

Quarterly Report

4th Quarter 2026

European Supply Chain Risk Indicator (ESCRI)

Veit Kohnhauser, Logistikum, UAS Upper Austria

No Light at the End of the Tunnel: ESCRI Rises from 70.00 to 72.28 as Transport, Trade Policy and Cyber Risks Escalate Again



The European Supply Chain Risk Indicator (ESCRI) for Q4 2026 signals a renewed increase in perceived risk, with the average Risk Index rising from 70.00 to 72.28 (+2.28 points). The de-escalation anticipated by SCM experts in Q3 has not materialised; eight of ten categories show rising values.

Three core messages define the outlook. First, Transportation Disruption Risk surges to 85.24 (+9.56) and becomes the most pressing concern. Continuously rising fuel prices, conflict-related shipping blockades, critical driver shortages, port strikes and overloaded EMEA networks outweigh any relief expected last quarter. Economic Risk (84.13) remains close behind, driven by uncompetitive labour costs and energy costs with no reversal in sight.

Second, geopolitical and regulatory uncertainty returns. Government Intervention Risk rises strongly (+4.22) as US tariffs, unpredictable Russia sanctions and concerns over winter gas supply replace the optimism around new trade agreements. Operational Risk (+5.98) ends its plateau, pressured by new EU tachograph rules, German rail renovation and postponed maintenance investments.

Third, Cybersecurity and Data Risk continues its sharp ascent (+3.97), as AI-supported attacks and sophisticated social engineering outweigh growing mitigation efforts. Supplier Risk stabilises at a high level, while Technological or Competitive Risk and Quality Risk decline moderately.

Given this outlook, SCM leaders should prepare for a volatile winter quarter. Priority actions include securing transport capacity and hedging fuel exposure, monitoring supplier liquidity and tariff developments, and reinforcing cybersecurity awareness and governance against AI-enabled threats.

Veit Kohnhauser

Professor Logistics & Supply Chain Management
Logistikum, UAS Upper Austria

TOP 4 – Supply Chain Risks

Our SCM-Experts across Europe compared ten different risks to see which ones are the most serious right now. They didn't worry about the past; they just ranked them by importance for the future. This results in the four biggest Supply Chain challenges we are facing for the next months.

1. **Economic Risk**
2. **Transportation Disruption Risk**
3. **Cyber-security and Data Risk**
4. **Supplier Risk**

ESCRI – Supply Chain Risk Development

The ESCRI Indicator does not show an absolute level of risk but rather the perceived change in risk. The Risk Indicator shows, on a scale of 0 to 100, whether overall risks are decreasing, remaining the same, or increasing. A value below 49 indicates decreasing risk, 50 represents no change, and values above 51 indicate increasing risk. The further the value is from 50, the greater the perceived change in risk.

Rank.	Risk Type	Risk Index	Trend
01	Transportation Disruption Risk	85,24	↑↑
02	Economic Risk	84,13	↑
03	Supplier Risk	77,62	~
04	Cybersecurity and Data Risk	77,62	↑↑
05	Government Intervention Risk	73,81	↑↑
06	Customer & Demand Risk	71,90	~
07	Technological or Competitive Risk	66,19	↓
08	Operational Risk	64,76	↑↑
09	Environmental Risk	63,94	~
10	Quality Risk	57,62	↓
Average Risk Index		72,28	↑

01 Transportation Disruption Risk

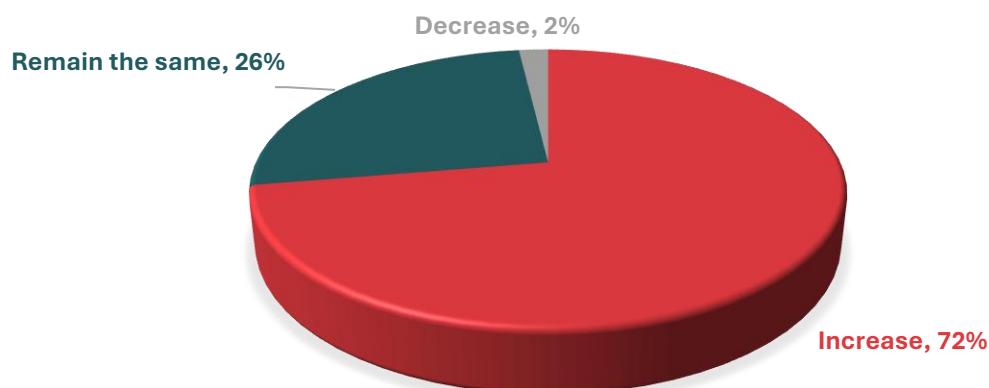
85.24

very sharp increase

Transportation Disruption Risk rises strongly in Q4 2026, from 75.68 to 85.24 (+9.56 points). In Q3, SCM experts expected moderation as tensions around Iran and the Strait of Hormuz were anticipated to ease, while driver shortages, rail maintenance and container shortages persisted as structural weaknesses. This expectation has not materialised. Respondents now identify fuel and energy prices as the dominant driver: continuously rising fuel costs, increasing diesel floaters and unbudgeted surcharges are perceived as exceeding what even functioning supply chains can absorb.

