



Lehigh Business Supply Chain
Risk Management Index

Quarterly Report

4th Quarter / 2026



Center for Supply Chain
Research at Lehigh

COLLEGE OF BUSINESS | LEHIGH UNIVERSITY



Council of Supply Chain
Management Professionals

Educating and Connecting the World's Supply Chain Professionals.™

LEHIGH BUSINESS SUPPLY CHAIN RISK MANAGEMENT INDEX

Welcome to the **Lehigh Business Supply Chain Risk Management Index Report** developed by the Center for Supply Chain Research at Lehigh University and the Council of Supply Chain Management Professionals.

We launched this index in August of 2020 to better understand the different kinds of supply chain risks businesses face. **Supply chain professionals rated the likelihood that the risk in the 4th quarter of 2026 compared to the risk in the 3rd quarter of 2026 would likely increase, remain the same, or decrease for 10 different supply chain categories.**

The Lehigh Business Supply Chain Risk Management Index (LRMI) value is a number between 0 – 100, where greater than 50 suggests increased risk, equal to 50 suggests the same risk, and less than 50 suggests decreased risk. **The average LRMI for the 4th quarter is 68.99, which is a slight decrease from the 3rd quarter, suggesting that the level of risk in the 4th quarter of 2026 remains elevated but has eased modestly.**

The table below reflects the 10 categories of risk from highest risk to lowest risk when evaluated independently as perceived by supply chain professionals.

If you would like to have additional information about the survey or to participate in the survey, please contact Dr. Zach G. Zacharia at zacharia@lehigh.edu.



Executive Summary

The LRMI Risk Report for the fourth quarter of 2026 shows a slight decrease from last quarter's sharp jump, with the average risk index slipping from 69.34 to 68.99. Transportation Disruption Risk remained the highest-rated category at 79.84, down from its record 87.50 in the third quarter but still well above its three-year average of 69.00. Respondents pointed to the unresolved conflict with Iran, continued fuel price volatility, driver shortages tied to tighter federal enforcement, and fourth-quarter peak-season capacity constraints and surcharges. Economic Risk followed closely at 79.66, down from 83.97, with respondents citing energy costs, persistent inflation, a high cost of capital, and labor shortages. Cybersecurity and Data Risk edged up to 76.23, with respondents citing AI-enabled attacks outpacing defensive measures, state actors, seasonal phishing, and third-party vendor exposure during the holiday period. Government Intervention Risk eased slightly to 75.42 but remained a leading concern, driven by tariff unpredictability, landed costs that shift with each policy change, and uncertainty over the outcome of the mid-term elections. In the head-to-head comparison, in which respondents rank all ten risks against one another, Government Intervention Risk was the clear top concern. Economic Risk ranked second, Transportation Disruption Risk ranked third, and Cybersecurity and Data Risk ranked fourth.

The gap between the two views is the story of this quarter. Transportation and economic pressures are the risks most likely to worsen in the next three months, but when forced to choose, supply chain professionals see government intervention as the risk that matters most, because tariff and policy uncertainty sits upstream of their sourcing, pricing, and transportation decisions and is the hardest to plan around.

Risk Type	3rd Quarter 2026 Risk Index	4th Quarter 2026 Risk Index	Trend
Transportation Disruption Risk	87.50	79.84	▼
Economic Risk	83.97	79.66	▼
Cybersecurity and Data Risk	75.95	76.23	▲
Government Intervention Risk	76.92	75.42	▼
Supplier Risk	72.15	68.85	▼
Technological or Competitive Risk	68.99	65.57	▼
Customer Risk	65.82	65.57	▼
Operational Risk	55.00	62.10	▲
Environmental Risk	57.69	61.02	▲
Quality Risk	49.38	55.65	▲
Average Risk Index	69.34	68.99	▼

The Risk Index is a number between 0 – 100.

The further the number is from 50 the greater the level of risk.

The arrow indicates whether the risk is increasing or decreasing in comparison to the previous quarter.

Did You Know?

