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Big Data and Cross-Border Supply Chain Risk Management: A Theoretical Framework

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Abstract

The cross-border supply chains are now more intricate, interdependent, and prone to numerous disruptions such as pandemics and geopolitical tensions, cyberattacks, and climate-related occurrences. At the same time, the ever-increasing size of big data and sophisticated analytics provides unparalleled chances to detect, evaluate, trace, and mitigate the risks within a supply chain, which are not confined to national borders. This conceptual article constructs a synthesising theoretical framework that would combine the capabilities and potentials of the big data with cross border supply chain risk management (SCRM) processes. With reference to dynamic capabilities theory, information processing theory, and relational view of the firm, the paper suggests a multi-layered model which elucidates how big data analytics can be used to augment risk identification, risk assessment, risk mitigation and risk monitoring in global supply chain. The paper also includes the moderating functions of data governance, institutional distance and maturity of digital infrastructure in determining the success of big data-based SCRM. There is progression of theoretical propositions, and suggestions made on future empirical studies and managerial practise.

Keywords: Supply chain risk management, Big data analytics, cross-border supply chains, dynamic capabilities, information processing theory, global supply networks.

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1. Introduction

Global supply chain architecture which is embedded in global business set up comprised of cross-border supply chains across countries, regulatory jurisdictions, and cultures. Although this type of supply networks opens access to opportunity of efficiency of specialisation and access to global marketplaces, they also introduce firms to a complex mosaic of risks, such as demand volatility, supplier insolvency, logistical disruptions, regulatory non-compliance, geopolitical instability, and natural disasters (Ho et al., 2015; Ivanov, 2020). The COVID-19 pandemic, the Suez Canal blockade of 2021, and the current Russo-Ukrainian conflict have highlighted the vulnerability and interconnectedness of global supply systems and generated an immediate scholarly and management concern in supply chain risk management (SCRM) (Ivanov & Dolgui, 2021; Golan et al., 2020).

At the same time, supply chain has become more digitised, creating huge amounts of structured and unstructured information through Internet of Things (IoT) sensors, enterprise resource planning (ERP) systems, social media, satellite imagery, and customs databases and real-time logistics platforms (Wamba et al., 2020). The concept of big data, which is characterised by its volume, velocity, variety, veracity, and value, has become a strategic asset that, when combined with powerful analytics (machine learning, natural language processing, predictive modelling), can radically change the way companies see and respond to supply chain risks (Arunachalam et al., 2018; Nguyen et al., 2021).

Although the two domains have been increasingly identified, a gap in theory still exists. The past SCRM literature lacked the introduction of the transformative potential of big data analytics (BDA) as a holistic approach to managing risk (Fan et al., 2023). On the other hand, the literature on big data in supply chain management has focused on operational efficiency and demand forecasting more than systematic risk management in the cross-border, as compared to systematic risk management (Dubey et al., 2021). Not many of the studies have provided a detailed theoretical framework that these two fields are bridging, especially in the cross-border environment where informational asymmetry, heterogeneity in institutional structures, and complexity in coordinating contribute to the requirement and difficulty of data-driven risk management.

The gap in this paper is that of coming up with an integrative theoretical framework. The paper explains how BDA capabilities can be exploited throughout the entire cycle of cross-border SCRM, starting with the risk identification and assessment to mitigation and constant observation. It is based on the dynamic capability theory (Teece, 2007; Teece, 2018), information processing theory (Galbraith, 1974; Tushman & Nadler, 1978), as well as the relational perspective of the firm (Dyer & Singh, 1998). Another aspect of the paper is to discuss the contextual moderators such as data governance quality, institutional distance among trading partners, and maturity of digital infrastructure that moderates the effectiveness of big data to manage cross-border supply chain risks.

This paper has three-fold contributions. To begin with, it has a multi-theoretical basis on the intersection of BDA and cross-border SCRM. Second, it formulates a series of theoretically based propositions that may be used in future empirical studies. Third, it provides managerial knowledge regarding the strategic implementation of big data technologies in the global supply networks.

2. Conceptual Background

2.1 Cross-border Supply Chain Risk Management

Supply chain risk management involves the identification, evaluation, treatment, and monitoring of risk that can interfere with the supply chain networks of material, information,

and money (Ho et al., 2015). Cross-border setting also entails the added complexity of SCRM in the form of differences in regulatory regimes, currency devaluations, uncertainty in trade policies, cultural and linguistic obstacles, extended lead times, and reduced cross-jurisdictional visibility (Manuj & Mentzer, 2008; Sharma et al., 2022).

The risks in cross-border supply chain can be characterised in more than one way. The operational risks are the failures of suppliers, quality and logistics breakdowns. Monetary risks include currency fluctuations, trade credit risk and tariff. Natural disasters, climate change, and pandemics are some of the environmental threats. Examples of geopolitical risks are trade wars, political instability, sanctions, and armed conflicts. Cyber threats are becoming more noticeable in the context of expanding the scope of attacks due to the increase in digital interconnection (Ivanov & Dolgui, 2021; Golan et al., 2020). The interaction of such risk groups predisposes cascading and compounding effects that are hard to predict under the conventional methodologies of risk assessment (Hosseini et al., 2019).

Although being useful, traditional methods of SCRM, including safety stocks buffering, dual sourcing, supplier auditing, etc., tend to be reactive, siloed, and limited by lack of information. All these limitations are complicated by the cross-border dimension since the corresponding risk indicators are spread across geographies, languages, data systems, and institutional boundaries (Belhadi et al., 2022). This informational issue gives the theoretical incentive to investigate the role of big data.