Maritime transport is associated with conflict-related blockades and risk premiums, with intercontinental flows, including Africa–Europe and Asia, facing long lead times. Structural constraints identified in Q3 intensify rather than ease: critical driver shortages, insufficient road and multimodal capacity, overloaded EMEA networks and poor Deutsche Bahn reliability. New factors emerge, such as port strikes, border blockades and container shortfalls ahead of Chinese New Year. Decarbonisation targets and carbon pricing add cost pressure. Overall, experts no longer perceive an acute shock that is fading, but a security-policy environment in which supply chain breakdown is considered a question of timing rather than probability.

TRANSPORTATION DISRUPTION RISK, 85.24



02 Economic Risk

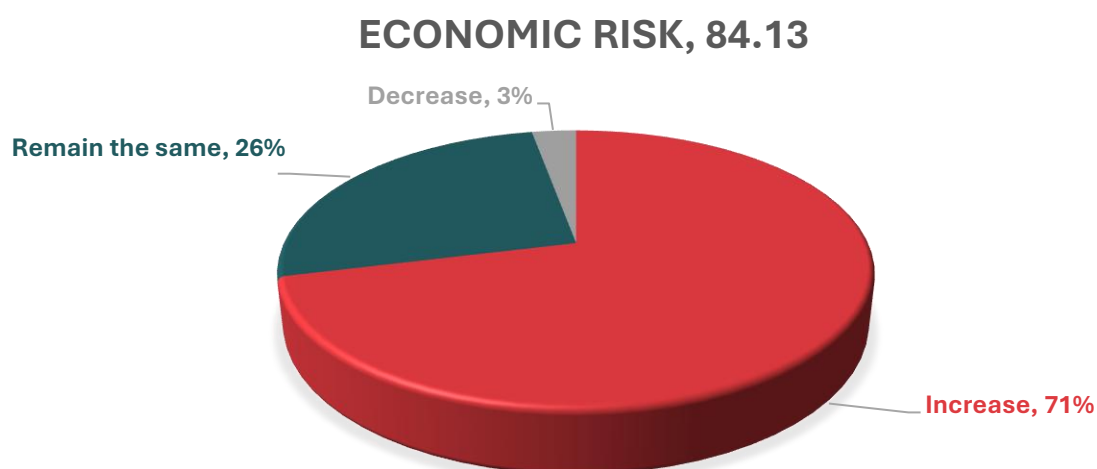
84.13

very sharp increase

Economic Risk increases moderately in Q4 2026, from 82.43 to 84.13 (+1.70 points), now ranking second behind Transportation Disruption Risk. In Q3, SCM experts attributed the elevated level to compounding pressures: energy costs linked to labour costs, sharpened geopolitical instability around Israel and Iran, structural freight surcharges and commodity price volatility. In Q4, energy remains the central driver, yet its character shifts from expectation to certainty: respondents regard further increases as given and see no reversal of the trend, citing natural gas.

Geopolitical references, prominent in Q3, no longer appear; instead, labour becomes a second pillar. Experts point to globally uncompetitive personnel costs, a shortage of skilled workers and staff reductions, which together heighten economic exposure.

New factors include rising imports of finished goods from China, adding competitive pressure. Supply chain planning is increasingly impaired by energy costs, limited driver and vehicle availability, and a highly volatile demand environment, while commodity price volatility persists. The moderate rather than sharp increase reflects an already elevated baseline: respondents note that volatility is already very high and do not expect conditions to deteriorate much further.



03 Supplier Risk

77.62

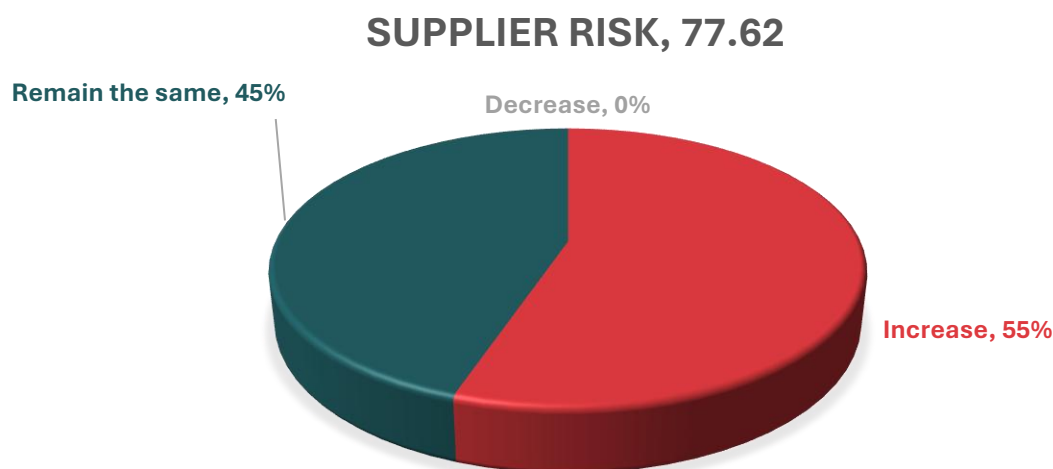
sharp increase

Supplier Risk increases only weakly in Q4 2026, from 77.03 to 77.62 (+0.59 points), stabilising at a high level. In Q3, SCM experts attributed the sharp rise to deteriorating supplier creditworthiness, uncertainty over the Middle East conflict, memory component shortages, CBAM obligations and high energy dependence.

