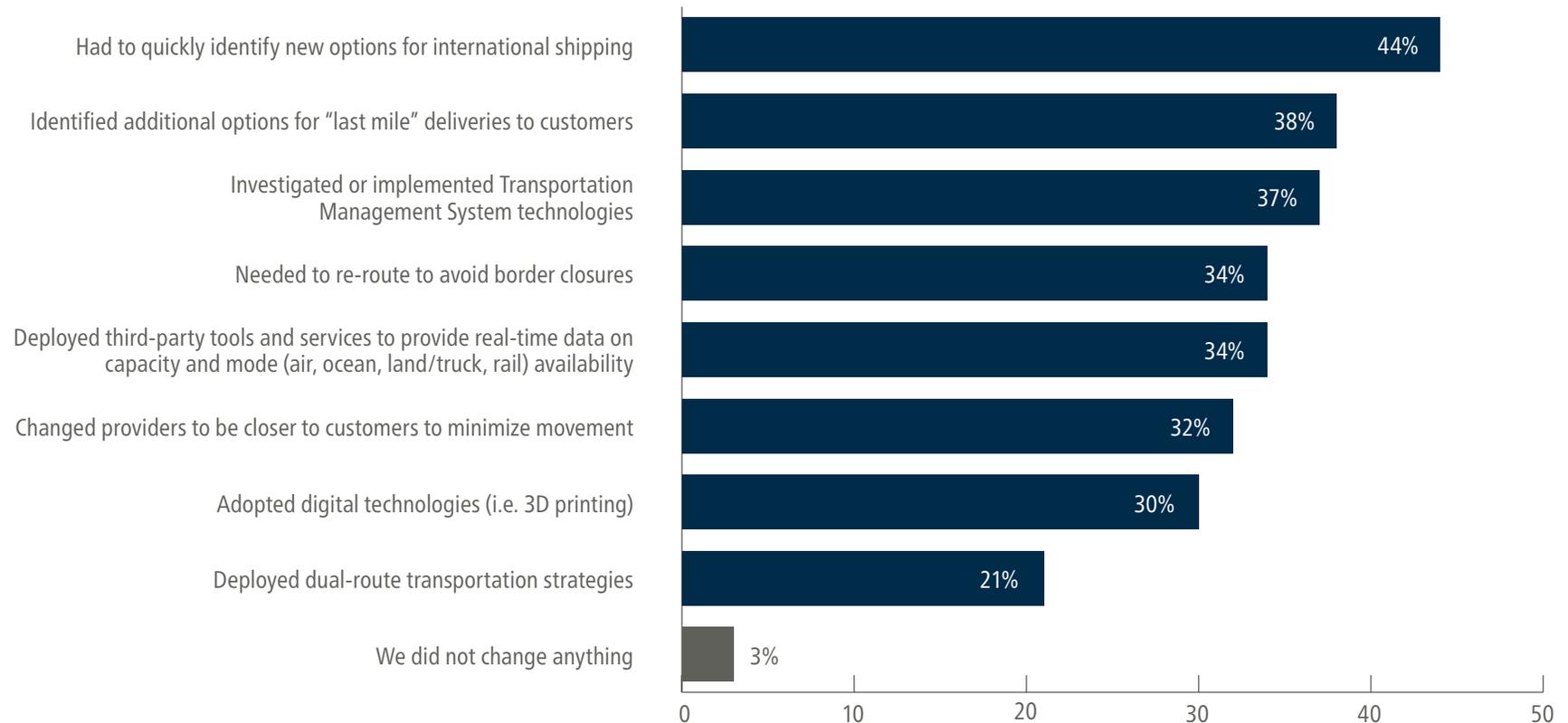
**What changes has your company made to your SUPPLY CHAIN as a result of COVID-19? Choose all that apply.**



# LOGISTICS CHANGES HAVE BEEN A NECESSITY DURING COVID-19

One of the unique challenges of the pandemic was related to logistics. Between lockdowns, border closures and travel restrictions, some supply chains were in a complete standstill. As a result, 44% of participants had to quickly identify new options for international shipping. Others pursued a combination of different changes to alleviate their logistics issues.

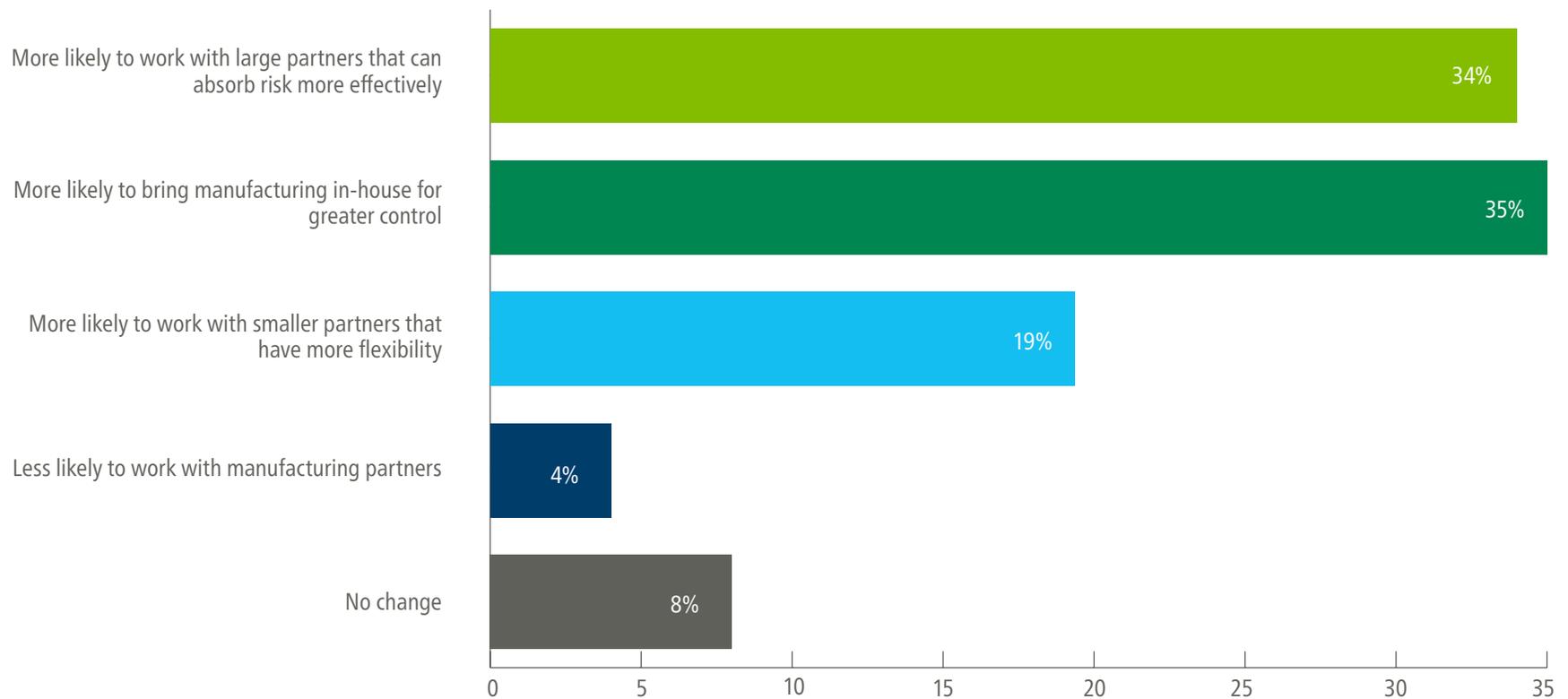
**What changes did your organization make to your LOGISTICS as a result of COVID-19? Choose all that apply.**



# MAJORITY ARE LOOKING TO MANUFACTURING PARTNERS IN LIGHT OF COVID-19

More than half are looking to manufacturing partners considering the impact of the pandemic. Specifically, 34% say they're more likely to work with large partners that can absorb risk more effectively and 19% say the same for smaller partners that have more flexibility. Another 35% say they're more likely to bring manufacturing in-house for greater control as a result of COVID-19.

