



**RESEARCH PAPER**

**A Systematic Review on Supply Chain Risk Management: Issues, Challenges, and Future Agenda**

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**ABSTRACT**

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Continuous expansion of knowledge in supply chain management demands consolidated instead of dispersed information for decision-makers. The study undertakes a systematic literature review to provide an up-to-date look into Supply Chain Risk Management through the syntheses of the most recent report based on evidence. This review further classifies gaps in the literature and provides directions for future research. Considering the previous systematic reviews, this study employs the established method of 'Systematic Review' to review the articles that have been published comprehensively in high-impact factor journals over the last five years. This study provides a conceptual framework to comprehend various risks that can make a firm's supply chain vulnerable. The study's findings suggest that integrated supply chain risk is the most crucial risk to identify, assess, mitigate and monitor due to the extended nature of global supply chains. It is also concluded that the supplier-related risk is also essential to be recognized and shall be treated accordingly. The study also provides vital tools to diagnose and mitigate risk factors in the supply chain and its management based on the identified gaps.

**Introduction**

Numerous supply chains fail to deliver products and services to the customers during the corona virus pandemic (Esper, 2021). At the beginning of COVID-19, it was observed as a Chinese local matter. But it adversely affected the global supply chains; reportedly, 95% of Fortune, including 1000 firms that had integration with China, experienced disruptions and issues in the flow of operations. Supply Chain Risk (SCR) and its antecedents, i.e., supplier, customer, and internal staff, have been studied extensively in the literature and their impacts on smooth functioning global SCM networks. However, these pandemic disruptions brought new talks to the forefront.

Apart from the recent pandemic of 2019, numerous incidents have threatened the supply chains of companies worldwide associated with terrorism, politics, and economic crises.

According to Esper (2021), most supply chains struggled hard to bring goods to the market. Nonetheless, the SCM consequences continue to also happen globally, with market estimates showing that nearly 95% of Fortune 1000 firms have global supply chain practices and witnessed direct demand and material movement disturbances. Researchers have studied such threats in depth from the point of view of global supply chain networks. However, new Supply Chain Risk discussions have been brought to the forefront by pandemic-related work stoppages. SC risk research focuses mainly on operating threats that affect investment in inventories and the supply chain's expenses.

Some famous scholars have carried out research regarding literature reviews and comprehended significant research discoveries in recent years, but the researchers have paid less attention while undertaking a systematic review. Systematic Review (SR) offers an accessible methodological approach to uncover research holes. This study adopts the methodology given by (Murata et al., 2014), which is designed to turn the existing medical science methodology into its management-related research and will provide insights into SC risks and help managers understand dynamic risks in today's competitive environment.

Reviewing the literature systematically provides the basis on which further research can be built. Its primary purpose is to have a deep understanding and insight of pertinent research that is already undertaken and trends that the previous research has developed.

This study has undertaken supply chain risk (SCR) because it is a built-in element of any supply chain operations. Numerous risks threaten the firm's supply chains, including global trade wars, raw material shortages, pandemics, climate changes, economic uncertainty, etc.

According to Palareti et al. (2016), while systematic literature examinations have significantly contributed to the development of technology and medicine, their valuable contributions to supply chain knowledge development are minimal. Therefore, this study aims at providing a conceptual framework in the domain of supply chain risk, which can be very helpful to managers to understand various types of risks. The study will also give researchers a basis to understand future research topics in the subject area.

Some of the few systematic literature reviews conducted in the past, such as (Potter & O'Reilly, 2014; Zhao & Huchzermeier, 2018 and Ho et al., 2015) consolidated the research work from 1998 to 2015, 2000 to 2014, and 2003 to 2013 respectively. However, there is a need to have a fresh outlook. Since there is a continuous expansion of knowledge in the literature of almost every field (van Laar et al., 2017). There is a constant need to consolidate the dispersed understanding to facilitate decision-making (Carnahan et al., 2013). Technological advancements trigger new challenges to create an urge to address them. In the technologically advanced scenario, obsolescence is relatively rapid, and there is a dire need to equip decision-makers with up-to-date

knowledge (Cole et al., 2019). This study addresses this issue and starts the journey where other scholars or researchers had finished. This systematic review covers research studies from 2015 to 2020 to consolidate current supply chain risk management issues.

### Material and Methods

A systematic review aims to gather evidence to answer a pre-defined research question. As suggested by Pollock & Berge (2018), this review has been conducted systematically, and the following steps are followed:

- Identifying research priorities and objectives
- Compilation of literature review in one place
- Data selected from the gathered literature
- Content appraisal of the literature
- A systematic review of key findings
- Result inference and discussions

### Search Strategy

The initial step of the search strategy in carrying out a Systematic Literature Review is, to begin with, identifying keywords and the search terms from the research scope. One crucial point is that the search words are repeated in the future. Systematic search has been carried out in internationally recognized databases such as Elsevier, Emerald, JSTOR, Sage, Springer, Taylor & Francis, and Wiley. The keyword used is "Supply Chain Risk."