In Q4, financial fragility remains central but becomes more concrete: respondents expect a tense economic situation to trigger insolvencies among carriers, logistics providers and component suppliers, as well as closures and mergers that increase market concentration.

Rising energy, transport and material costs can only be passed on partially or with delay, straining supplier liquidity. EU regulation gains weight compared with Q3: bureaucracy, slow processes and regulatory overhead weaken SME competitiveness against the Far East, while Far East suppliers overwhelmed by requirements such as PPWR withdraw, driving up prices.

Electronics constraints persist, with longer lead times and further price increases for silicon chips. Geopolitical shocks still add currency risk, and Balkan border congestion, quality issues and single-infrastructure dependence in rail emerge. The weak change reflects that respondents consider risk high but see no further escalation.



04 Cybersecurity and Data Risk

77.62

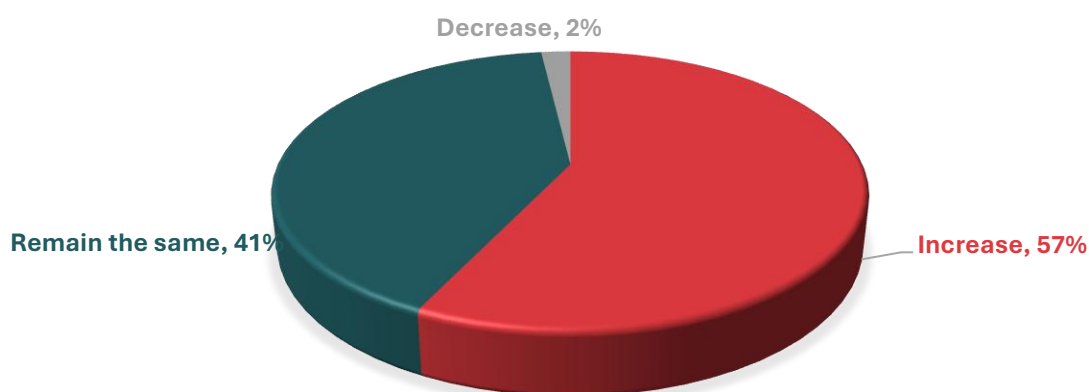
sharp increase

Cybersecurity and Data Risk increases strongly in Q4 2026, from 73.65 to 77.62 (+3.97 points). In Q3, SCM experts attributed the sharp rise to AI adoption expanding attack surfaces and lowering entry barriers, growing digitalisation, and fragmented, paused organisational responses that slowed the implementation of security measures.

In Q4, the AI-driven threat logic persists: respondents link rising exposure to the spread of AI-supported systems and increasing dependence on IT infrastructure. Attacks are described as continuously rising, more frequent and ever more complex and sophisticated, leading some to conclude that risk can only increase. Attack vectors become more tangible, ranging from cyber-induced system instability, such as non-functioning charging stations, to multi-stage social engineering, in which mass mailings, impersonation of internal IT staff via collaboration tools and remote access granted by employees enable intrusion.

Unlike Q3, organisational responses appear to be gaining momentum: reinforced security systems and intensive, ongoing staff training are cited as mitigating factors. However, experts note that threats and countermeasures increase in parallel, while others see the risk unchanged at a high level. Overall, threat dynamics outweigh mitigation.

CYBERSECURITY AND DATA RISK, 77.62



05 Government Intervention Risk

73.81

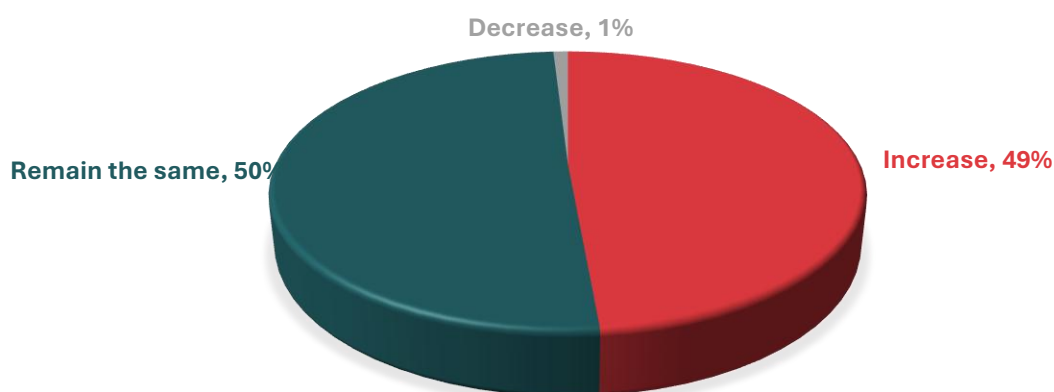
sharp increase

Government Intervention Risk increases strongly in Q4 2026, from 69.59 to 73.81 (+4.22 points). In Q3, SCM experts expected a decline, driven by anticipated geopolitical stabilisation and new trade agreements perceived as opportunities, with cautious optimism that tariff regulations could yield positive returns.

Persistent friction from short-notice EU regulations, misaligned sustainability rules and national measures such as German emission limits appeared outweighed by these prospects. In Q4, this optimism reverses. Respondents no longer view trade policy as a benefit; instead, tariffs, notably US tariffs, are described as never advantageous for globally operating companies. Sanctions against Russia emerge as a source of uncertainty, as their development and consequences are considered unpredictable, raising concerns that gas supply may not be secure in the coming winter.