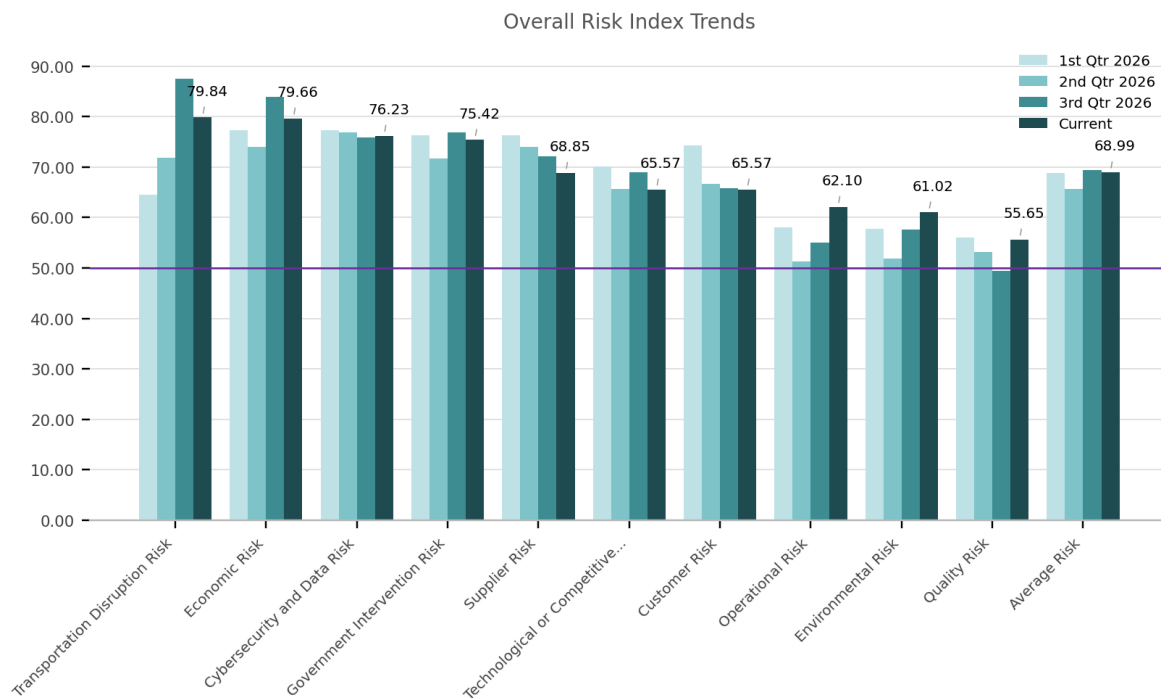
The Lehigh Business
Supply Chain Risk
Management Index for the
4th Quarter in 2026 is

68.99



LRMI Risk Index Over the Last Year

One of the advantages of regularly examining supply chain risk is to consider how these risks change over time. The chart below shows the changing levels of risk across the 10 different areas of the supply chain this last year. It is also insightful to see that some areas of the supply chain are consistently seen as high risk and other areas of the supply chain are seen as lower risk over the same one-year time period.



Four Biggest Risks in Head-to-Head Comparison 4th Quarter 2026

(Respondents are asked to compare across all 10 risks simultaneously, instead of rating one risk at a time.)

1. Government Intervention Risk
2. Economic Risk
3. Transportation Disruption Risk
4. Cybersecurity and Data Risk

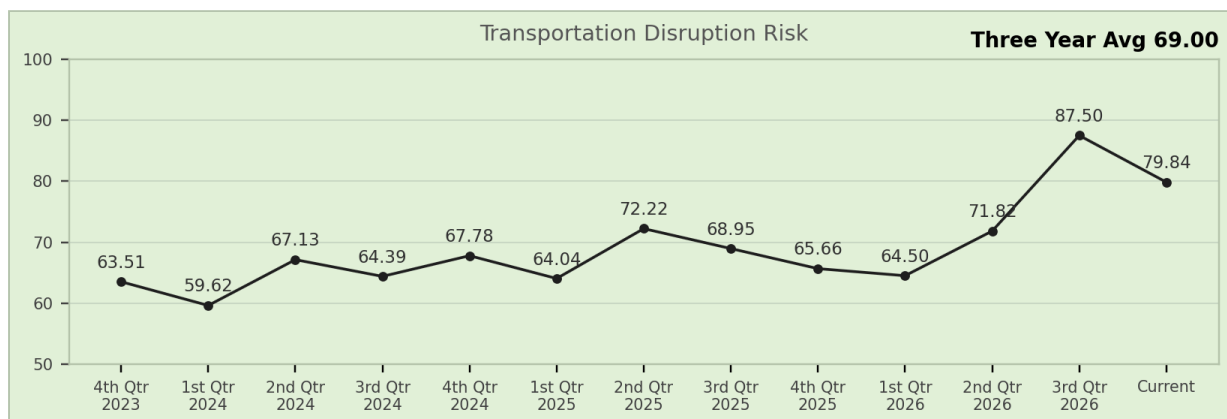
01 Transportation Disruption Risk



Some examples are: fuel prices, driver shortage, infrastructure and demand volatility.

Selected Comments:

- Q4 capacity constraints, seasonal freight surcharges, and weather-related delays significantly elevate transit risks.
- Steamship lines are pulling capacity, there is terrorism at the Suez gateway, drought at the Panama Canal, and tariff exposure is causing shippers to bunch shipments to game inbound timing.
- I chose the risk to remain the same; however, with the world stage, the impact on fuel prices could change this dramatically on any given day. The impact of federal driver regulations may also affect the movement of freight and thereby freight costs. Neither of these appears predictable.
- Truckload capacity is tightening as the government cracks down on illegal drivers and related sham companies. LTL is very stable.
- The likelihood of additional transport disruption due to the removal of tax-discounting measures that alleviated fuel shortages and price increases experienced in Q2 2026 may give rise to renewed protests.
- The end of the U.S./Iran Deal MOU without any progress adds to transportation risk through volatile and higher oil, natural gas, and logistics costs.
- There is a spillover effect on volumes shifting away from the Strait of Hormuz.
- Fuel prices and driver availability are going to remain long-term trends and very unpredictable.
- Fuel remains volatile, but we have planned for that.