### Search Criteria

Inclusion criteria are given down below: -

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#### Inclusion Criteria

- Research articles to be published in impact factor journals in the English language.
- Articles must be published from 1st January 2015 to 7th December 2020
- Articles of all forms of supply chain risk management are included

The following mentioned sources have not been used for data collection.

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#### Exclusion Criteria

- MPhil and Ph.D. level dissertations.
  - Articles other than the English language
  - Any conference proceedings
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### Screening

The researchers reviewed all the content published on Supply Chain Risk from the sources mentioned in the inclusion criteria. This includes a screening of abstracts and titles. However, the studies that came from searching keywords but did not support the researched area were separately evaluated based on their usefulness.

**Quality Review**

Relevant articles extracted were carefully and thoroughly screened and selected based on their contribution to this paper and methodological accuracy. Screened studies were further refined through a quality review tool known as the "Mixed Methods Appraisal Tool (MMAT)" (Hong et al., 2018).

**Results and Discussion**

As mentioned in the "Search Strategy" section, research articles have been searched in the databases. A total of 1874 research articles and dissertations came in the search results and were further reviewed to check for duplicates or copyrights. Out of these 1874 papers, 314 were shortlisted based on their titles and abstracts. The final list is based on their publications in high impact factor journals, i.e., 3.0 and above, with 65 articles. The Prisma Diagram is attached in Table 2, and year-wise article distribution according to their publication is shown in Figure 2. The percentage of studies concerning research methodology is shown in Figure 3, where most of the studies are based on quantitative methods. Minimal reviews were carried out on qualitative and mixed methods.

	Taylor & Francis (1874 Articles)	Springer (310 Articles)	Emerald (943 Articles)	JSTOR (70 Articles)	Elsevier (63 Articles)	Wiley (09 Articles)	Sage (28 Articles)	QADT (46 Articles)
Identification	Articles Identified after Initial Screening ( n= 1874)							
Screening	Excluded on the basis of comprehensive screening (n=314)							
Eligibility	Paper included for the study after MMAT tools (n= 65)							
Included								