Regulatory pressure remains tangible, with the EU packaging regulation cited and respondents anticipating further regulatory responses that could force companies to alter their operational plans. One respondent expects stability, noting that the Austrian market is already heavily regulated and further state interventions are not currently visible. Overall, renewed geopolitical and trade-policy uncertainty drives the increase.

GOVERNMENT INTERVENTION RISK, 73.81



06 Customer and Demand Risk

71.90

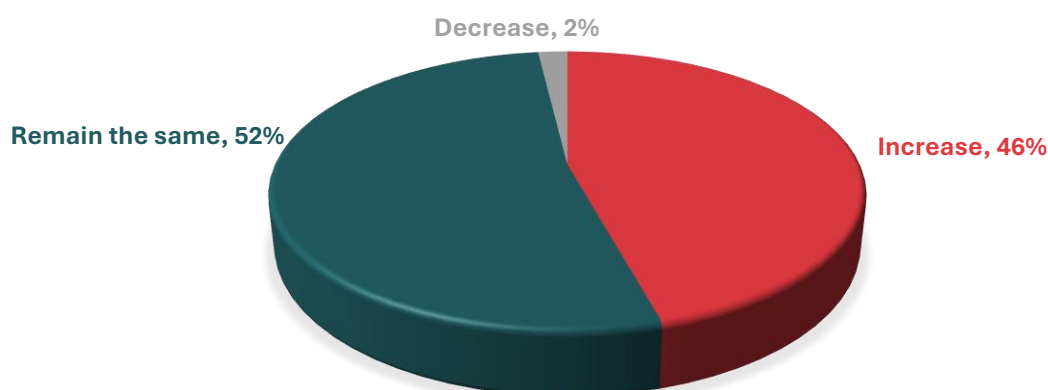
sharp increase

Customer and Demand Risk increases weakly in Q4 2026, from 70.95 to 71.90 (+0.95 points). In Q3, SCM experts expected slight easing, citing increasingly mature customer relationships, reliable delivery performance despite external disruptions, the stabilising structure of B2B markets and a consolidation of demand around trusted suppliers.

In Q4, these stabilising factors weaken. Respondents now report declining customer loyalty and find customer behaviour increasingly difficult to predict, contradicting the Q3 notion of maturity. Delivery reliability, previously a buffer, turns into a vulnerability: customers demand shorter lead times, fluctuating call-offs are expected to reduce delivery performance, and failure to deliver risks losing business.

Rail infrastructure constraints penalise customers and shift volumes to other transport modes. Structural market change adds pressure, as economic conditions and intensifying global competition cause customers to exit while new ones enter, notably in automotive, and e-commerce and marketplaces reshape demand. Consumption pressure is expected to alter purchasing patterns, while the risk of payment defaults in the EU persists from Q3. The weak change reflects countermeasures and customer retention efforts that keep this very high risk largely stable.

CUSTOMER & DEMAND RISK, 71.90



07 Technological or Competitive Risk

66.19

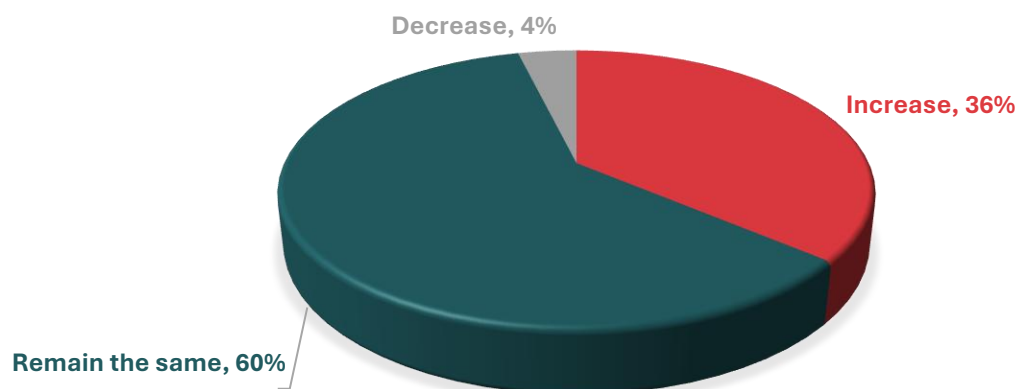
moderate increase

Technological and Competitive Risk declines moderately in Q4 2026, from 68.92 to 66.19 (–2.73 points); the index nonetheless remains above 50, signalling a continued but less pronounced increase. In Q3, SCM experts linked the rise to exponential AI progress, technology itself becoming a source of volatility, a VUCA environment, new market entrants and regulatory divergence, notably changes in Spanish law.

In Q4, AI remains at the centre of transformation: respondents cite its fast pace, easier access to AI-enabled capabilities and massive technological and personnel shifts, while uneven adoption may allow competitors to offer superior service. Competitive pressure becomes more concrete than in Q3. New, partly state-subsidised competitors from China are entering the European market, rivals are establishing production sites nearby, and companies cut prices sharply to survive displacement competition. Economic conditions cause customers to exit while new ones enter, notably in automotive.

In rail freight, the tariff model is seen as undermining competitiveness. The moderate decline does not indicate easing pressure; several respondents consider the risk already extremely high and expect it to persist at this level instead of escalating.