**How has COVID-19 impacted your company's approach to working with manufacturing partners? Choose the one answer that most closely applies.**

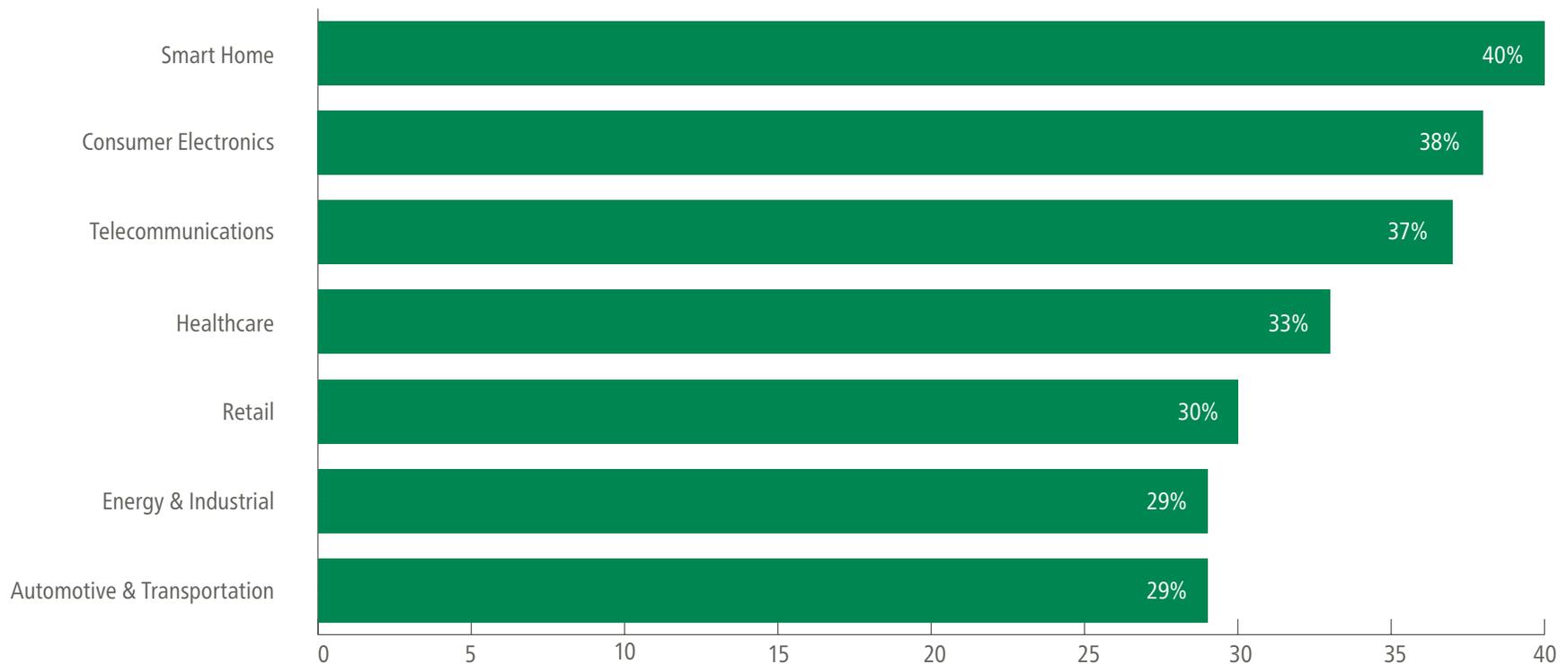


# CERTAIN INDUSTRIES PREFER MANUFACTURING PARTNERS THAT CAN ABSORB RISK MORE EFFICIENTLY

Of the industries surveyed, those that produce smart home goods, consumer electronics or telecommunications equipment are more likely to work with large partners that can absorb risk more effectively.

**How has COVID-19 impacted your company's approach to working with manufacturing partners? Choose the one answer that most closely applies.**

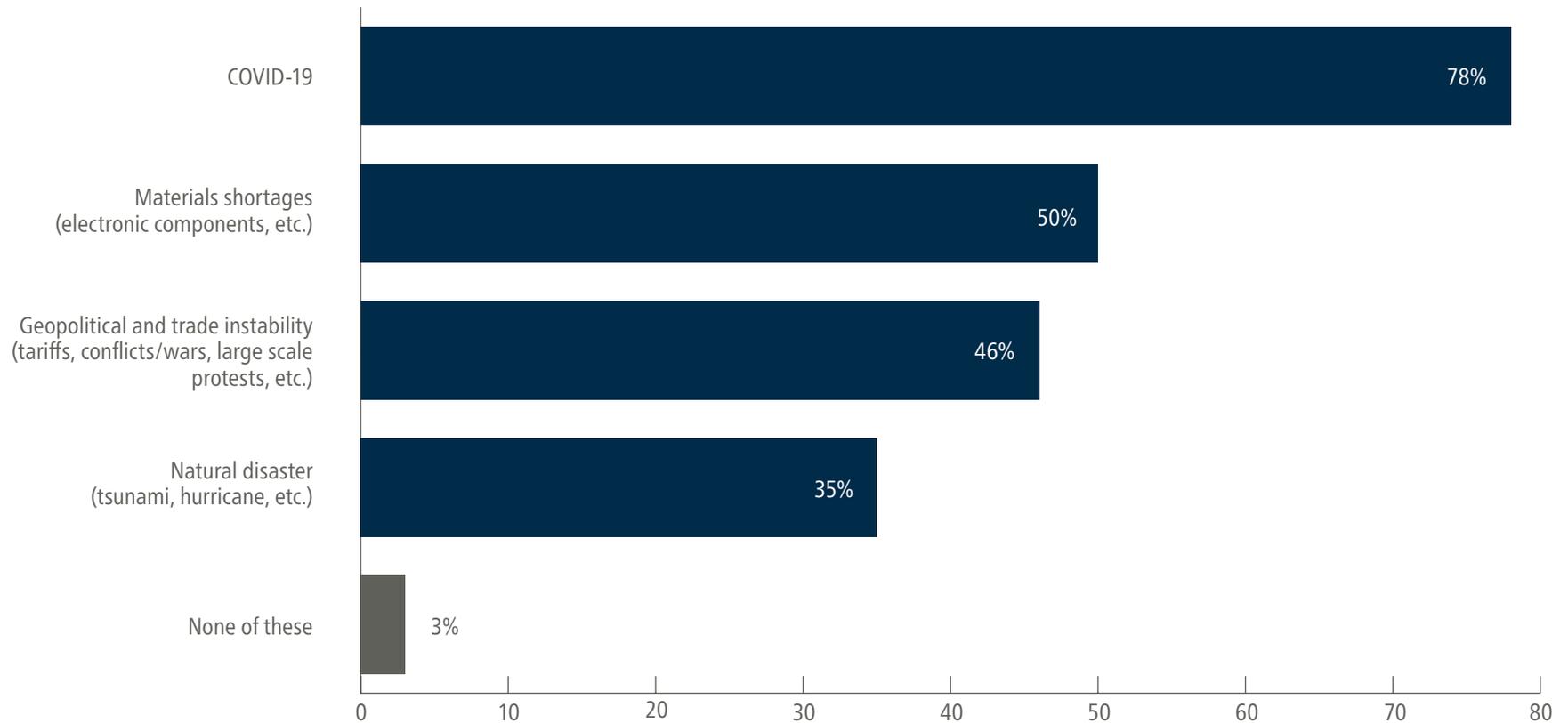
*"More likely to work with large partners that can absorb risk more effectively"*



# COVID-19 HAS IMPACTED MORE SUPPLY CHAINS THAN OTHER PAST DISRUPTIONS

COVID-19 is not the only disruption that the manufacturing world has seen in the last decade. In fact, there have been no lack of disruptions worldwide, between materials shortages, geopolitical instabilities and disasters. Still, nearly 80% of participants say COVID-19 has been the most common event to impact supply chains.

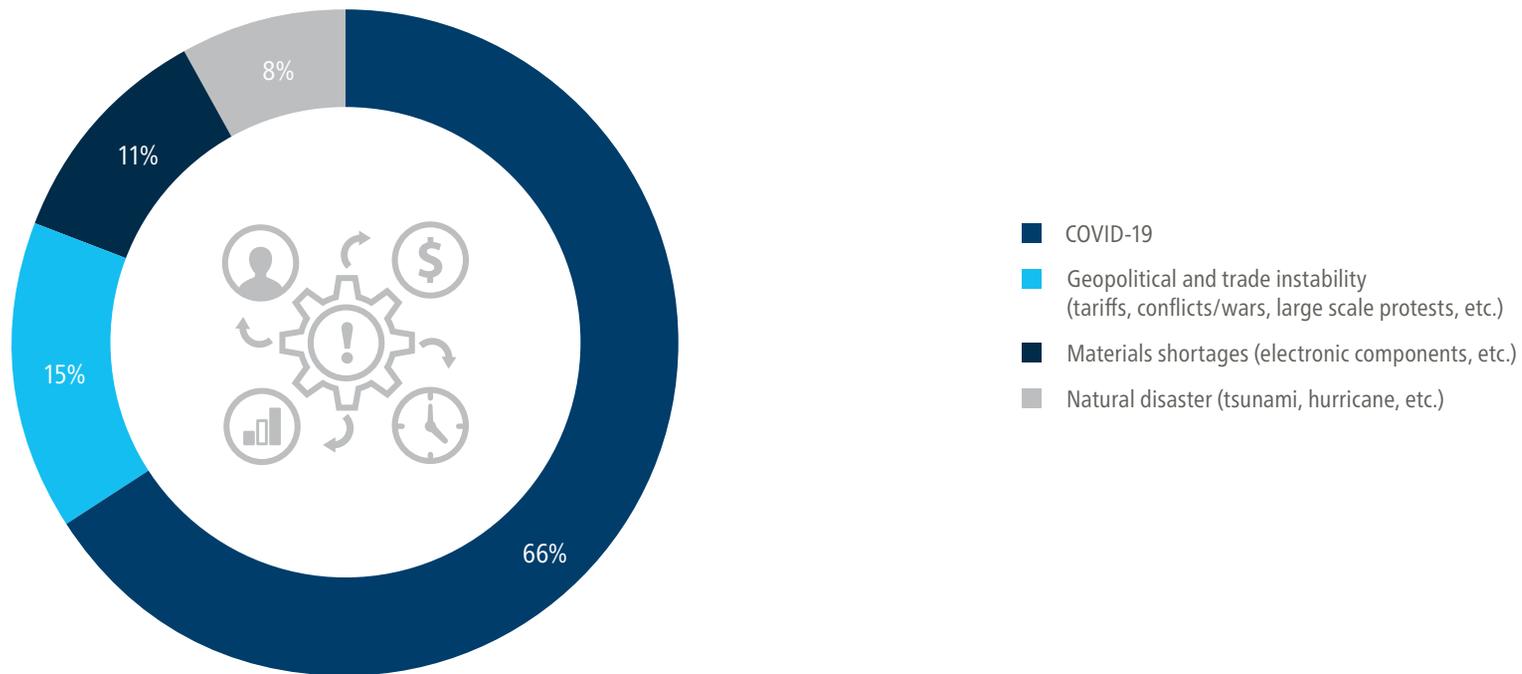
Which of the following have had an impact on your company's supply chain in the past 10 years? *Choose all that apply.*