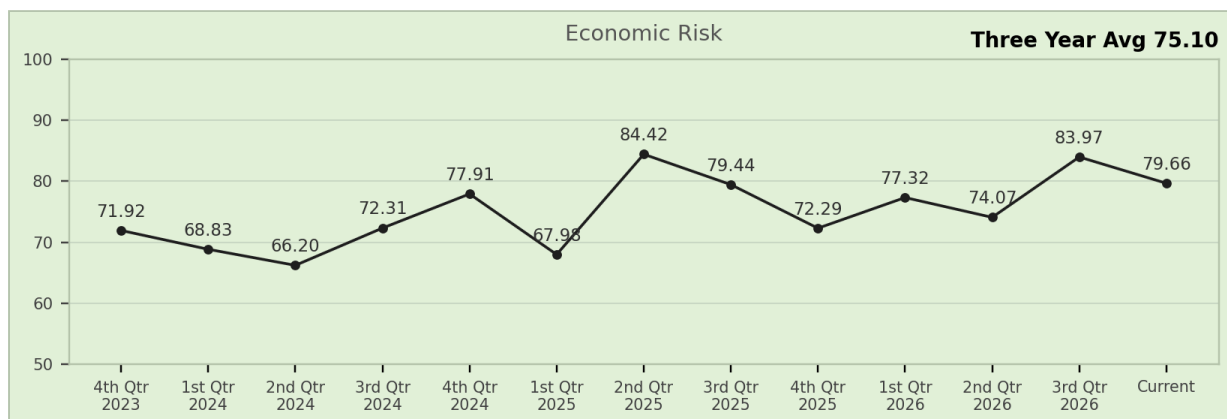


02 Economic Risk

Some examples are: increasing energy costs, commodity price volatility, labor shortages, sudden demand shocks, global energy shortages and border delays.

Selected Comments:

- Rising energy costs are likely to continue into the next quarter and may spike even higher as we enter the winter season across North America and Europe.
- Expect increasing energy-related costs. We may have some labor shortages due to the ending of Temporary Protected Status (TPS) for several groups.
- Further increases are very possible with no end in sight for the war with Iran, high inflation, etc.
- Energy and metal costs will continue to increase.
- Stagflation concerns.
- Inflation and the cost of capital are not going away as challenges.
- Labor shortages will get worse as long as the present unemployment system is in place.
- U.S. debt is out of control and needs to be reined in and gradually eliminated.
- I expect the Iran conflict to wind down and that we will have a much clearer and cleaner situation with petroleum availability globally for suppliers and for transport.



03

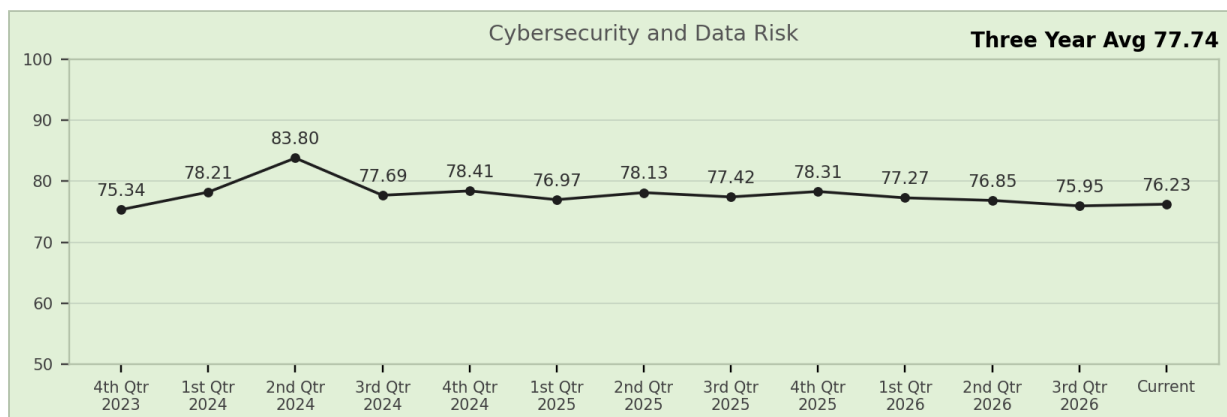
Cybersecurity and Data Risk



Some examples are: cyberattacks, data corruption, data theft, system viruses, hardware and software issues and security platform controls.

Selected Comments:

- The ability of the attackers and the attack surface continue to grow at a faster rate than the defensive measures.
- Increased digital transactions, seasonal phishing campaigns, and third-party vendor integrations during Q4 will heighten cyber threat exposure.
- I saw a report that my company had over 124 attack attempts last week. It seems like this is a headache that will never go away.
- The cyber criminals are getting more advanced in their approach and talent to attack. There is still a big threat from AI; not only are the bad guys using it to improve, but occasionally AI gets into the action itself.
- Public school districts are considered targets because student data is of interest for identity theft.
- Global unrest is likely to create an uptick in cyberattacks across industries.
- The unknown regarding the new GPTs (General-Purpose Technologies) is creating significant uncertainty.
- State actors are increasing risks.
- Cyber and related cognitive warfare are front and center.