TECHNOLOGICAL / COMPETITIVE RISK, 66.19



08 Operational Risk

64.76

moderate increase

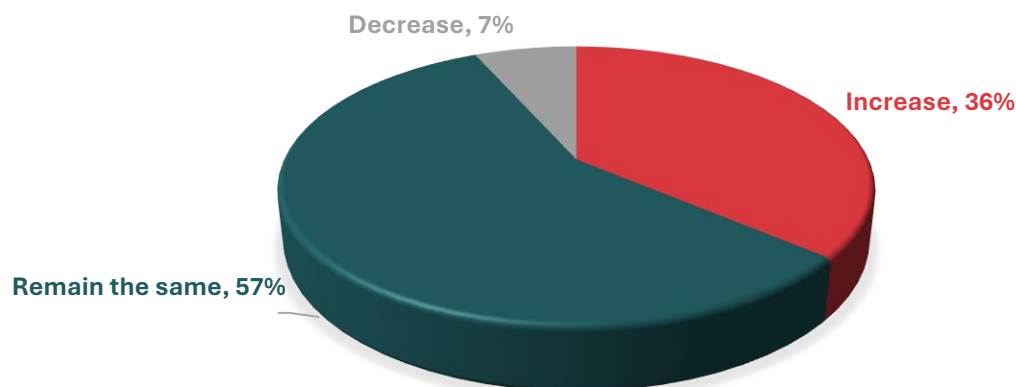
Operational Risk increases strongly in Q4 2026, from 58.78 to 64.76 (+5.98 points). In Q3, SCM experts described a slight decline reflecting a plateau after the sharp deterioration in Q2, with energy cost fluctuations, heatwaves, investment delays and ERP-related system vulnerabilities offset by disciplined operational practices.

In Q4, the plateau effect ends and new operational pressures emerge. Regulatory change becomes a direct driver: the EU requirement for second-generation digital tachographs in vehicles from 2.5 tonnes since July 2026 reduces special transport capacity, while the Schengen 90/180-day rule raises strike risk.

The ongoing renovation of the German rail network shifts volumes from rail to road. Respondents cite rising raw material, energy and fuel costs, disrupted international routes and allocation of memory and PCB components in electronics. Investment delays observed in Q3 persist, as repairs to machinery and buildings are postponed, compounded by wage dissatisfaction and challenges in relocating production footprints. Strikes, theft, road collapses and winter weather extremes are expected to increase. Geopolitics is seen as delivering mostly negative surprises.

Few respondents describe conditions as stable and controlled, citing adequate maintenance.

OPERATIONAL RISK, 64.76



09 Environmental Risk

63.94

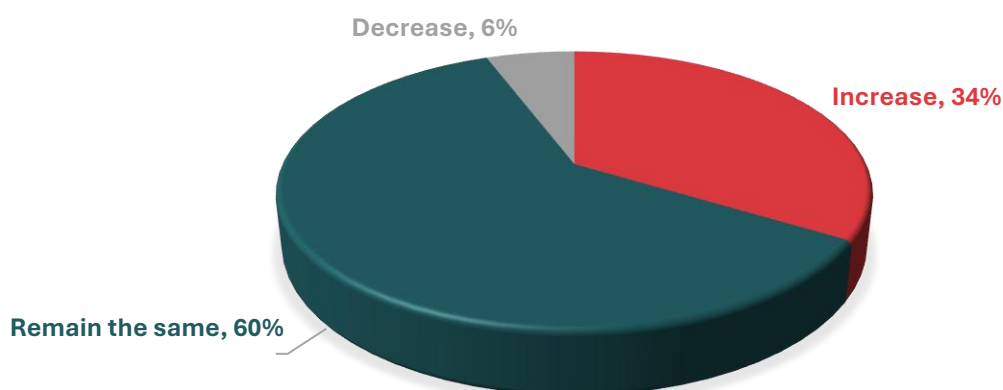
moderate increase

Environmental Risk increases weakly in Q4 2026, from 63.51 to 63.94 (+0.43 points), consolidating the Q3 level. In Q3, SCM experts attributed the rise to ongoing heatwaves across Europe, which caused service cancellations at Deutsche Bahn and damaged rail and road infrastructure, marking a shift from anticipated future risk to acute operational disruption.

In Q4, this assessment is confirmed rather than intensified. Respondents continue to perceive climatic challenges as growing and emphasise extreme weather as the central driver, but the seasonal focus shifts from summer heat to winter, when extreme events are expected to become more likely. The geographical perspective widens: experts highlight that local weather events have massive effects on global supply chains, for instance when a typhoon in Southeast Asia paralyses ports and delays or interrupts flows of goods, while spatially limited events such as black ice, heatwaves or floods disrupt tightly scheduled supply processes.

Exposure to extreme episodes comparable to those in the first quarter remains high. Respondents cite natural disasters, water scarcity and the need to triple decarbonisation efforts, underlining the structural character of environmental risk.

