

Perceived Risk As Determinant Of Supply Chain Management Practices

Alexander T.C¹, Dr. K. Anandanatarajan², Dharmapuram Gnanambigai³

¹Research Scholar, Department of Business Administration, Annamalai University, Annamalai Nagar

²Associate Professor, Department of Business Administration,

³Government Arts College for Women, Mayiladuthurai

Keywords: Perceived risk, SCM Practice	Abstract The study has been done to examine the relationship of perceived risks with the investments made towards the strategies of supply chain resilience. Data has been collected with the help of questionnaire which comprised of items related with supply chain practices and perceived risks. The responses of the respondents have been recorded through a 5-point Likert scale for analyzing the level of agreement & disagreement towards the varied statements. The respondents have been selected through simple random sampling and the sample size is 100. Inferential statistical methods like regression and correlation have been applied for data analysis. It has been explored that all the statements related with perceived risks are related positively with the supply chain practices. This means that high level of perceived risk is related with the increased adoption of the practices of supply chain management.
---	---

Introduction

The present day's business environment is highly competitive and globalized and hence, the supply chain management has turned out to be an important function of the business entities which strive to accomplish sustainability, responsiveness and efficiency. The organizations of present times compete with one another as part of the inter-connected supply chains, wherein the effectiveness of one firm affects the success of other firms. Since the supply chain practices have turned out to be highly complicated, widening the branches across borders and comprising of many stakeholders, the managers need to arrive at a decision which makes a balance between the elements of cost savings, operational efficiency and the satisfaction of the customers. Such decisions are determined by both tangible and intangible factors. Tangible factors in this context include infrastructure and technology and risk perceptions and perceptions of benefits, which affect the decision of the managers, come under intangible factors.

As in the context of SCM (supply chain management), perceived risk has attained more importance. Supply chains are confronted with varied risks which arise due to fluctuations in demand, disruptions in supply, technological setbacks, geo-political instability and natural disasters. But, the behavior of managers towards perceived risks is determined not by the actual level risk but, through the manner in which such risks has been perceived by the personnel in-charge of making decisions. The managers are enabled to take up conservative strategies, like maintenance of increased level of stocks for safety or diversification of suppliers, through the perceptions towards risks. Such strategies are adopted for mitigating uncertainties. Hence, it is essential to understand perceived risk as it offers information regarding the reason for which the firms undertake certain strategies, even in the existence of alternative approaches that may be suggested by the levels of objective risks.

With the increase in global disruptions, like the conflicts between nations or rise of any pandemic, much importance is being given to the relationship of perceived risk with the supply chain practices. Such

disruptions make the global chain chains to face vulnerabilities and also force the managers in reassessing their strategies. Even in few firms, the increased risk perception had paved the way towards heightened investment towards resilience, supplier diversification and re-shoring. Such varied types of approaches explain the manner in which the perceptions determine strategic choices.

Academic studies with respect to organizational behavior, decision-making and risk management offer theoretical insights regarding the analysis of the way perceptions influence the actions of the managers. Prospect theory proposes that the personnel making decisions often rely more on losses than on gains. This means that high impact is made by perceived risk than the perceived benefits. In the same way, TAM highlighted that decisions are highly influenced by perceived ease of use and perceived usefulness. The integration of both the perspectives mentioned above within SCM (supply chain management) offers high level of awareness towards the reason for which firms take up certain practices and oppose few of them.

Investigation of the perceived risks helps the supply chain managers to identify the way perceptions affect decisions and this enables the organizations to design strategies for the management of the attitudes of the stakeholders. For instance, the strategies of risk communication enable in the reduction of exaggerated perceptions towards risk perceptions and also measuring & exhibiting the tangible benefits, which ultimately the decision to adopt innovative practices. Awareness towards the risk perceptions also helps the organizations in aligning the strategies of supply chain with the goals of the organization, thereby assuring that the mitigation of risk and maximization of benefits have been pursued in sustainable and balanced way.

Problem Statement

The supply chains of the present business world operate in a situation filled with technological development, global interdependence and uncertainty. The risks like geo-political instability demand fluctuations and supply disruptions are objective risks which are clearly witnessed. However, perceived risks of such events are the ones which determine the decisions made by the managerial personnel. There are chances that the managers tend to underestimate or overestimate risks which lead to over-confidence like excessive dependence over the single suppliers or even excessive conservatism like maintenance of increased stock level.