04

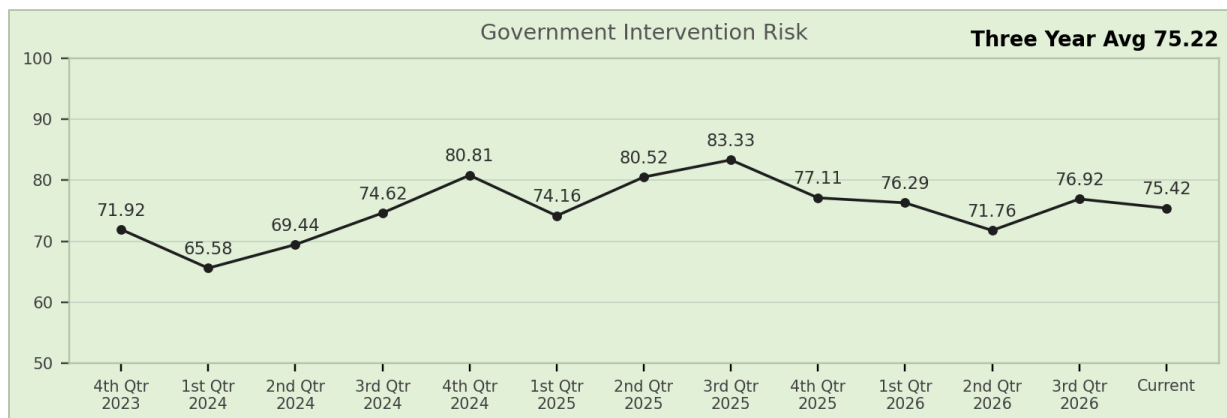
Government Intervention Risk



Some examples are: new regulations, tariffs/trade wars and governmental restrictions on source material, methodologies or technologies.

Selected Comments:

- Geopolitical trade tensions, ongoing tariff uncertainties, and evolving environmental regulations maintain a persistent compliance burden.
- It is the uncertainty and the illogical nature of tariffs.
- Tariffs may be re-engaged at any time and severely impact the landed costs of supplies.
- The ongoing tariff saga is hurting business. Margins have taken a significant hit.
- We must plan for the impact of the mid-term election on U.S. government political party control.
- Less regulation overall, but tariffs and international conflicts are causing governmental supply uncertainties.
- Overall, I think it will remain the same. However, there will be areas where more regulation comes into play and other areas where regulation will decrease.
- The recent shift toward more populist policies has led the government to relax regulations to help domestic industry remain competitive.
- Larger dysfunctions are being felt in U.S. government regulatory entities, mainly the Department of Health and Human Services (HHS) and the Food and Drug Administration (FDA).
- AI regulation is an unknown.



05

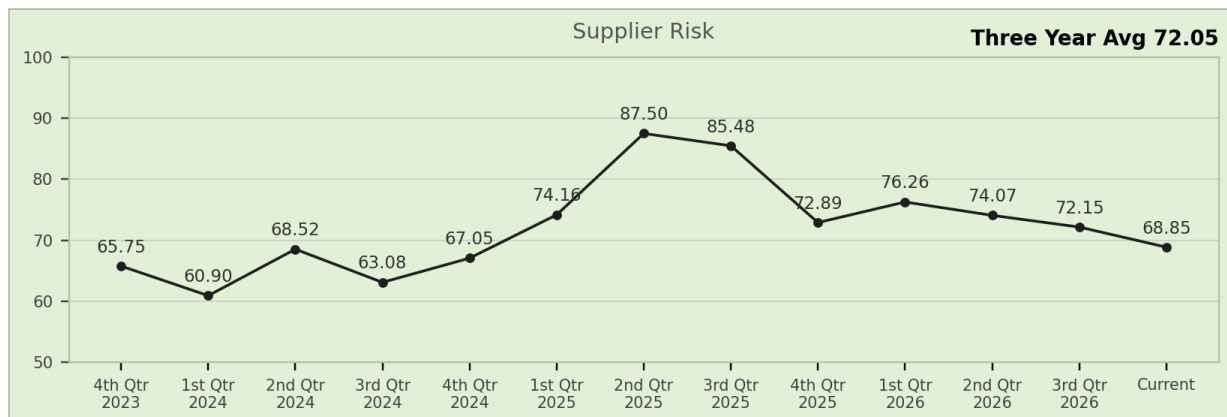
Supplier Risk



Some examples are: single/sole source supplier, suppliers from one geographic location, supplier quality issues and price volatility.

Selected Comments:

- Beyond global material and supply changes, there continues to be a generational ownership transition. Owners are well into retirement age and selling out to competitors, private equity, overseas buyers, etc., and they are changing their business model going forward. Fewer are transitioning to an employee stock ownership plan (ESOP) or to family members who run the business as usual.
- Raw material price volatility and upstream capacity crunches create delivery schedule inconsistencies during peak quarter demand.
- The supply base is going through significant changes in ownership and struggling with labor retention.
- Disruptions in the Gulf may make access to materials more difficult.
- Risks are increasing for Eastern European, Indian, and Asian suppliers.
- Price volatility due to increased costs of raw materials and fuel costs for our vendors.
- Tariffs will still be a hangover as firms adjust supply chains.
- Supplier risk is already high and we expect it to remain so.
- We have a strong internal focus on our global supply chain risk mitigation.