Table 2: PRISMA

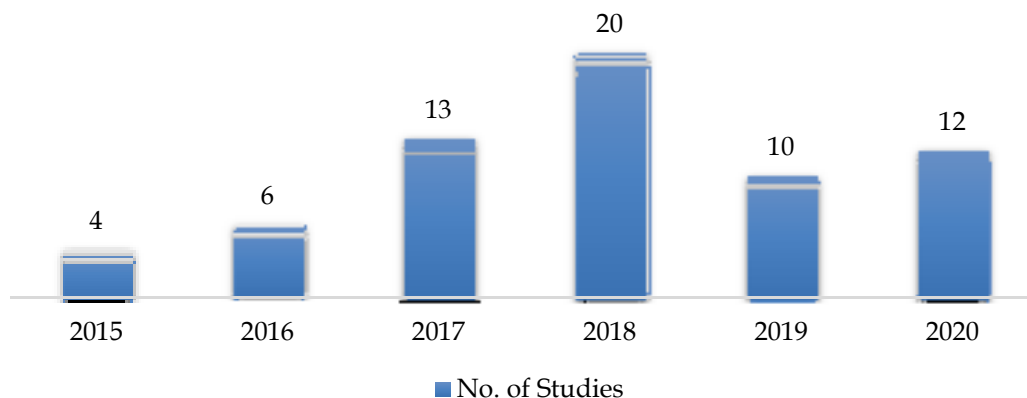


Figure 1: Articles distribution with the year of publication

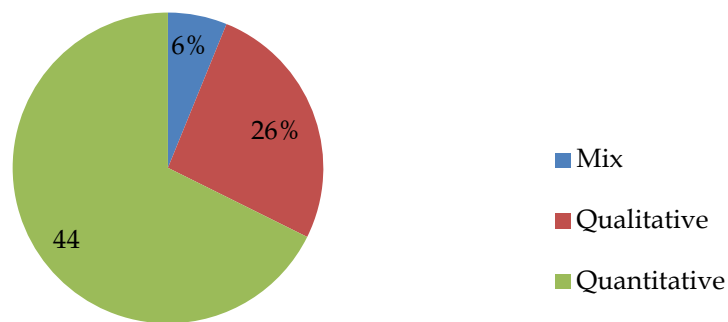


Figure 2: Types of studies

**Table 3**  
Journal Name, ISSN Reference, Host Name, and related details

S.No.	Journal Name	ISSN	Scopus	WoS	Host	2015	2016	2017	2018	2019	2020	Total
1	International Journal of Production Economics	0925-5273	ü	ü	Elsevier	1	2	2	2	-	3	10
2	International Journal of Production Research	0020-7543	ü	ü	T & F	-	-	1	6	2	-	9
3	Computers & Industrial Engineering	0360-8352	ü	ü	Elsevier	1	-	1	-	1	4	7
4	Supply Chain Management: An International Journal	1359-8546	ü	ü	Emerald	-	1	1	4	-	-	6
5	Journal of Cleaner Production	0959-6526	ü	ü	Elsevier	-	-	2	1	1	1	5
6	International Journal of Physical Distr & Log Management	0960-0035	ü	ü	Emerald	-	1	-	1	-	2	4
7	Journal of Intelligent Manufacturing	0956-5515	ü	ü	Springer	1	-	1	1	-	-	3
8	European Journal of Operational Research	0377-2217	ü	ü	Elsevier	1	-	1	-	-	-	2
9	Industrial Management & Data Systems	0263-5577	ü	ü	Emerald	-	-	2	-	-	-	2
10	International Journal of Operations & Prod. Management	0144-3577	ü	ü	Emerald	1	-	-	1	-	-	2
11	Advanced Engineering Informatics	1474-0346	ü	ü	Elsevier	-	-	-	-	-	1	1
12	Food Control	0956-7135	ü	ü	Elsevier	-	-	1	-	-	-	1
13	International Journal of Management Science	0305-0483	ü	ü	Elsevier	-	-	1	-	-	-	1
14	Journal of Manufacturing Systems	0278-6125	ü	ü	Elsevier	-	-	-	-	1	-	1
15	Journal of Operations Management	0272-6963	ü	ü	Elsevier	-	1	-	-	-	-	1
16	Journal of Retailing and Consumer Services	0969-6989	ü	ü	Elsevier	-	-	-	-	1	-	1
17	Resources, Conservation & Recycling	0921-3449	ü	ü	Elsevier	-	-	1	-	-	-	1
18	Simulation Modelling Practice and Theory	0928-4869	ü	ü	Elsevier	-	-	-	-	1	-	1
19	Sustainable Materials and Technologies	2214-9937	ü	ü	Elsevier	-	1	-	-	-	-	1
20	Technological Forecasting & Social Change	0040-1625	ü	ü	Elsevier	-	-	-	1	-	-	1
21	Transportation Research Part E	1366-5545	ü	ü	Elsevier	-	-	-	-	1	-	1
22	International Journal of Fuzzy Systems	1562-2479	ü	ü	Springer	-	-	-	-	1	-	1

23	<i>International Journal of Machine Learning and Cybernetics</i>	1868-8071	ü	ü	Springer	-	-	1	-	-	-	1
24	<i>Journal of Transportation Security</i>	1938-7741	ü	ü	Springer	-	-	-	1	-	-	1
25	<i>Journal of Supply Chain Management</i>	1523-2409	ü	ü	Wiley	-	-	-	1	-	-	1
<b>Total</b>						<b>5</b>	<b>6</b>	<b>15</b>	<b>19</b>	<b>9</b>	<b>11</b>	<b>65</b>

## Results and Discussions

### Classification of Methods used

Detailed review is carried out for selected 65 articles, i.e., extracting and tabulating data based on journal and publisher name, year of publication, study type, type of identified risk, and other significant details, as shown in Table 2. Classification of Methods used in the given articles is shown in Table 3, where most researchers adopt Structural Equation Modeling based on their quantitative studies. Other standard methods include document analysis, algorithm techniques, and simulation studies.

**Table 4**  
**Classification of Methods used in Studies**

Study Methods	Frequency
Structural Equation Modeling	14
Document Analysis	11
Algorithm Techniques	7
Simulation Study	5
Fuzzy Mapping	5
AHP Methods	3
Bayesian Belief Networks	2
Gephi Software	2
TOPSIS CRITIC Analysis	2
OLS Regression	1
Data Analysis	1
Sensitivity Analysis	1
Thematic Analysis	1
MSP Programming	1
Analytical Technique	1
Regression Analysis	1
Grounded theory	1
Failure Mode Analysis	1
Interpretive structural modeling	1
Delphi Method	1
Literature Review	1
Graph-Base Model	1
Grey theory & DEMATEL	1
<b>Grand Total</b>	<b>65</b>

### Categorization of Supply Chain Risks

After an in-depth analysis of full texts of 65 shortlisted research articles, it is revealed that most of the studies pertain to integrated risks in the area of supply chain management and that has exposure to the extended supply chain. Categorization of Risks is given below: -