Need for the Study

The risk perception of managers and the global disruptions highly determine the resilience strategies towards supply chain. It is essential to have an organized examination of the perceived risk to know the reason for which increased investments are made by some firms to mitigate risks while some are not ready for such risk mitigation.

Objectives of the Study

The aim of the study is to explore the relationship of perceived risks with the investments levels made towards the strategies of supply chain resilience.

Review of literature

Chopra & Sodhi (2014) made a study regarding the managerial responses towards the disruptions. The authors had explored that organizations design the networks of supply chain on the basis of severity of risks and perceived likelihood. The study of these authors explained that the managers most often over-estimate rare but highly influencing risks which lead to the practices like excessive stock holdings, geographic spread and supplier diversification as the preventive measures.

Scholten & Schilder (2015) analyzed the role played by perceived risk to nurture collaboration amidst the partners in supply chain. It was found by the authors that when the organizations had high levels of perceptions towards the environmental uncertainty, they tend to get engaged in joint practices of risk-

sharing like resource pooling and collaborative forecasting. It was highlighted in the study that the risk perceptions improved the cooperation between the firms.

Kumar, et al., (2017) studied the perception of risk towards supply chain with respect to the manufacturing sector of India. It was explored through the study that supplier reliability, regulatory barriers and logistical delays were the major risks perceived by the managers. This ultimately influenced the selection of suppliers, inventory policies and relationship management. It was concluded that the decision-making process was highly affected by perceived risks when compared with actual risk occurrence.

Fan & Stevenson (2018) studied the perceived risks which were related with adoption of technology within the supply chains. The authors had explained that issues related with data privacy and risks in cyber-security were the major risks perceived by the managers in adopting the tools of digital risk management. However, risk perception also proved to be the motivator for investments to be made towards technologies to enhance visibility and towards predictive analytics. The study proved the dual effect of perceived risks.

Ivanov (2020) examined the perceived risks in supply chain. The study was done during the pandemic of COVID-19. It was explored that the responses of the firms towards the global issues like digital monitoring, dual sourcing and near-shoring, were affected by the perceptions of the firms regarding vulnerability, when compared with the actual assessments of quantitative risks. The author had focused over the increased role played by perception during the times of crisis.

Araz, et al., (2020) highlighted the perception of analyzing the decision-making process which is driven by crisis, with respect to supply chain. The study done by these authors had revealed that managerial decisions, during the times of emergencies related with health and sudden crisis, depend on the perceived risks related with shutdown and contagion, which lead to redesigning of the practices of supply chain. It was emphasized that the decisions which are made on the basis of perception may prove to be costly in the short run, but essential for long-term sustainability.

Research Methodology

The study has been done through quantitative approach. Primary data has been collected through questionnaire. The items comprised in the questionnaire are related with supply chain practices and perceived risks. The population of the study comprises of senior operation managers, logistics executives, procurement officers and supply chain managers of manufacturing industries. The population of this kind has been selected due to the reason that the above-said personnel are directly related with making decisions towards evaluation of risks & benefits. Respondents have been selected through simple random sampling and the sample size is 100. Analysis of the data has been done through regression and correlation.

Analysis and Interpretation

Regression Analysis

1. Model Summary Table

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.856	0.733	0.712	0.368

Interpretation:

A strong relationship has been found through the table amidst perceived risk & supply chain management practice. This has been proved with the value of R to be 0.856. The value of R² is 0.733 which shows a

variance of 73.3% towards SCM being discussed through the statements of perceived risks. The value of adjusted R^2 is 0.712 which affirms that the model of the study is reliable.

2. ANOVA Table (F-value and p-value)

Model	Sum of Squares	df	Mean Square	F-value	Sig. (p-value)
Regression	17.236	5	3.447	25.41	0.000
Residual	6.254	94	0.066	—	—
Total	23.490	99	—	—	—

Interpretation:

It has been interpreted from the table that the model of regression is significant and this is proved through the F value to be 25.41 with the related p value as 0.000. the results affirms that the variables of risk perception affect the practices of SCM.