06

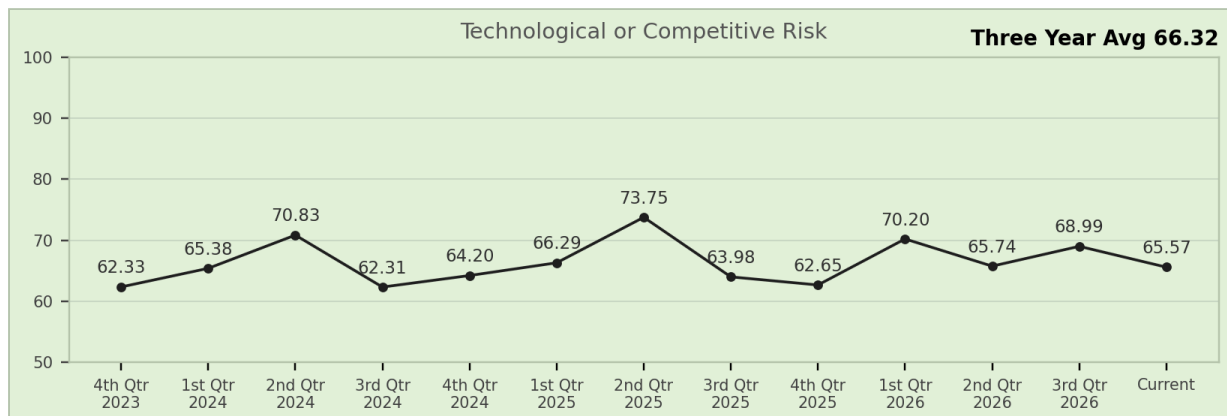
Technological or Competitive Risk



Some examples are: disruptive or replacement technologies, introduction of new competitor firms and ineffective or non-existent regulation for competitors.

Selected Comments:

- Competitive pressure remains steady, though rapid AI and automation adoption across the industry requires ongoing technology alignment.
- AI will continue driving technological and competitive risk, accelerating more new entrants and potential competitors.
- The burden of cost from technology is ever increasing while returns are diminishing, and it is taking staff increases to manage the increased technology (data overload).
- Unclear if AI will make real changes in our industry.
- AI could help or hurt competitive risk.
- Several new market entrants.
- The role played by new general-purpose technologies creates significant uncertainty.
- AI continues to shape the new landscape.



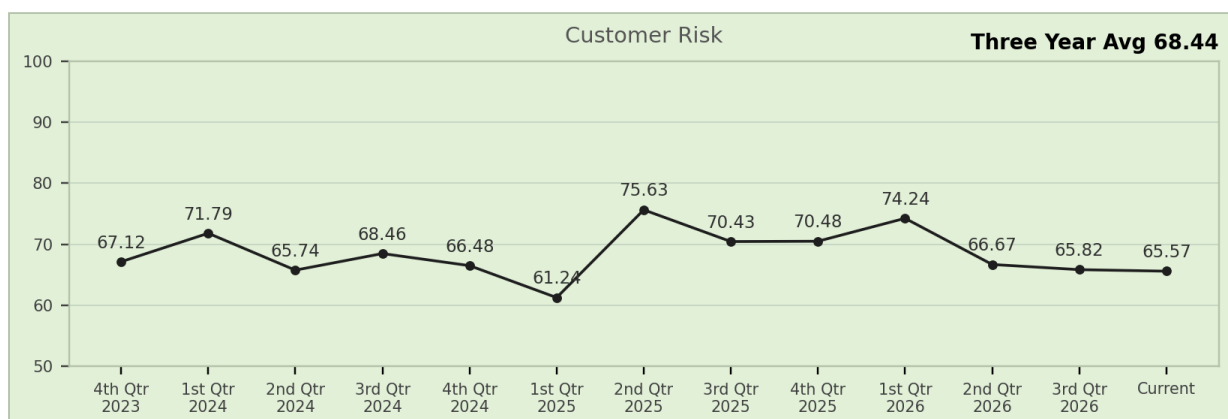
07 Customer Risk



Some examples are: fast changing customer demand, easy to lose customer loyalty, changing customer base demographics, hard to predict customer behavior and hard to service customers.

Selected Comments:

- There is margin pressure for customers, which I refer to as a "friskiness" to try more private label or require margin support. They are under pressure because household budgets are stretched and consumption is delayed or decreased, and they are paying tariffs on their store brands.
- Heightened demand volatility, tighter fulfillment expectations, and brand sensitivity to lead times increase customer churn risk.
- Uncertainty and delayed decisions remain an overriding trend with both consumers and corporate customers.
- Affordability is affecting an ever-increasing number of consumers, and consumer debt continues to grow.
- The financial squeeze on consumers directly impacts their budgetary spend.
- We have taken price increases on some of our legacy brands and are waiting to see how the market reacts.
- Inflation and other economic stress have customers focused on price.
- A further increase in worried consumers is expected come Christmas time.
- When will the consumer stop buying is the big question.