**Table 5**  
**Categorization of supply chain risks**

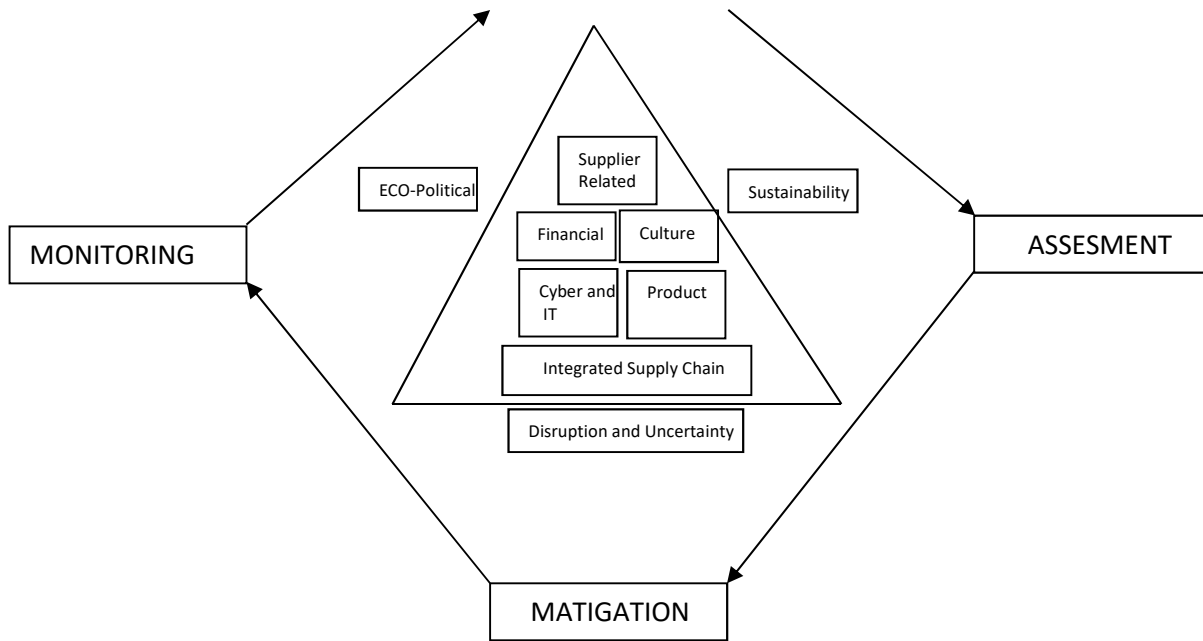
Risk Category / Focus	Both	External	Internal	Total
Cultural Risk			1	1
Cyber & IT	1	2	1	4
Disruption & Uncertainty	3	2	1	6
Econo-Political	1	2		3
Financial	3	1	1	5
Integrated Supply Chain Risk	21		2	23
Product Risk	4		1	5
Supplier Related	8	6		14
Sustainability Risk	3	1		4
Total	44	14	7	65

**Table 6**  
**Category of Risk with respective study numbers**

Category of Risk	Study No.
Cultural	20
Cyber & IT	7,21,50,53
Disruption & Uncertainty	5,12,16,31,34,49,54
Econo-Political	10,30,57
Financial	3,42,59,61,63
Integrated Supply Chain Risk	5,11,13,14,17, 22,25,27,32,35,37,38,41,43,45,46,47,49,55,60
Product	9,24,29,33,40
Supplier Related	2,6,15,19,23,26,28,36,39,44,52,56,58,62
Sustainability	1,4,8,18,51

### The conceptual framework for Supply Chain Risks

Numerous researchers have provided a wide range of qualitative and quantitative frameworks to identify risk elements in organizational supply chains (Blome & Schoenherr, 2011; Peck, 2005; Speier et al., 2011). However, a common weakness of the cited framework is their conceptualization. These are not verified using empirical data or are not implemented explicitly. However, there are some limitations to the above-cited frameworks. For this study, a conceptual framework is developed keeping in view the categories of internal and external risks that threaten supply chains based on the articles (Appendix A).



**Figure 3: Conceptual framework of Supply Chain Risk Integrated Supply Chain Risk**

Integrated Supply chain risk refers to the risk associated with the extended supply chains; thus, the players within a supply chain should understand the possible risk sources and manage accordingly. For this study, 20 types of research have been conducted on integrated supply chain risk urges the importance of identification, assessment, monitoring, and mitigation of supply chain risk within integrated Supply chain networks. Li et al. (2015) depict the linkages between Risk Information System (RIF) and Supply Chain Risk Management (SCRM) practices where they find that RIF strengthens supplier trust and mechanism strengthens SCRM understanding for the organization. Similarly, a case study reveals that the Risk assessment framework helps organizations identify the causes of natural and organizational disruptions and assess the magnitude of risk through the Risk framework. Other analytical models provided for mitigation include the Grey-Dematal approach, ISO 31000 standards assessment, and decision modeling (de Oliveira et al., 2017; Muktadir et al., 2018; Philip, 2016).