3. Coefficients Table

Predictor (IV)	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (Beta)	t-value	Sig. (p-value)
(Constant)	0.482	0.221	—	2.18	0.032
Supply Risk	0.263	0.079	0.290	3.33	0.001
Demand Risk	0.241	0.072	0.270	3.35	0.001
Operational Risk	0.198	0.065	0.220	3.05	0.003
Environmental and External Risk	0.227	0.074	0.250	3.07	0.003
Financial and Strategic Risk	0.174	0.062	0.180	2.81	0.006

Interpretation:

The table mentioned here shows that all the items related with perceived risk are related positively with the increased adoption of the practices of SCM. The predictors of the study are found to be significant as they are less than 0.05. Based on beta value, it has been found that the practices of SCM are strongly predicted by supplier reliability and supply disruptions.

Suggestions

On the basis of the analysis, many suggestions have been given for the firms which try to manage the perceived risks within the practices of supply chain. It has been suggested that the firms need to execute the programs related with risk awareness for ensuring that the managers possess an understanding towards potential threats. This helps to avoid under-estimation or over-estimation of risks and also enables rational decisions to be taken. Next, the firms need to develop structured frameworks towards risk assessment which integrate managerial perceptions and objective data, thereby helping to make balanced strategies towards logistics planning, supplier selection and inventory management.

Conclusion

Perceived risk has got the potential to affect the managerial decisions towards the practices of SCM. The perceptions of managers towards disruptions, reliability of suppliers, environmental uncertainties and regulatory challenges determine the adoption of practices which are oriented towards resilience. The study shows that increased perceived risks makes the firms to invest heavily over strategies like technological monitoring, collaboration and diversification for securing the supply chain continuity. Through the knowledge of perceived risks, the firms can also frame proportionate and effective SCM strategies which make a balance amidst resilience, cost and efficiency.

References

1. Araz, C., Choi, T. Y., Olson, D., & Salman, F. S. (2020). Crisis-driven supply chain decision making: The role of perceived risks . *International Journal of Production Economics*, 227, 107656. [<https://doi.org/10.1016/j.ijpe.2020.107656>]
2. Chopra, S., & Sodhi, M. S. (2014). Reducing the risk of supply chain disruptions . *MIT Sloan Management Review*, 55(3), 73–80.
3. Christopher, M., & Peck, H. (2004). Building the resilient supply chain . *The International Journal of Logistics Management*, 15(2), 1–14. [<https://doi.org/10.1108/09574090410700275>]
4. Fan, Y., & Stevenson, M. (2018). Perceived risks of digital technologies in supply chains and managerial responses . *Supply Chain Management: An International Journal*, 23(5), 385–398. [<https://doi.org/10.1108/SCM-02-2018-0071>]
5. Ivanov, D. (2020). Predicting the impacts of epidemic outbreaks on global supply chains: A simulation-based analysis on COVID-19 . *Transportation Research Part E: Logistics and Transportation Review*, 136, 101922. [<https://doi.org/10.1016/j.tre.2020.101922>]
6. Kumar, S., Banerjee, P., & Meena, S. (2017). Perceived supply chain risks and their impact on supply chain management practices: Evidence from Indian manufacturing firms . *Journal of Manufacturing Technology Management*, 28(5), 603–623. [<https://doi.org/10.1108/JMTM-06-2016-0092>]
7. Manuj, I., & Mentzer, J. T. (2008). Global supply chain risk management . *Journal of Business Logistics*, 29(1), 133–155. [<https://doi.org/10.1002/j.2158-1592.2008.tb00072.x>]
8. Scholten, K., & Schilder, S. (2015). The role of collaboration in supply chain risk management . *International Journal of Physical Distribution & Logistics Management*, 45(1/2), 162–188. [<https://doi.org/10.1108/IJPDLM-05-2013-0125>]
9. Tang, C. S. (2006). Perspectives in supply chain risk management . *International Journal of Production Economics*, 103(2), 451–488. [<https://doi.org/10.1016/j.ijpe.2005.12.006>]
10. Zsidisin, G. A. (2003). A grounded definition of supply risk . *Journal of Purchasing and Supply Management*, 9(5–6), 217–224. [<https://doi.org/10.1016/j.pursup.2003.08.002>]