08

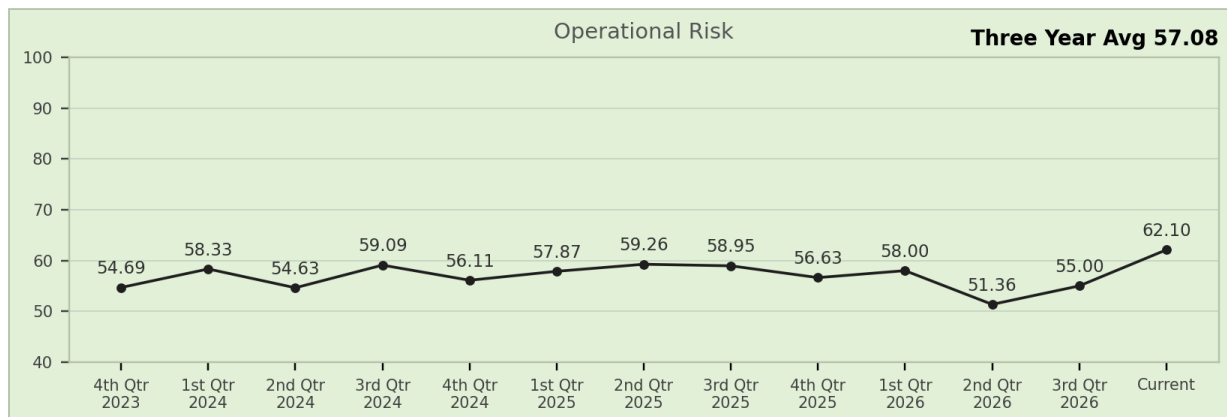
Operational Risk



Some examples are: site disasters, product counterfeiting, damage or disruption to physical assets and machine breakdown.

Selected Comments:

- Q4 operational risks are expected to increase, driven by peak seasonal order volumes, tighter delivery windows, and heightened strain on material handling equipment and site maintenance schedules.
- Continued U.S. truck driver shortages will place more stress on available trucking assets.
- The current heat wave we are experiencing in Houston is straining mechanical (HVAC) systems and disrupting operations. We are expecting relief in the 4th quarter.
- Machine reliability during a planned shutdown to replace other equipment is adding risk to our business.
- Workforce worries, with turnover as employees search for higher salaries.
- Site building work should be completed, but fitting out with equipment could pose additional risks.
- Adoption of AI is both a risk and an opportunity.
- Staffing, equipment, and repair parts are things discussed regularly.
- Risk is unchanged. The companies we work with feel their current business models are working well.



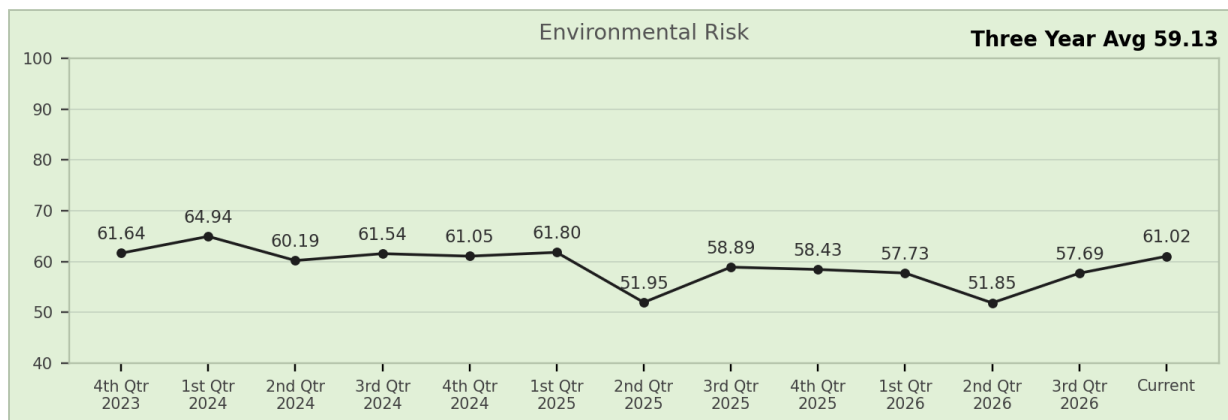
09 Environmental Risk



Some examples are: natural disasters, extreme weather, industrial accidents and pandemics.

Selected Comments:

- Global warming continues to drive volatile weather, and the U.S. is eliminating or gutting funding for government organizations tasked with protecting the environment.
- Heat waves and an impending Super El Nino.
- Extreme weather situations appear to be increasing.
- We are entering peak hurricane season; so far so good.
- If the summer was bad, the winter will be bad also.
- We are being told to brace for El Nino rains here.