Other researchers studied the effect of integrated supply chain risk on a firm's resilience, robustness, agility, and integration (Behzadi et al., 2018; Jajja et al., 2018 and Macdonald et al., 2018). On the other hand, few simulation studies are also carried out during the period, notably providing a solution to understand the risk and develop mitigation strategies. These studies are primarily conducted on manufacturing firms having extended supply chains. The example includes Munir et al. (2020), who highlighted the significance of integration within supply chain risk management for the firm's successful operational performance. Some researchers also used grounded theory and the Bayesian-based FMEA framework to understand the magnitude of risk and other relatable assessments (Shojaei & Haeri, 2019, Wan et al., 2019).

**Cultural Risk**



The findings conducted by H. Fan et al. (2017) signify the importance of SCRM culture and team management for successful risk analysis. The study urged that SCRM cultural diffusion and strategy alignment significantly influences the information system and research. Furthermore, the information system itself affects risk analysis and operational performance.

### **Eco-Political Risk**

Few studies conducted on Economic and Political Risk commends within the manufacturing supply chain context highlight the importance of identifying uncertainties in the supply of material, capital, and knowledge. Studies also suggest that managing manufacturing-related risks is crucial for successful business performance (Kumar et al., 2018, Sreedevi & Saranga, 2017).

### **Product Risk**

As Nuss et al. (2016) depicted, product diversity, complexity, and potential bottlenecks within the context of SCR provided a network analysis framework for critical product supply chains. The study conducted on Risk Avoidance Ratings (RAR) using *Gephi* techniques gave insight into internal and extended supply chains. However, the results cannot apply to all types of products. Similar studies provide comprehensive risk modeling for product risk using the Bayesian-Belief network approach to evaluate feasible risk states for an enterprise (Daultani et al., 2019). According to Kilubi & Rogers (2018), there is a strong association between supply chain risk management and firm performance, especially in flexible and responsive product supply chains. Likewise, (Ma & Wong, 2018) provided a fuzzy-based model and house of risk tool for global product supply chains.

### **Disruption and Uncertainty Risk**

Several studies have been conducted on disruption and uncertainty risks in supply chains; however, their viewpoints did not match. Scheibe & Blackhurst (2018) studied disruption propagations as systematic risk, employing an accident theory approach concluding three dimensions to explain supply chain disruptions: disruption nature, dependence, and decision making. Qazi et al. (2018) demonstrated that the variables of uncertainties and decision-making had provided a holistic framework for mitigating risks among supply chain networks. The subject study employed the Bayesian Belief Network approach to justify the results empirically. Studies conducted by Ledari et al. (2018) and Wan et al. (2019) urged the importance of uncertainties and disruptions by employing algorithm and simulation techniques to ignite the significance of risk sensitivity levels.

### **Financial Risk**

Several studies identified financial risks as crucial areas of concern in supply chains, such as price, cash flow, capacity, reputation, product, and contract negotiations. Analytical models and frameworks were provided to prioritize the potential risks and study the relationships among cost structures and other influencing variables in supply chains (Bandaly et al., 2016, Tsai, 2017). A study conducted by Oliveira et al. (2017) concluded a need to identify the suppliers' financial health to re-negotiate the contractual terms by the firm's buyers to avoid supply chain disruptions and improve supplier performance.

### **Sustainability Risk**

Studies on sustainability risk identify the critical success factors required for organizations to overcome such related risks in their supply chain. Fahimnia et al. (2015) concluded that sustainability risk is the most emerging area under supply chain risk management. The subject study employed analysis of at least 358 empirical researches and mapped them together on *Gephi* analysis. Other studies conducted by (Busse et al., 2016; Cunha et al., 2019) signify stakeholder importance in the visibility of sustainability risks in supply chains. These studies also provide frameworks for sustainability hotspots and social supply chain risk management.

Abdel-Basset & Mohamed (2020) and Rostamzadeh et al. (2018) carried out other notable work by employing TOPSIS-CRITIC models for sustainable supply chain risk management. Both studies evaluate tolerable risks in supply chains and provide decision-making criteria for mitigation.

### **Supplier Related Risk**

Numerous studies have been carried out from 2015 to 2020 on Supplier-related Risk due to extended and global supply chains. Most of the studies highlight the importance of supplier integration as a necessary domain for integrated planning and risk management. Other studies emphasized the importance of buyer-supplier relationships and supplier portfolio analysis to avoid disruptions in supply chains (Fan & Stevenson, 2018; Sawik, 2018). Likewise, few researchers highlighted the importance of multiple sources in supply chains to mitigate supplier-related risks (Namdar et al., 2018; Tian & Guo, 2019).