# COVID-19 HAS CAUSED THE BIGGEST SUPPLY CHAIN DISRUPTION IN THE LAST DECADE

COVID-19's negative impact rivals any disruption of global supply chains in memory. This disruption has been bigger, lasted longer and has come in an unexpected form. It has precipitated both massive disruption within the supply chain and tremendous increases in product demand. Two-thirds of participants say COVID-19 has had the biggest impact on business outcomes in the last decade.

Which of these supply chain issues had the **BIGGEST** impact on business outcomes? Choose the answer that most closely applies.

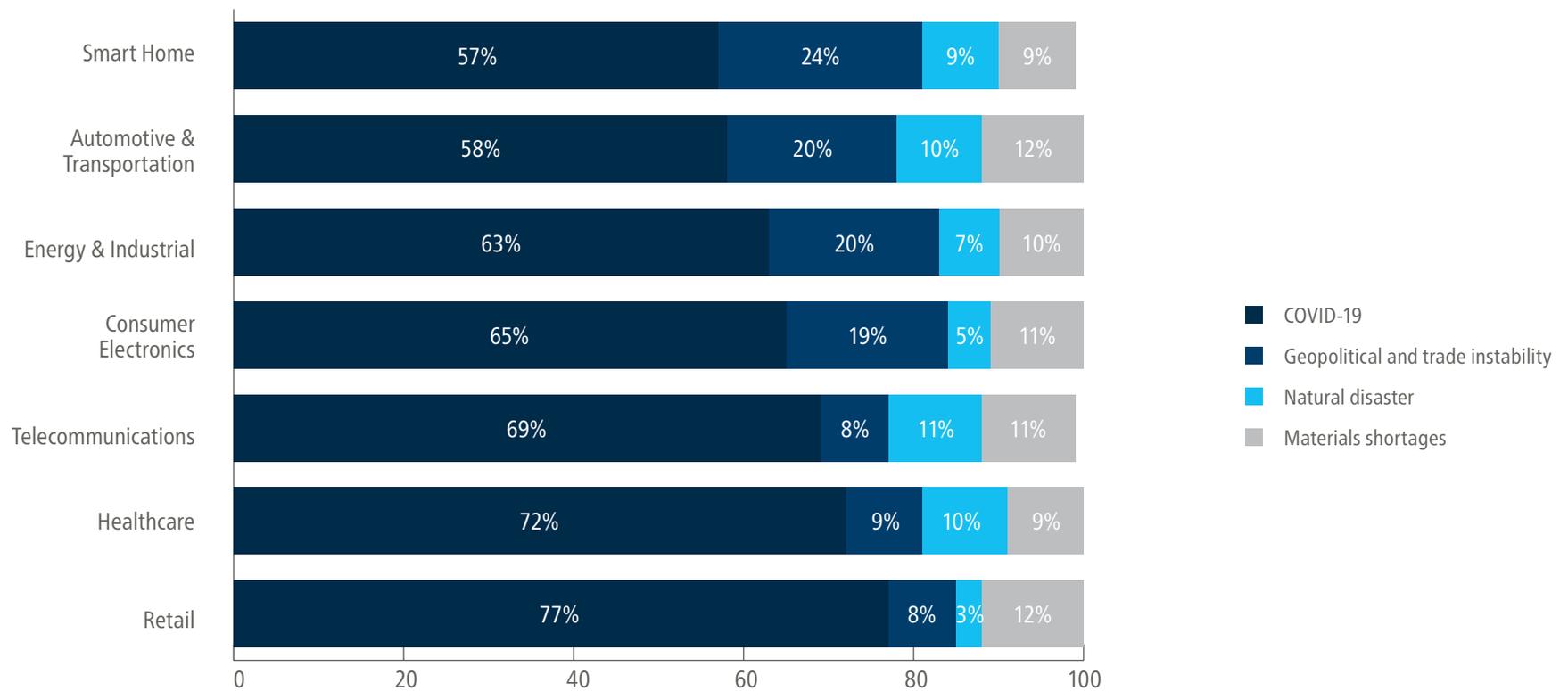


# COVID-19 DISRUPTION HAS IMPACTED RETAIL AND HEALTHCARE MOST

COVID-19 was the biggest disrupter of business outcomes across all industries, and a deep dive shows the magnitude of the pandemic's impact. Retail and healthcare were most impacted by COVID-19.

Which of these supply chain issues had the BIGGEST impact on business outcomes? Choose the answer that most closely applies.

(By Industry)



# 92% HAVE EXPERIENCED A DIRECT FINANCIAL IMPACT DUE TO COVID-19 SUPPLY CHAIN ISSUES

Most OEMs have experienced a negative financial impact as a result of supply chain issues related to COVID-19. More than one-third say COVID-19 has cost them between \$50 million to \$100 million. Only 8% of OEMs say they've seen an impact of more than \$500 million on their operations due to the pandemic. Another 8% haven't seen any negative financial impact due to COVID-19 supply chain issues.

**To the best of your knowledge, what has been the negative financial impact on your company's business outcomes as a result of supply chain issues related to COVID-19? Choose the answer that most closely applies.**

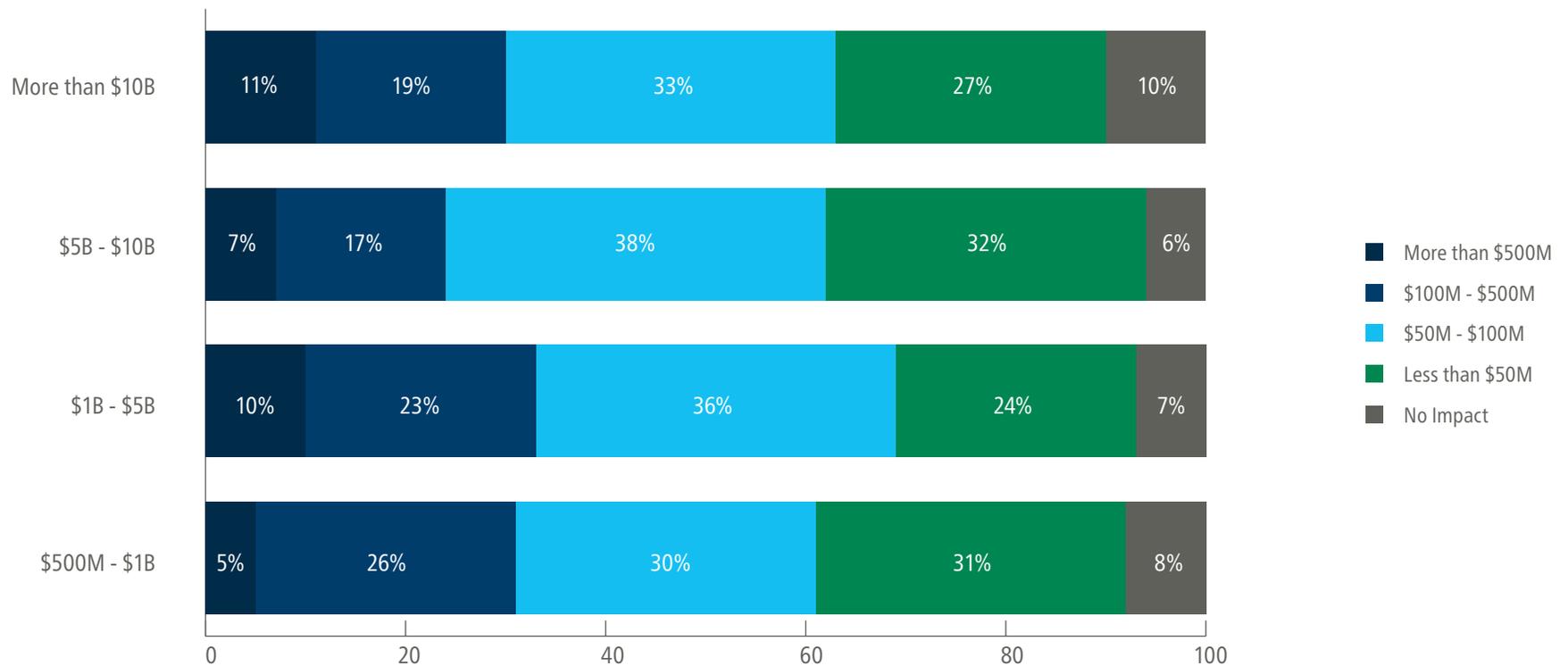


# REVENUE IMPACTS NOT CORRELATED TO COMPANY SIZE

A deep dive by company size shows that the revenue impact of COVID-19 is not correlated to company size. In fact, most companies have experienced less than \$100 million in losses.