ENVIRONMENTAL RISK, 63.94



10 Quality Risk

57.62

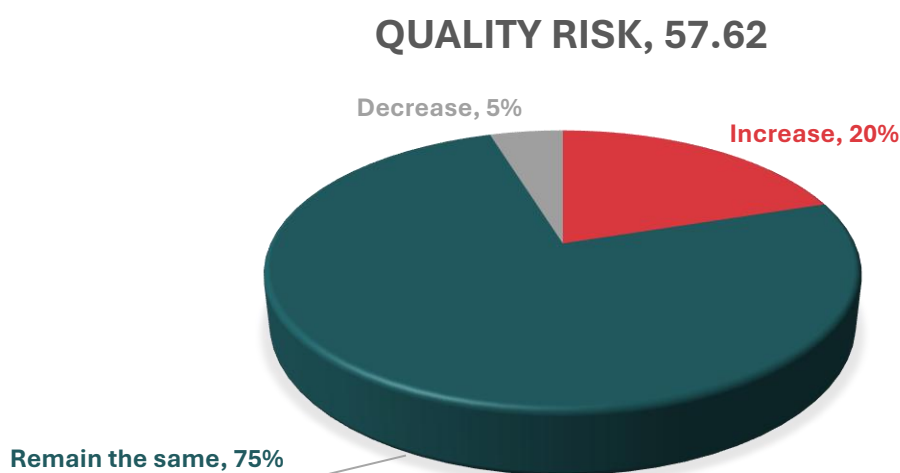
slightly increasing

Quality Risk declines moderately in Q4 2026, from 59.46 to 57.62 (–1.84 points); the index still signals a slight increase. In Q3, SCM experts linked the rise to growing regulatory complexity, gaps in quality culture, difficulties in employee training and onboarding, lean structures and suppliers cutting corners under cost pressure, while strong quality governance contained these pressures.

In Q4, the stabilising side gains weight. Respondents describe quality as currently high with no visible change in status and report continuous reviews to improve products and services. Regulatory pressure persists but becomes more specific: the upcoming EU Machinery Regulation from January 2027, the Cyber Resilience Act and a new PFAS standard are already raising user requirements.

Onboarding challenges from Q3 remain, as the integration of new employees is not yet complete. A new commercial dimension emerges: under weak economic conditions, customers increasingly use complaints to generate additional revenue, possibly linked to high inventory levels.

Respondents note that objective and subjective quality criteria evolve continuously. Overall, established quality levels and ongoing improvement efforts outweigh rising regulatory and commercial demands, explaining the moderate decline.



Appendix A: Risk Indicator 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 greater the level of risk