A study conducted by Dupont et al. (2018) gives insights into the supplier selection process and risk sensitivity by a decision support model. The study employed algorithm techniques to quantify the minimum value of gross margins for profitability and strategies.

### **Limitations of the Study**

Due to maintaining the quality of the systematic review, article selection has been limited to the impact factor journal 3.0 and higher only. Future studies can include all articles and increase the review horizon by involving dissertations etc. Studying the risk elements concerning supply chain integration is also recommended to evaluate the risk effect on a firm's integrations.

## **Conclusion and Recommendations**

A systematic review of 65 articles published between January 2005 and December 2020 using a systematic approach to gain insight into the latest trends in the area of supply chain risk. The study revealed that apart from numerous types of risks, including financial, sustainability, and eco-political, the significant crucial risk is integrated supply chain risks due to extended and global supply chains, i.e., incorporating suppliers and customer integrations. Based on the conceptual framework developed from the literature review, it is revealed that integrated supply chain risk is the most crucial and fundamental risk in the extended supply chain. Among the studied 65 articles, 21 articles discussed the identification, assessment, mitigation, and monitoring of the subject risk. Due to the very nature of risk, researchers have provided numerous methods to help identify it in a very early stage through several techniques including Bayesian-Belief Networks, Fuzzy Model, AHP Methods, Graph-based model, Failure Mode Analysis, Regression and Algorithm methods as well as Structural Equation Modeling (SEM).

Structural Equation Modeling (SEM) has gained a lot of interest apart from the documentary analysis of researchers' literature in recent times. So, it is therefore recommended to employ the SEM approach to quantify further the risk behavior and attitude of complex supply chain networks.

## References

- Abdel-Basset, M., & Mohamed, R. (2020). A novel plithogenic TOPSIS- CRITIC model for sustainable supply chain risk management. *Journal of Cleaner Production*, 247, 119586. <https://doi.org/10.1016/j.jclepro.2019.119586>
- Bandaly, D., Satir, A., & Shanker, L. (2016). Impact of lead time variability in supply chain risk management. *International Journal of Production Economics*, 180, 88–100. <https://doi.org/10.1016/j.ijpe.2016.07.014>
- Behzadi, G., O'Sullivan, M. J., Olsen, T. L., & Zhang, A. (2018). Agribusiness supply chain risk management: A review of quantitative decision models. *Omega (United Kingdom)*, 79, 21–42. <https://doi.org/10.1016/j.omega.2017.07.005>
- Blome, C., & Schoenherr, T. (2011). Supply chain risk management in financial crises - A multiple case-study approach. *International Journal of Production Economics*, 134(1), 43–57. <https://doi.org/10.1016/j.ijpe.2011.01.002>
- Busse, C., Kach, A. P., & Bode, C. (2016). Sustainability and the False Sense of Legitimacy: How Institutional Distance Augments Risk in Global Supply Chains. *Journal of Business Logistics*, 37(4), 312–328. <https://doi.org/10.1111/jbl.12143>
- Carnahan, S., Agarwal, R., & Campbell, B. (2013). The Role Of External Knowledge Sources And Organizational Design In The Process Of Opportunity Exploitation. *Strategic Management Journal*, 34(October), 1–43. <https://doi.org/10.1002/smj>
- Cole, R., Stevenson, M., & Aitken, J. (2019). Blockchain technology: implications for operations and supply chain management. *Supply Chain Management*, 24(4), 469–483. <https://doi.org/10.1108/SCM-09-2018-0309>
- Cunha, L., Ceryno, P., & Leiras, A. (2019). Social supply chain risk management: A taxonomy, a framework and a research agenda. *Journal of Cleaner Production*, 220, 1101–1110. <https://doi.org/10.1016/j.jclepro.2019.02.183>
- Daultani, Y., Goswami, M., Vaidya, O. S., & Kumar, S. (2019). Inclusive risk modeling for manufacturing firms: a Bayesian network approach. *Journal of Intelligent Manufacturing*, 30(8), 2789–2803. <https://doi.org/10.1007/s10845-017-1374-7>
- de Oliveira, U. R., Marins, F. A. S., Rocha, H. M., & Salomon, V. A. P. (2017). The ISO 31000 standard in supply chain risk management. *Journal of Cleaner Production*, 151, 616–633. <https://doi.org/10.1016/j.jclepro.2017.03.054>
- Dupont, L., Bernard, C., Hamdi, F., & Masmoudi, F. (2018). Supplier selection under risk of delivery failure: a decision-support model considering managers' risk sensitivity. *International Journal of Production Research*, 56(3), 1054–1069. <https://doi.org/10.1080/00207543.2017.1364442>
- Esper, T. L. (2021). Supply Chain Management Amid the Coronavirus Pandemic. *Journal of Public Policy and Marketing*, 40(1), 101–102. <https://doi.org/10.1177/0743915620932150>