To the best of your knowledge, what has been the negative financial impact on your company's business outcomes as a result of supply chain issues related to COVID-19? Choose the one answer that most closely applies.

(By Company Size)

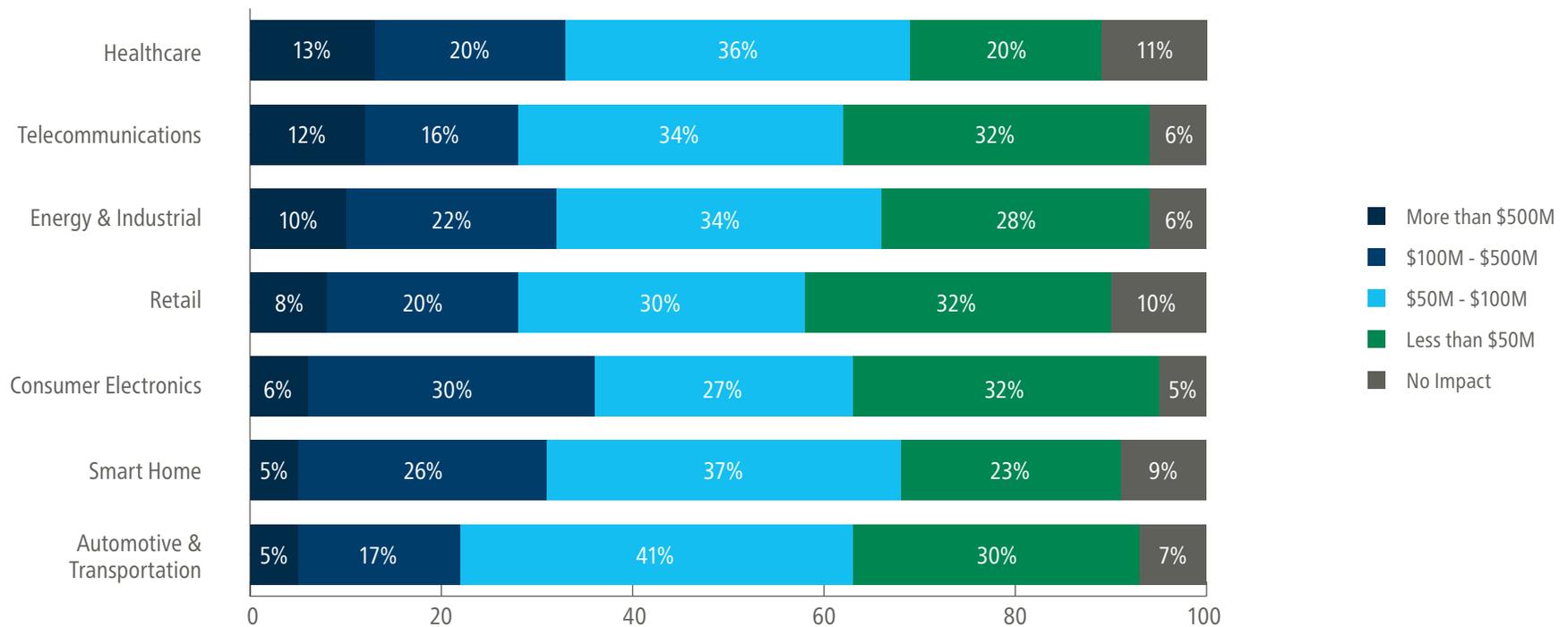


# ALL INDUSTRIES REPORT DIRECT FINANCIAL IMPACT FROM COVID-19 SUPPLY CHAIN ISSUES

Reviewing the data from the perspective of each industry shows that all industries report some direct financial impact, but there are nuances within each industry. For example, the smart home industry is more likely to report losses between \$50 million to \$500 million, whereas consumer electronics are more likely to have losses above \$100 million.

**To the best of your knowledge, what has been the negative financial impact on your company's business outcomes as a result of supply chain issues related to COVID-19? Choose the one answer that most closely applies.**

*(By Industry)*





# SUPPLY CHAIN RESILIENCE



# 94% CARE ABOUT RESILIENCE BUT ONLY TWO-THIRDS FUND IT ADEQUATELY

While the post-pandemic supply chain may be better designed around risk management and resiliency, only two-thirds appropriately fund a company culture toward resilience. Nearly three in 10 say they talk about supply chain resilience but don't adequately fund it.

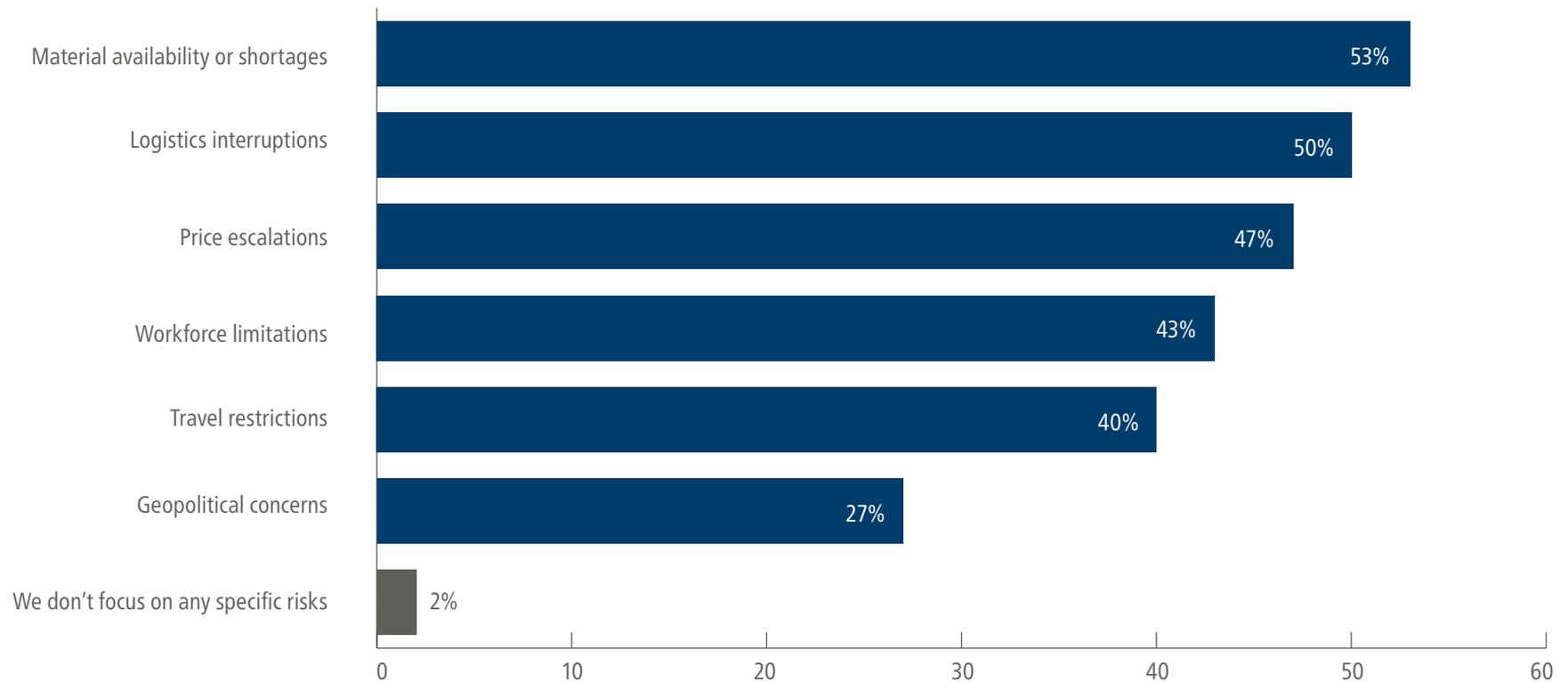
Which of the following statements best represents your company culture?



# MATERIAL AVAILABILITY AND LOGISTICS ARE PRIORITY FOR RESILIENCE PROGRAMS

Without a doubt, real-time intelligence and data are the antidote to risk. The most commonly reported risks OEMs focus on managing as part of their resilience program include material availability or shortages; logistics interruptions; and price escalations.