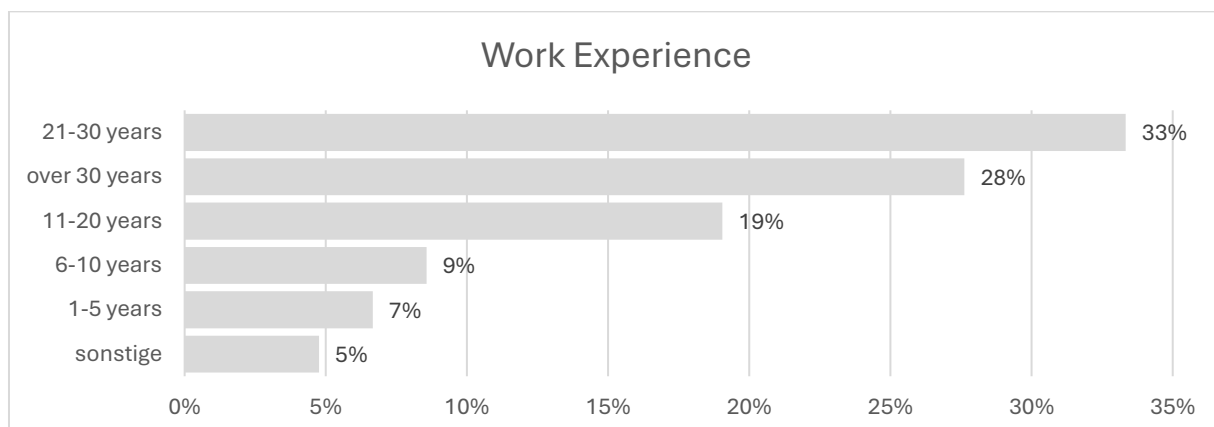
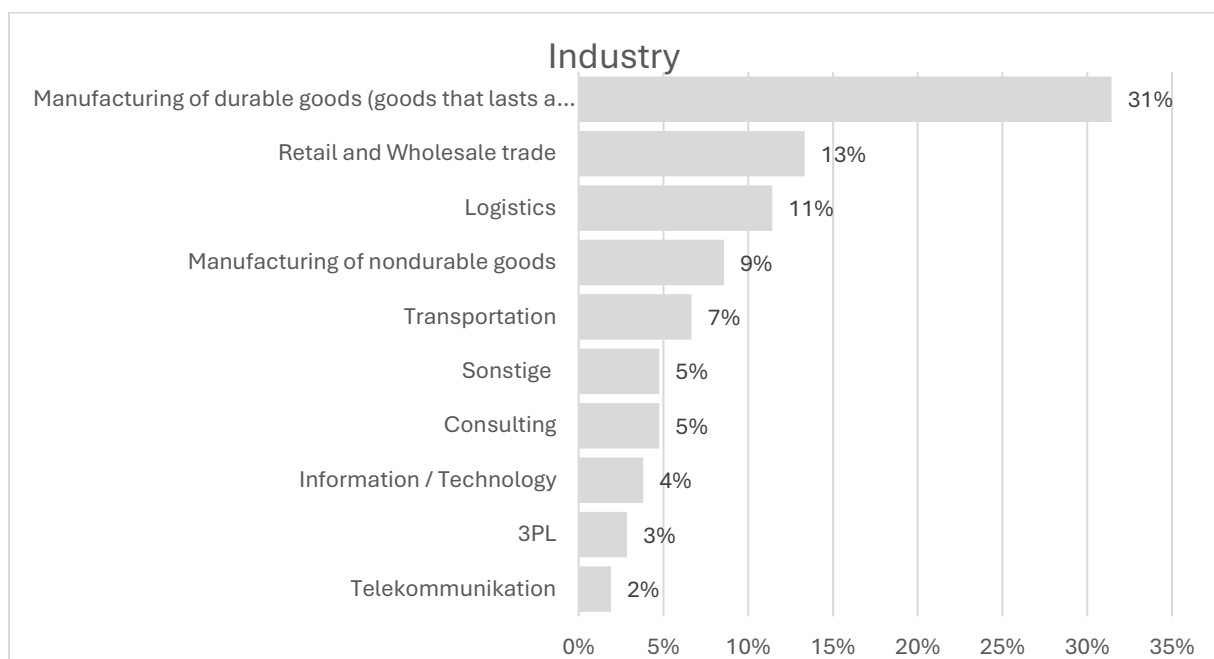
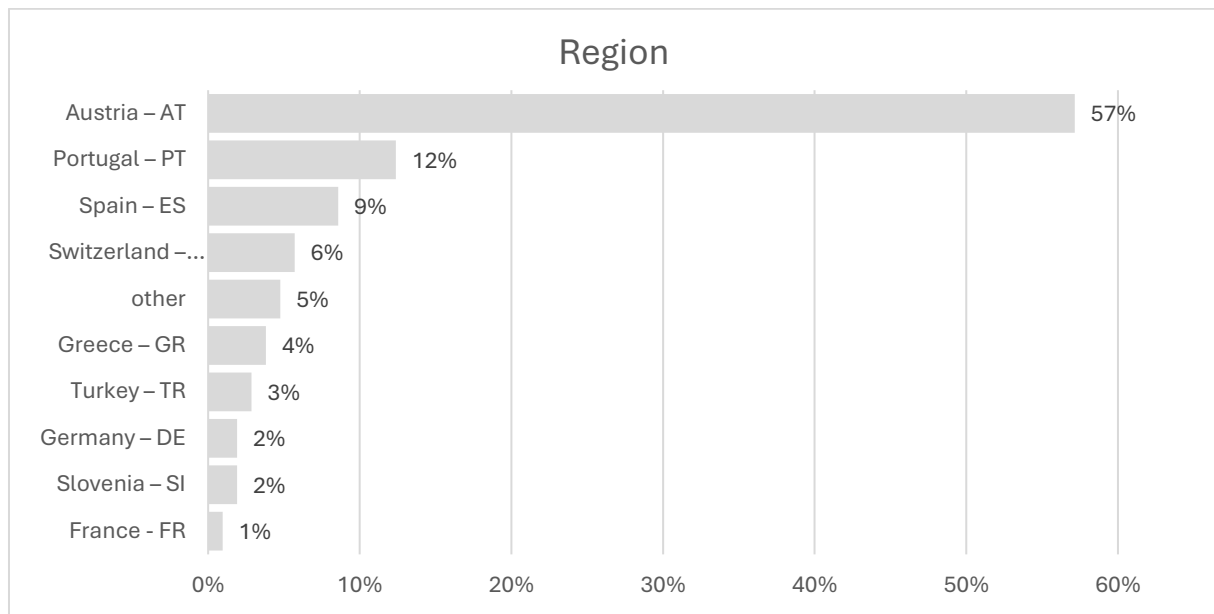
$$\text{LBRI} = (P1 * 1) + (P2 * 0.5) + (P3 * 0)$$