- Fahimnia, B., Tang, C. S., Davarzani, H., & Sarkis, J. (2015). Quantitative models for managing supply chain risks: A review. *European Journal of Operational Research*, 247(1), 1-15. <https://doi.org/10.1016/j.ejor.2015.04.034>
- Fan, H., Li, G., Sun, H., & Cheng, T. C. E. (2017). An information processing perspective on supply chain risk management: Antecedents, mechanism, and consequences. *International Journal of Production Economics*, 4(1), 63-75. <https://doi.org/10.1016/j.ijpe.2016.11.015>
- Fan, Y., & Stevenson, M. (2018). Reading on and between the lines: risk identification in collaborative and adversarial buyer-supplier relationships. *Supply Chain Management*, 23(4), 351-376. <https://doi.org/10.1108/SCM-04-2017-0144>
- Ho, W., Zheng, T., Yildiz, H., & Talluri, S. (2015). Supply chain risk management: A literature review. *International Journal of Production Research*, 53(16), 5031-5069. <https://doi.org/10.1080/00207543.2015.1030467>
- Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M. P., Griffiths, F., Nicolau, B., O' Cathain, A., Rousseau, M. C., Vedel, I., & Pluye, P. (2018). The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*, 34(4), 285-291.
- Jajja, M. S. S., Chatha, K. A., & Farooq, S. (2018). Impact of supply chain risk on agility performance: Mediating role of supply chain integration. *International Journal of Production Economics*, 205, 118-138. <https://doi.org/10.1016/j.ijpe.2018.08.032>
- Kilubi, I., & Rogers, H. (2018). Bridging the gap between supply chain risk management and strategic technology partnering capabilities: insights from social capital theory. *Supply Chain Management*, 23(4), 278-292. <https://doi.org/10.1108/SCM-02-2017-0091>
- Kumar, V., Bak, O., Guo, R., Shaw, S. L., Colicchia, C., Garza-Reyes, J. A., & Kumari, A. (2018). An empirical analysis of supply and manufacturing risk and business performance: a Chinese manufacturing supply chain perspective. *Supply Chain Management*, 23(6), 461-479. <https://doi.org/10.1108/SCM-10-2017-0319>
- Ledari, A. M., Pasandideh, S. H. R., & Koupaei, M. N. (2018). A new newsvendor policy model for dual-sourcing supply chains by considering disruption risk and special order. *Journal of Intelligent Manufacturing*, 29(1), 237-244. <https://doi.org/10.1007/s10845-015-1104-y>
- Li, G., Fan, H., Lee, P. K. C., & Cheng, T. C. E. (2015). Joint supply chain risk management: An agency and collaboration perspective. *International Journal of Production Economics*, 164, 83-94. <https://doi.org/10.1016/j.ijpe.2015.02.021>
- Ma, H. L., & Wong, W. H. C. (2018). A fuzzy-based House of Risk assessment method for manufacturers in global supply chains. *Industrial Management and Data Systems*, 118(7), 1463-1476. <https://doi.org/10.1108/IMDS-10-2017-0467>
- Macdonald, J. R., Zobel, C. W., Melnyk, S. A., & Griffis, S. E. (2018). Supply chain risk