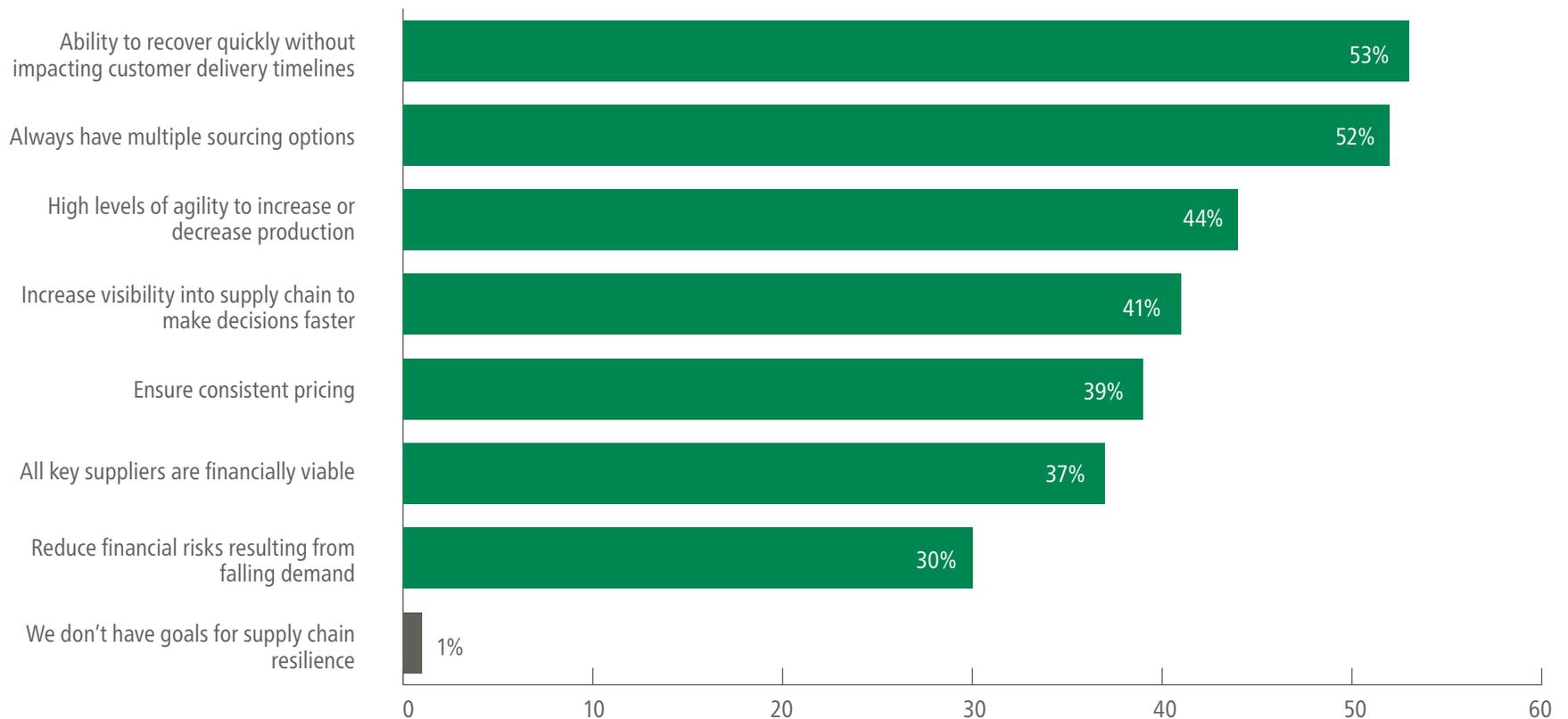
**What are the top risks that your organization's supply chain resilience program focuses on managing?**  
*Choose up to 3 of the following.*



# MOST COMMON RESILIENCE PROGRAM GOALS: QUICK RECOVERY AND MULTI-SOURCING

Considering that 62% of OEMs have experienced production delivery or time-to-market delays due to the pandemic, resilience programs are primarily focused on quick recovery to avoid impacting customer delivery timelines as well as developing multi-sourcing options.

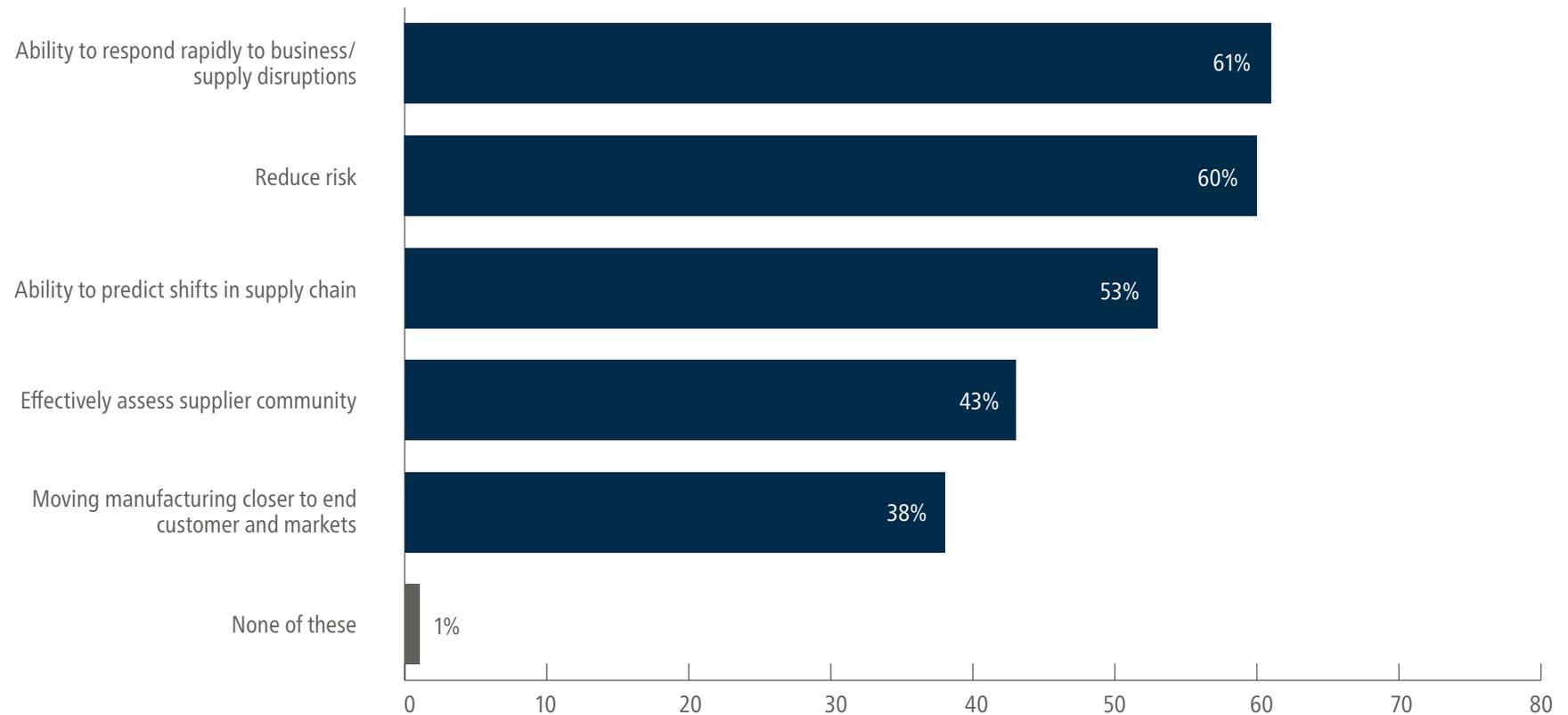
**What are the key goals of your company's approach to supply chain resilience?** *Choose all that apply.*



# SHORT-TERM SUPPLY CHAIN STRATEGIES FOCUSED ON RESPONDING TO DISRUPTION AND REDUCING RISK

The pandemic has once again shown that supply chain management requires quick thinking and action. Over the next two years, OEMs are laser-focused on their ability to respond rapidly to disruptions and reduce their risk. In addition, they will be working on their ability to predict shifts in the supply chain to appropriately (and proactively) respond to it.