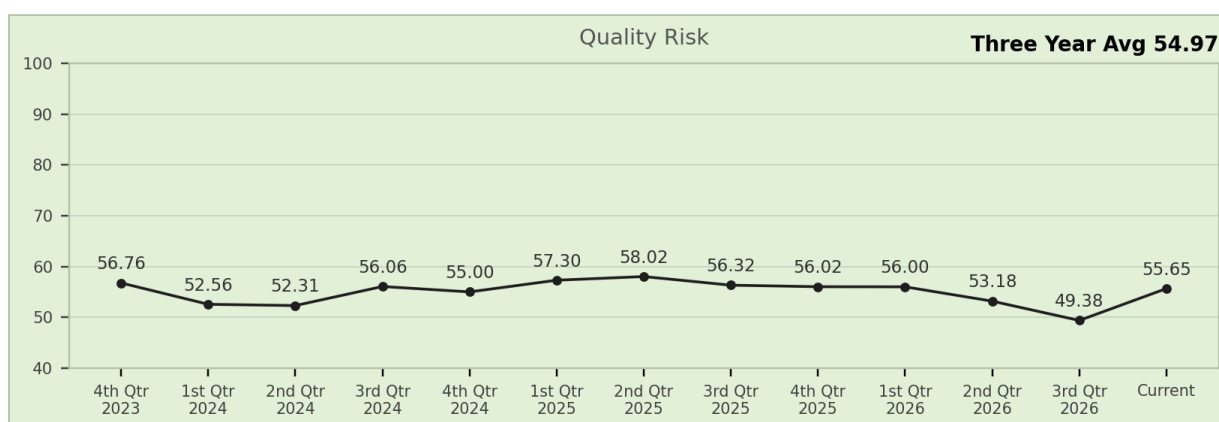
10 Quality Risk



Some examples are: lack of sufficient quality testing, changing quality standards, informal quality control documentation, customer safety issues and product recalls.

Selected Comments:

- With the Food Safety Modernization Act Section 204 (FSMA 204) food traceability rule, mandatory product ingredient elimination, and other regulatory requirements coming into place, there will be an increased attention to detail required in the foreseeable future.
- The turnover of experienced resources, the disruption of processes through a rush for digital transformation and AI, combined with supply chain changes, results in more opportunities for misses in quality.
- High production speeds and peak throughput in Q4 heighten the risk of process deviations and outgoing defects.
- Difficulty in recruiting sufficiently qualified personnel is complicating our quality initiatives.
- Supply chain disruptions or delays are forcing us to make new supplier decisions.
- Ethanol operations changes are impacting the CO2 waste gas that is used as feedstock. We are seeing an increasing frequency of feedstock purity issues.
- We are transitioning to natural colors and flavors.
- The pace of technology changes will stress process control.
- Some clients are actually angling for less quality.
- This grading is based on our internal focus on quality and quality-related issues.



Appendix A

Risk Index Summary

The Risk Index is a number between 0 – 100.

Risk Index ≤ 49 suggests less risk

Risk Index = 50 indicates no change in risk

Risk Index ≥ 51 suggests greater risk

The further the number is from 50 the greater the level of risk.

$$\text{LRMI} = (P1 * 1) + (P2 * 0.5) + (P3 * 0)$$

P1 = percentage of answers reporting an increase in risk

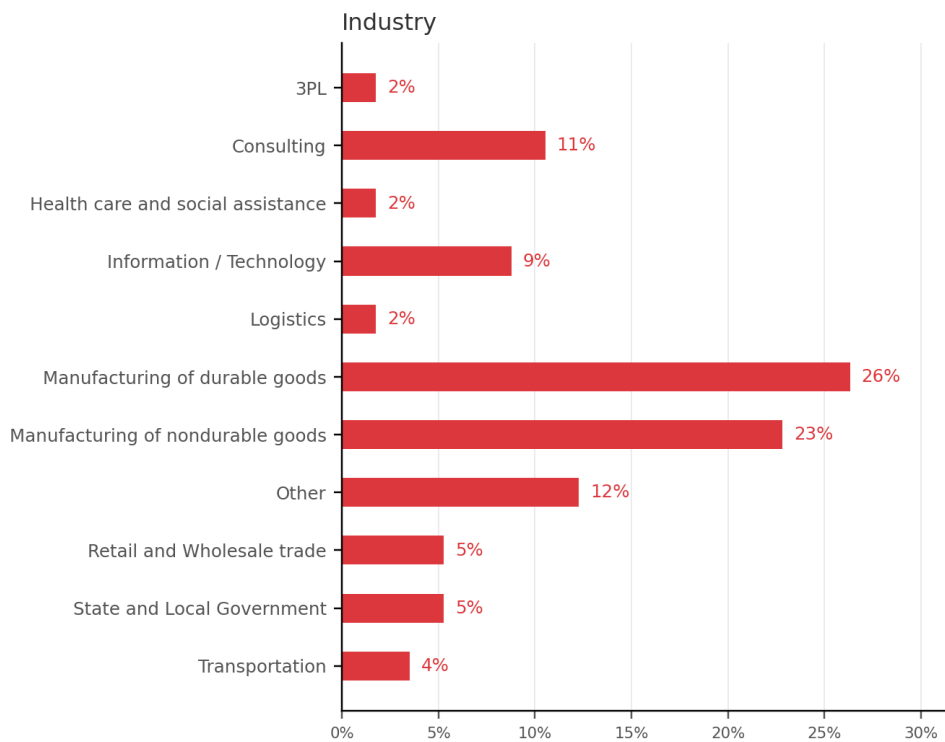
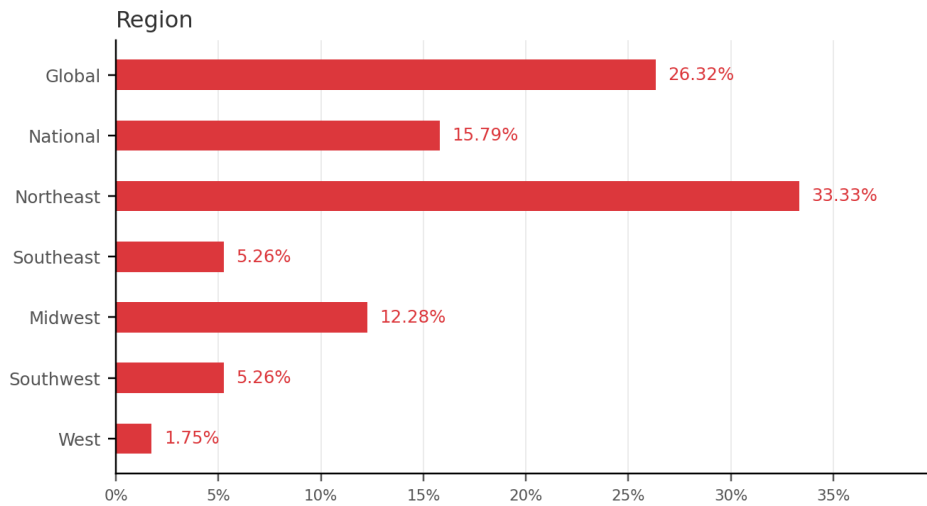
P2 = percentage of answers reporting no change