- and resilience: theory building through structured experiments and simulation. *International Journal of Production Research*, 56(12), 4337–4355. <https://doi.org/10.1080/00207543.2017.1421787>
- Mehrdokht Pournader, Kristian Rotaru, Andrew, Philip, Kach Seyed, Hossein, R. H. (2016). 36- Supply Chain Management: An International Journal Article information: An analytical model for system-wide and tier-specific assessment of resilience to supply chain risks Abstract. *An International Journal*, 21(5), 1–53.
- Moktadir, M. A., Ali, S. M., Mangla, S. K., Sharmy, T. A., Luthra, S., Mishra, N., & Garza-Reyes, J. A. (2018). Decision modeling of risks in pharmaceutical supply chains. *Industrial Management and Data Systems*, 118(7), 1388–1412. <https://doi.org/10.1108/IMDS-10-2017-0465>
- Munir, M., Jajja, M. S. S., Chatha, K. A., & Farooq, S. (2020). Supply chain risk management and operational performance: The enabling role of supply chain integration. *International Journal of Production Economics*, 227. <https://doi.org/10.1016/j.ijpe.2020.107667>
- Murata, K., Wakabayashi, K., & Watanabe, A. (2014). Study on and instrument to assess knowledge supply chain systems using advanced kaizen activity in SMEs. *Supply Chain Forum*, 15(2), 20–32. <https://doi.org/10.1080/16258312.2014.11517339>
- Namdar, J., Li, X., Sawhney, R., & Pradhan, N. (2018). Supply chain resilience for single and multiple sourcing in the presence of disruption risks. *International Journal of Production Research*, 56(6), 1–20. <https://doi.org/10.1080/00207543.2017.1370149>
- Nuss, P., Graedel, T. E., Alonso, E., & Carroll, A. (2016). Mapping supply chain risk by network analysis of product platforms. *Sustainable Materials and Technologies*, 10, 14–22. <https://doi.org/10.1016/j.susmat.2016.10.002>
- Palareti, G., Legnani, C., Cosmi, B., Antonucci, E., Erba, N., Poli, D., Testa, S., & Tosetto, A. (2016). Comparison between different D-Dimer cutoff values to assess the individual risk of recurrent venous thromboembolism: Analysis of results obtained in the DULCIS study. *International Journal of Laboratory Hematology*, 38(1), 42–49. <https://doi.org/10.1111/ijlh.12426>
- Peck, H. (2005). Drivers of supply chain vulnerability: An integrated framework. *International Journal of Physical Distribution & Logistics Management*, 35(4), 210–232. <https://doi.org/10.1108/09600030510599904>
- Pollock, A., & Berge, E. (2018). How to do a systematic review. *International Journal of Stroke*, 13(2), 138–156. <https://doi.org/10.1177/1747493017743796>
- Potter, A., & O'Reilly, S. (2014). Integrated supply chain risk management: a systematic review. *International Journal of Logistics Management*, 25(1), 1–42. <https://doi.org/10.1108/ijlm-03-2014-0041>
- Qazi, A., Dickson, A., Quigley, J., & Gaudenzi, B. (2018). Supply chain risk network management: A Bayesian belief network and expected utility based approach for

- managing supply chain risks. *International Journal of Production Economics*, 196, 24–42. <https://doi.org/10.1016/j.ijpe.2017.11.008>
- Rostamzadeh, R., Ghorabae, M. K., Govindan, K., Esmaeili, A., & Nobar, H. B. K. (2018). Evaluation of sustainable supply chain risk management using an integrated fuzzy TOPSIS- CRITIC approach. *Journal of Cleaner Production*, 175, 651–669. <https://doi.org/10.1016/j.jclepro.2017.12.071>
- Sawik, T. (2018). Selection of a dynamic supply portfolio under delay and disruption risks. *International Journal of Production Research*, 56(1–2), 760–782. <https://doi.org/10.1080/00207543.2017.1401238>
- Scheibe, K. P., & Blackhurst, J. (2018). Supply chain disruption propagation: a systemic risk and normal accident theory perspective. *International Journal of Production Research*, 56(1–2), 43–59. <https://doi.org/10.1080/00207543.2017.1355123>
- Shojaei, P., & Haeri, S. A. S. (2019). Development of supply chain risk management approaches for construction projects: A grounded theory approach. *Computers and Industrial Engineering*, 128, 837–850. <https://doi.org/10.1016/j.cie.2018.11.045>
- Speier, C., Whipple, J. M., Closs, D. J., & Voss, M. D. (2011). Global supply chain design considerations: Mitigating product safety and security risks. *Journal of Operations Management*, 29(7–8), 721–736. <https://doi.org/10.1016/j.jom.2011.06.003>
- Sreedevi, R., & Saranga, H. (2017). Uncertainty and supply chain risk: The moderating role of supply chain flexibility in risk mitigation. *International Journal of Production Economics*, 193, 332–342. <https://doi.org/10.1016/j.ijpe.2017.07.024>
- Tian, Q., & Guo, W. (2019). Reconfiguration of manufacturing supply chains considering outsourcing decisions and supply chain risks. *Journal of Manufacturing Systems*, 52(March), 217–226. <https://doi.org/10.1016/j.jmsy.2019.04.005>
- Tsai, C. Y. (2017). The impact of cost structure on supply chain cash flow risk. *International Journal of Production Research*, 55(22), 6624–6637.
- van Laar, E., van Deursen, A. J. A. M., van Dijk, J. A. G. M., & de Haan, J. (2017). The relation between 21st-century skills and digital skills: A systematic literature review. *Computers in Human Behavior*, 72(1), 577–588. <https://doi.org/10.1016/j.chb.2017.03.010>
- Wan, C., Yan, X., Zhang, D., Qu, Z., & Yang, Z. (2019). An advanced fuzzy Bayesian-based FMEA approach for assessing maritime supply chain risks. *Transportation Research Part E: Logistics and Transportation Review*, 125, 222–240. <https://doi.org/10.1016/j.tre.2019.03.011>
- Zhao, L., & Huchzermeier, A. (2018). Supply Chain Risk Management. *EURO Advanced Tutorials on Operational Research*, 39–55. [https://doi.org/10.1007/978-3-319-76663-8\\_3](https://doi.org/10.1007/978-3-319-76663-8_3)