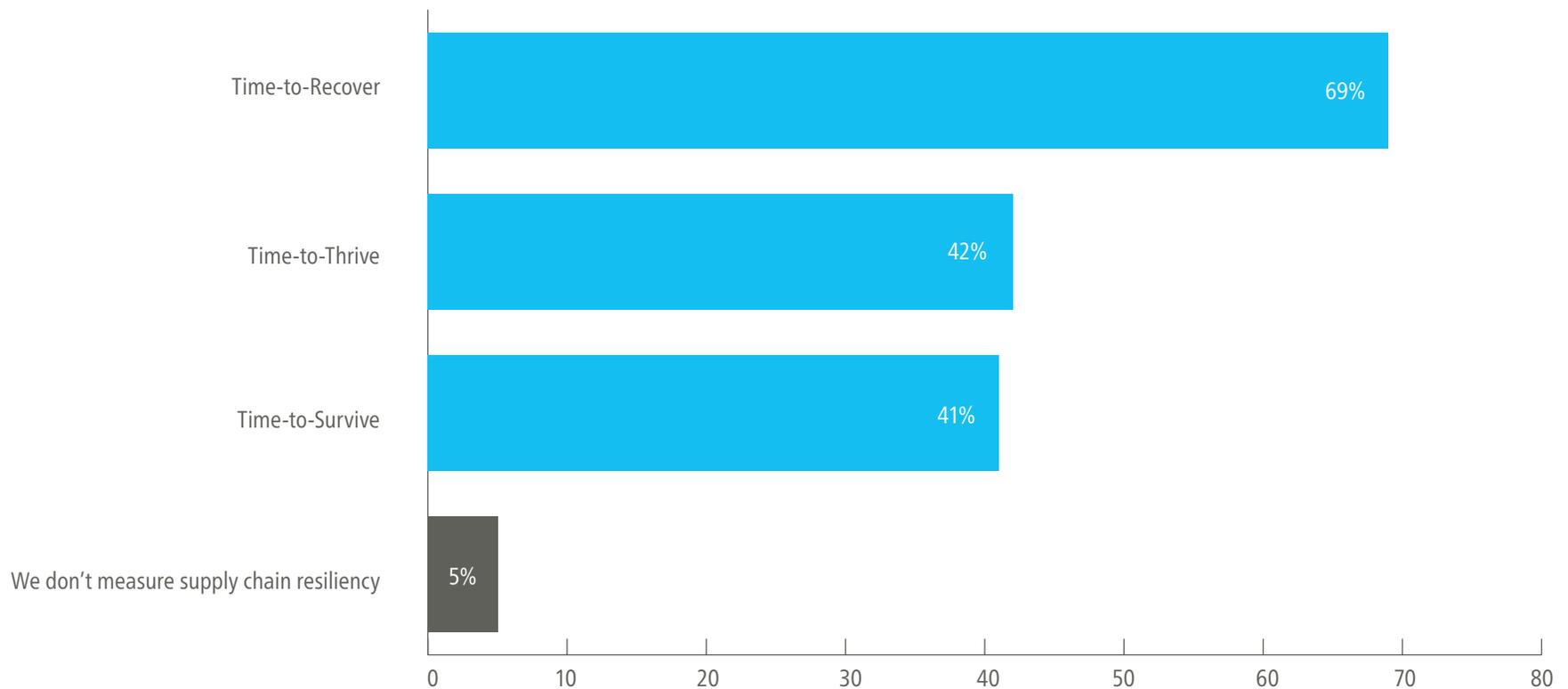
Which of the following are important to your supply chain strategies in the next two years? *Choose all that apply.*



# MOST COMMONLY USED SUPPLY CHAIN RESILIENCY METRIC IS TIME-TO-RECOVER

Time-to-recover is the most common resiliency metric between OEMs. This metric examines the time it takes for a particular node in the supply chain to be restored to full functionality after a disruption. The survival metric measures the maximum time the supply chain can match supply with demand after a node is disrupted. More than four in 10 say they use time-to-thrive and time-to-survive.

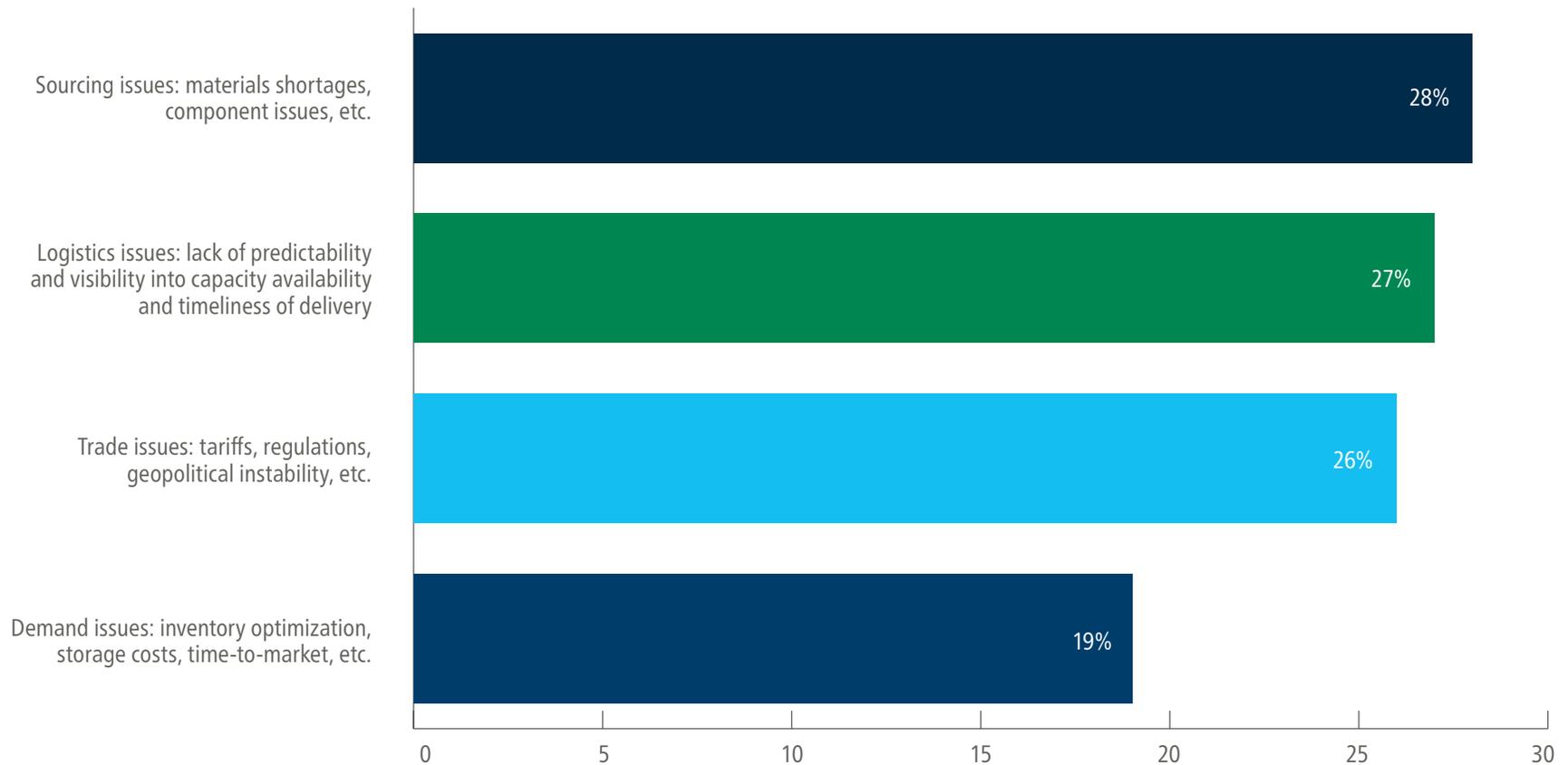
**What metrics does your organization use to measure supply chain resiliency? Choose all that apply.**



# NO AGREEMENT ON A SINGLE RISK POINT IN THE SUPPLY CHAIN

There is no consensus on a single risk point in the supply chain. But participants agree that sourcing, logistics and trade issues pose greater risk than demand issues.

**In your opinion, what creates the greatest risk within your supply chain? Choose the one answer that most closely applies.**