P3 = percentage of answers reporting a decrease in risk



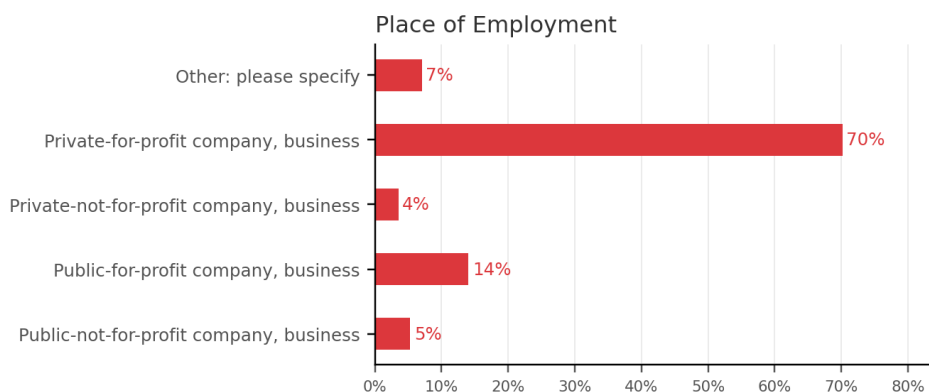
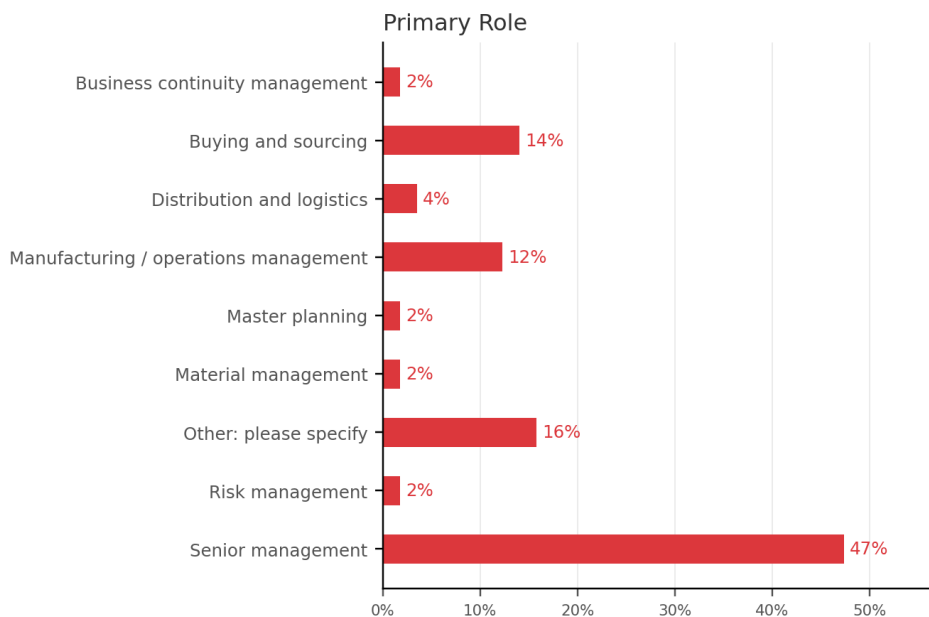
Appendix B

Survey Demographics



Appendix B

Demographics (continued)



Appendix B

Demographics (continued)