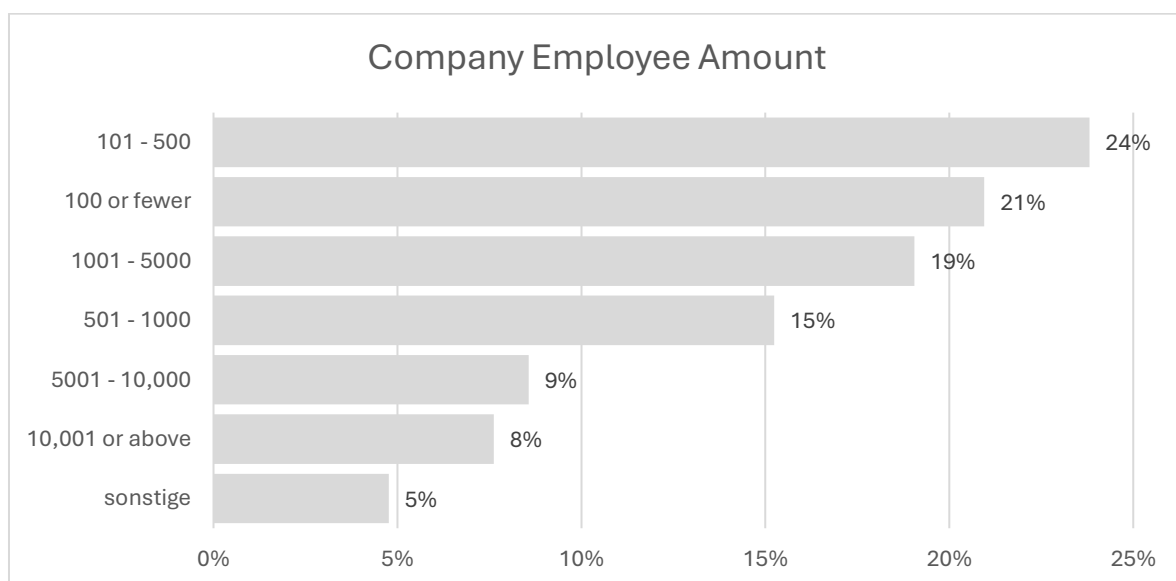
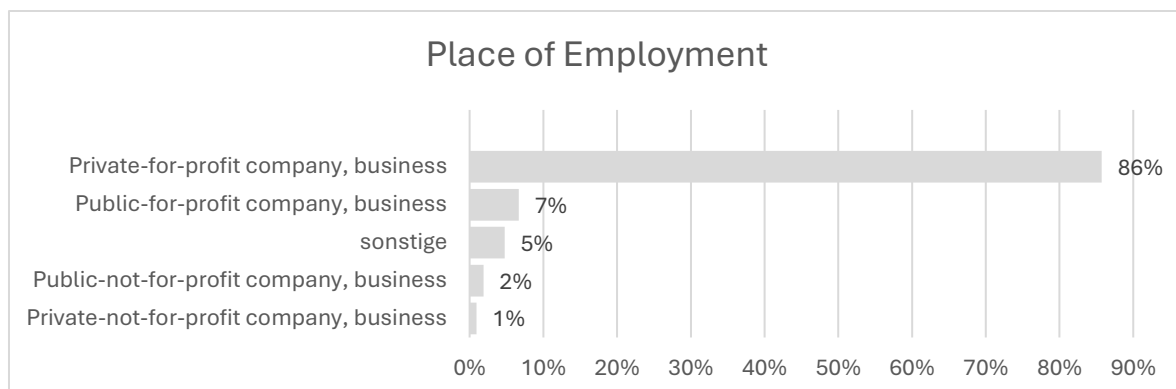
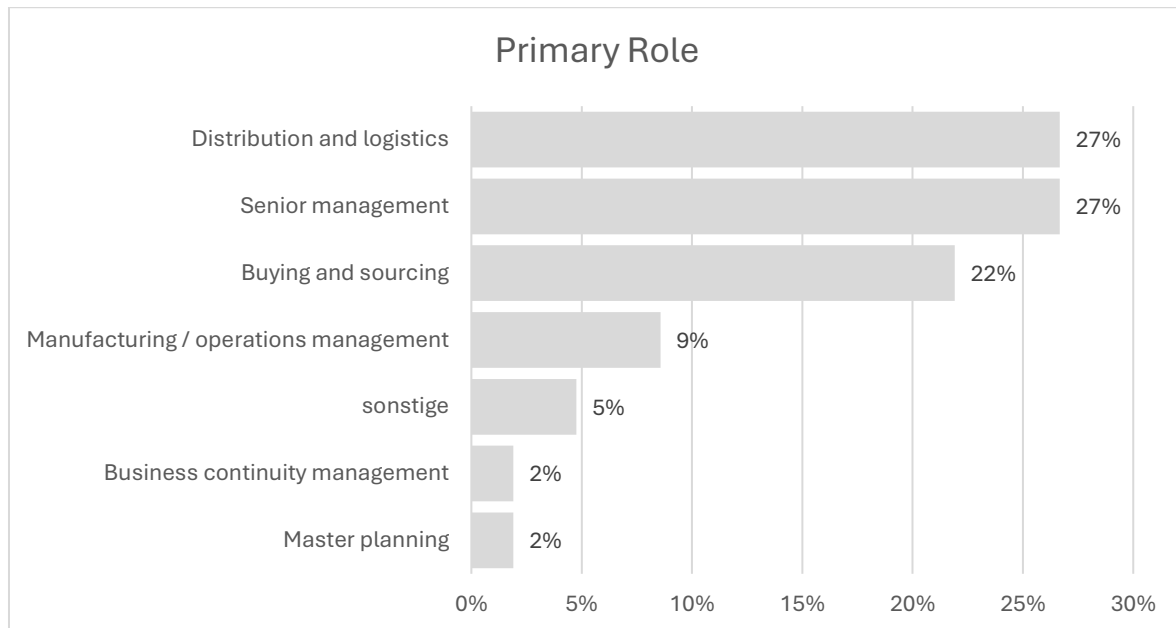
P1 = percentage of answers reporting an increase

P2 = percentage of answers reporting no change

P3 = percentage of answers reporting a deterioration

Appendix B: Demographics





Imprint

Publisher

Prof. (FH) DI Dr. Veit Kohnhauser
University of Applied Sciences Upper Austria
LOGISTIKUM – Faculty of Logistics
Wehrgraben 1–3
4400 Steyr
Austria

Website: <https://fh-ooe.at>

Report Download: <https://www.vnl.at/leistungen/european-supply-chain-risk-indicator>

Contact

For further information or participation in the survey:

veit.kohnhauser@fh-steyr.at