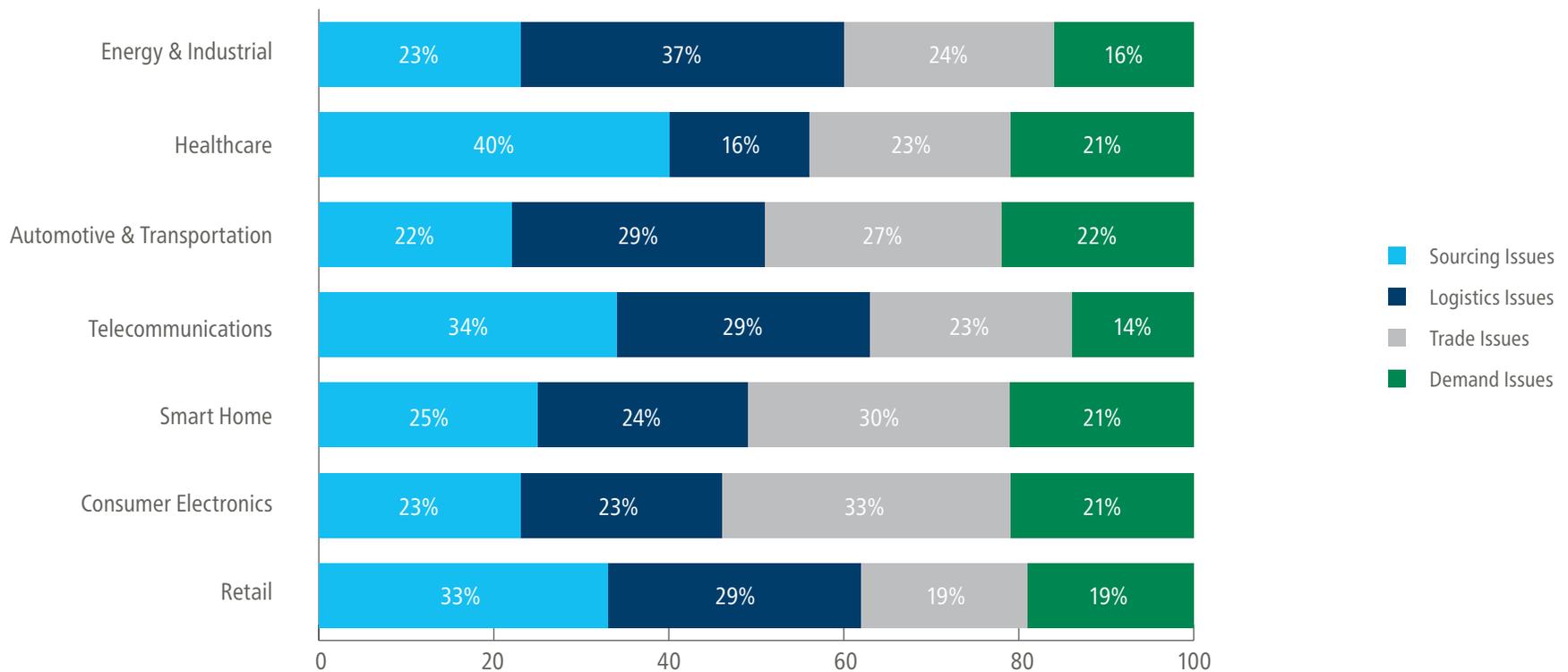


# SOME INDUSTRIES HAVE CLEAR RISK FACTORS

While there may not be a clear single risk factor in the supply chain, some industries have clear risk factors. For example, energy & industrial is more likely to see logistics issues as their greatest risk. Healthcare mostly grapples with sourcing issues. The smart home and consumer electronics industries are most impacted by trade issues.

**In your opinion, what creates the greatest risk within your supply chain? Choose the one answer that most closely applies.**

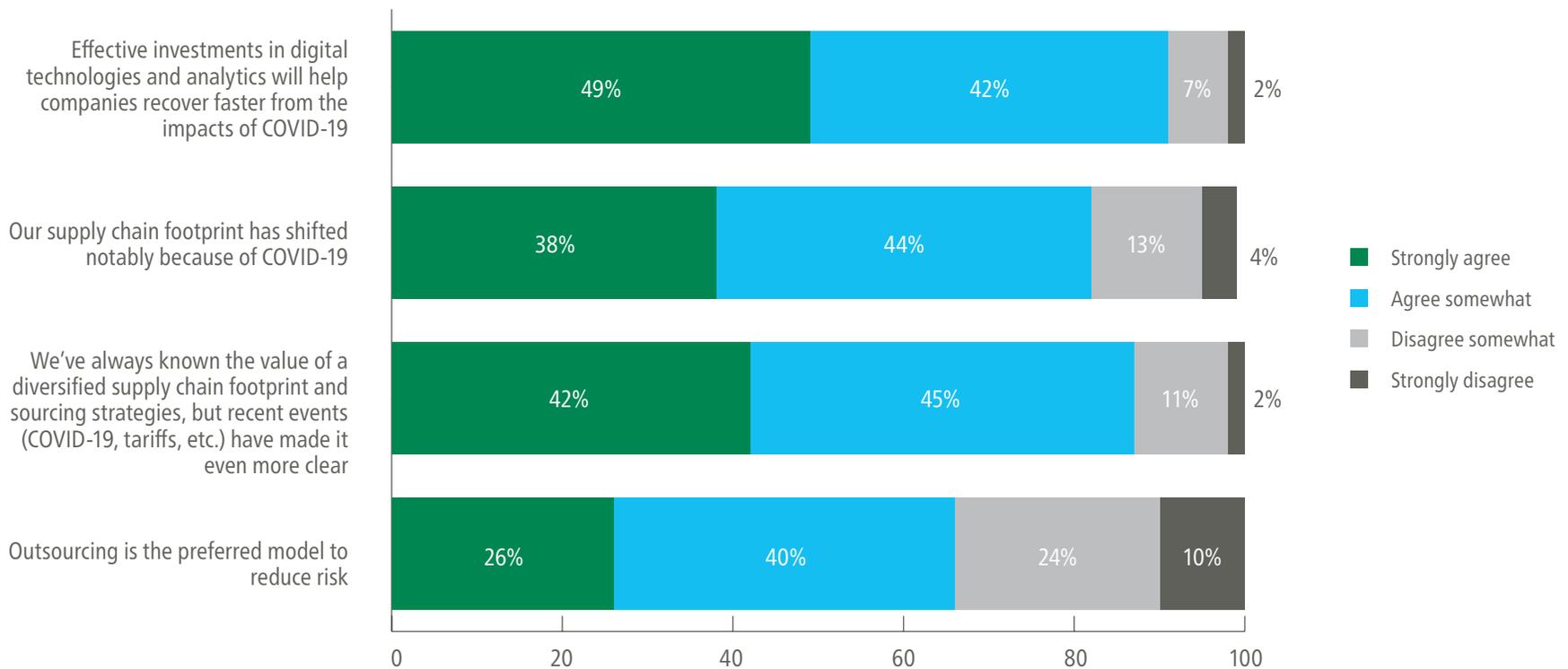
*(By Industry)*



# BROAD AGREEMENT WITH A WIDE RANGE OF MESSAGES

As OEMs focus on their “time-to-recover” metric when dealing with disruptions, digital technologies and analytics are key. More than nine in 10 agree that effective investments in these areas will help companies recover faster from the impacts of the pandemic. Another 82% say their supply chain footprint has shifted notably due to COVID-19. More than six in 10 say that outsourcing is the preferred model to reduce risk, and 89% say recent events have made the importance of a diversified supply chain clearer.

Please indicate your agreement with each of the following statements.



# SURVEY METHOD AND PARTICIPANTS

## Research Goal

The primary research goal was to capture hard data on how COVID-19 will impact supply chains, what effects it has already had and how organizations are changing in response. Risk management and supply chain resilience were key pieces to this story.

## Methodology

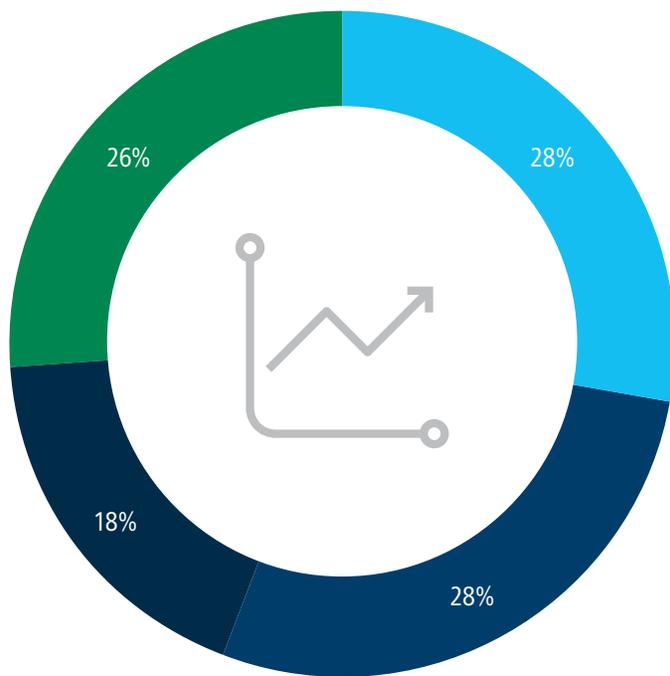
An online survey was fielded to supply chain decision-makers. Responses were captured between August 18-27, 2020. Certain questions were repeated from a 2019 survey to enable trend analysis.

## Participants

A total of 715 qualified participants completed the survey. All participants had decision making responsibility for supply chain budgets at an original equipment manufacturer (OEM) with more than \$500 million in annual revenue. Participants represented seven unique industries: automotive and transportation; consumer electronics; healthcare; telecommunications; energy and industrial; smart home; and retail. Each industry category had at least 100 respondents to enable deeper analysis.

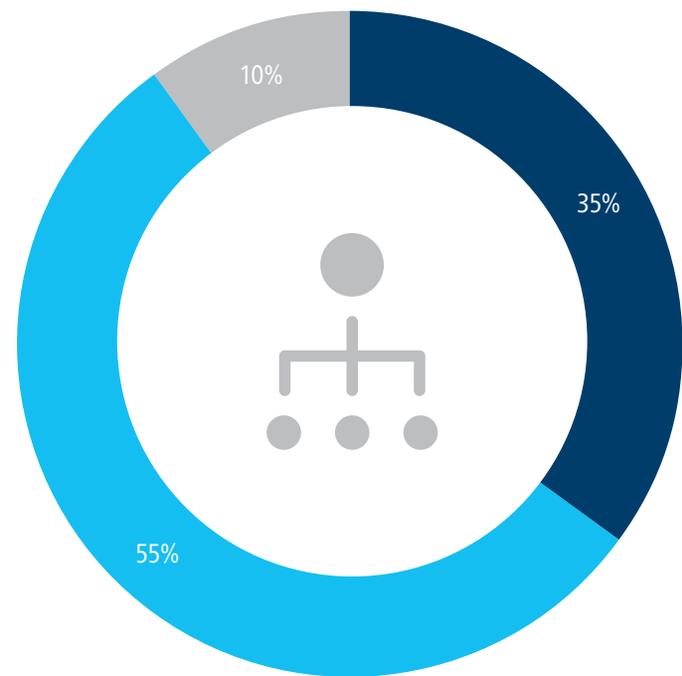
# SURVEY PARTICIPANTS

Company Size  
(Annual Revenue)



- \$500M - \$1B
- \$1B - \$5B
- \$5B - \$10B
- More than \$10B

Job Level



- Executive
- Team manager
- Senior individual contributor

# SURVEY PARTICIPANTS

## Industry



**RETAIL**  
14%



**CONSUMER ELECTRONICS**  
14%



**SMART HOME**  
14%



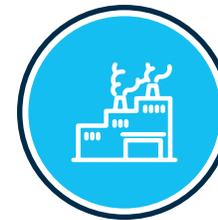
**TELECOMMUNICATIONS**  
14%



**AUTOMOTIVE &  
TRANSPORTATION**  
15%

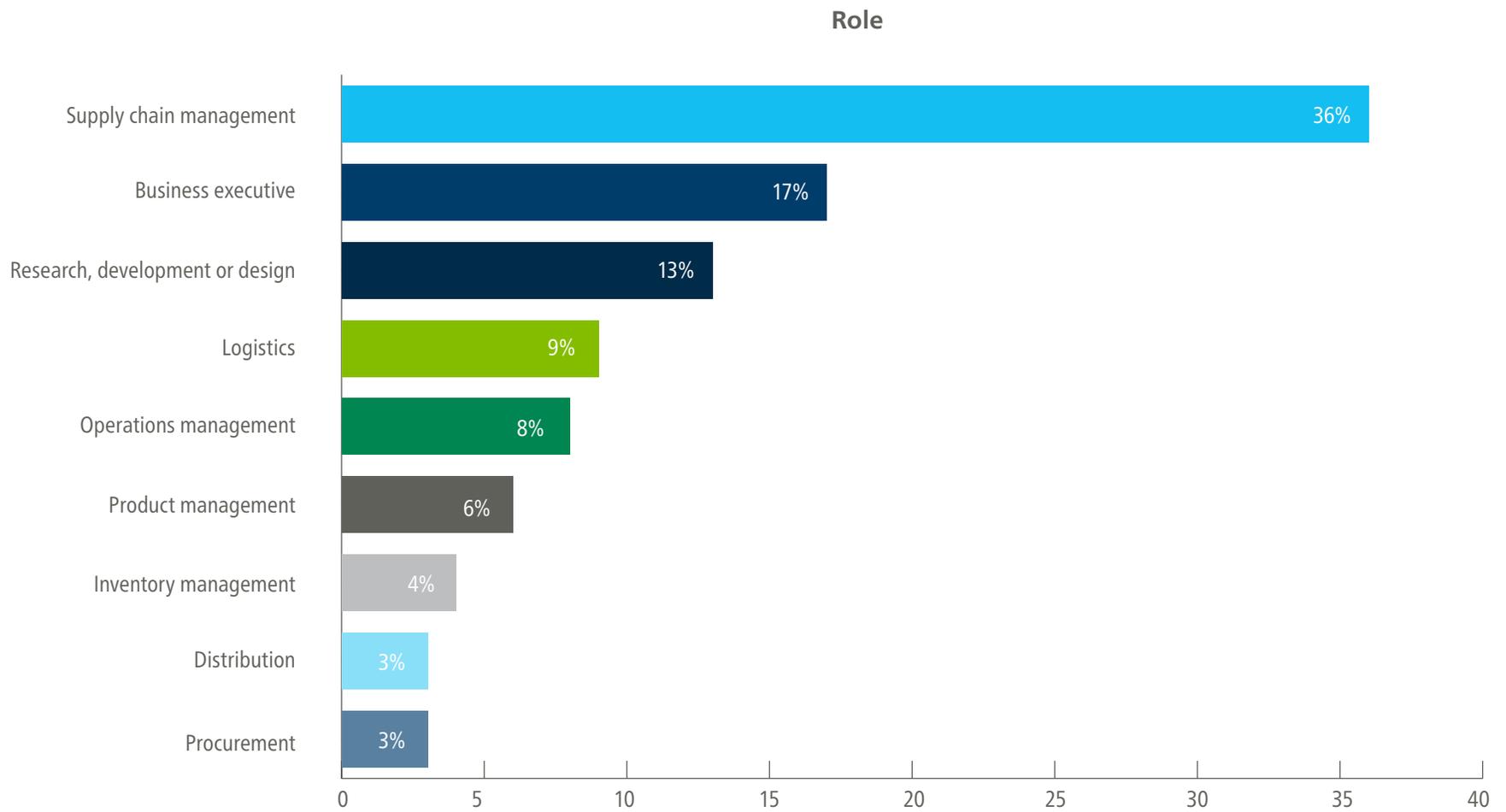


**HEALTHCARE**  
14%

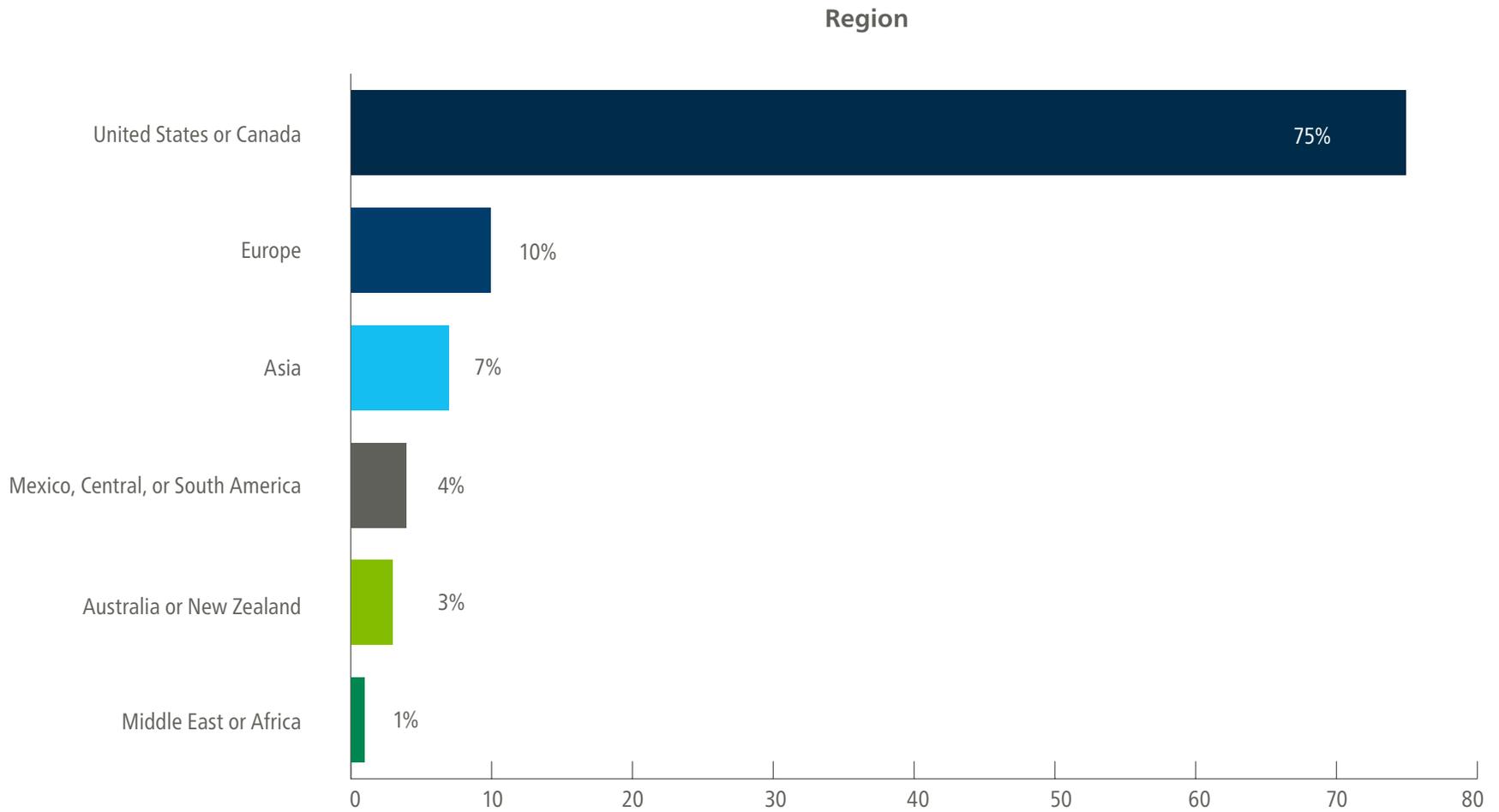


**ENERGY &  
INDUSTRIAL**  
14%

# SURVEY PARTICIPANTS



# SURVEY PARTICIPANTS



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