2.2 Supply Chain Management with Big Data Analytics.

The term big data analytics can be described as the use of sophisticated computational methods on large, complex and heterogeneous data sets to derive actionable insights (Wamba et al., 2020). BDA has been used in supply chain management in demand prediction, inventory management, route planning, supplier analysis, and quality control (Nguyen et al., 2021). BDA is specifically thriving in the supply chain context due to the vast amount of data generated through purchase transactions, warehouse management, transportation telematics, customs documentation, point-of-sale documents, and other external and outside sources like weather data and news (Dubey et al., 2021).

Wamba et al. (2020) define BDA capability as a firm-level capability, which includes information infrastructure, data analytical skills, data-oriented culture, and decision-making processes of managers. This conceptualization is consistent with resource-based view, and it makes BDA a potentially inimitable resource that can deliver competitive advantage. The latter is furthered by more recent research by Dubey et al. (2021), who proof that BDA capabilities increase supply chain resilience the capacity to anticipate, prepare, respond, and recover disruptions.

Nonetheless, the implementation of BDA in cross-border SCRM is not that easy. Fragments of data between national systems, differences in data protection laws (e.g., GDPR in Europe, PIPL in China), a lack of interoperability, and the lack of trust between partners on the international level introduce major barriers (Ivanov et al., 2022). Such problems require a complex theoretical model that takes into consideration the facilitating and limiting factors of BDA within the international supply chain risk arena.

2.3 Theoretical Lenses

There are three complementary theoretical perspectives which are used in this paper.

Dynamic Capabilities Theory (DCT). According to Teece (2007, 2018), dynamic capabilities are the ability of the firm to sense opportunities and threats, capture value, and

alter resources and structures of the organisation in response to changing environments. Within the SCRM framework, BDA may be defined as the dynamic capability that allows companies to detect the risk indicators in the environment, leverage the risk reduction opportunities by means of data-driven decision-making, and redesign the supply chain networks whenever the threats are changing (Ambulkar et al., 2015; Bag et al., 2021).

Information processing theory (IPT). Galbraith (1974) assumes that organisational effectiveness is determined by the correlation between information processing requirements (established by task uncertainty) and information processing ability (established by organisational structure and technology). Environmental uncertainty, diversity in partners and complexity of coordination present a high information processing requirement to cross-border supply chains. BDA greatly expands the information processing bandwidth, which allows organisations to minimise the unpredictability process by transforming raw data into viable risk intelligence (Srinivasan & Swink, 2018).

Relational View of the Firm. According to Dyer and Singh (1998), inter-firm relationships create competitive advantage where the relationships provide relation-specific investments, sharing of knowledge, complementary resources, and good governance. In international supply chain, the information exchange among suppliers can enhance shared risk because digital platforms enable partners to access information, and trust and contractual relationships are required. The relational perspective then provides the understanding of the way in which the BDA-enabled risk management surpasses the limits of the individual firm and extends to the larger supply network (Scholten & Schilder, 2015; Kahkonen et al., 2023).

An Integrative theoretical Framework.
Based on the above theoretical frameworks, the section below provides an integrative framework (see Figure 1, in the description below) mapping BDA capabilities on the four stages of cross-border SCRM: (1) Risk Identification, (2) Risk Assessment, (3) Risk Mitigation, and (4) Risk Monitoring. The framework also includes three situational moderators, which are data governance quality, institutional distance, and digital infrastructure maturity.

Table 1: Integrative Framework - Big Data Analytics and Cross-Border Supply Chain Risk Management

Layer	Component	Theoretical Basis
Core Process	Risk Identification → Risk Assessment → Risk Mitigation → Risk Monitoring	SCRM lifecycle (Ho et al., 2015)
BDA Capabilities	Data acquisition & integration; Predictive & prescriptive analytics; Real-time dashboards; AI-driven anomaly detection	DCT (sensing, seizing, transforming); IPT (information processing capacity)
Relational Mechanisms	Inter-firm data sharing; Collaborative risk platforms; Trust and contractual governance	Relational View (Dyer & Singh, 1998)
Moderators	Data governance quality; Institutional distance; Digital infrastructure maturity	Institutional theory; DCT

3.1 BDA and Risk Identification

Risk identification is the process of identifying uncertainties that are likely to happen before they become real disturbance. Conventional approaches are based on historical databases of incidents and auditing suppliers and expert judgement, which are restrictive in nature regarding the scope and timeliness (Baryannis et al., 2019). BDA changes the way risk is identified by facilitating the processing of large and heterogeneous streams of data in close real-time.

In the case of cross-border supply chains, risk identification based on BDA can include: (a) automated scanning of world news streams, social media, and regulatory announcements using natural language processing (NLP) to identify early warning signs of political instability, labour strike, or changes in regulation in supplier countries (Fan et al., 2023); (b) satellite imagery to check on physical infrastructure, port congestions and environmental risks in logistics routes (Ivanov et al., 2022); (c) network analysis of the relationship between suppliers and sub suppliers toidentify hidden dependencies and concentration risks in multi-tier supply chains (Brintrup et al., 2020); and (d) integration of customs and trade finance data to detect patterns indicative of financial distress among international partners.

In the view of DCT, BDA improves the sensing ability of the firm by broadening the extent and rate of environmental scanning. BDA lessens the distance in information processing demands generated by cross-border uncertainty and information processing ability of the firm in IPT.

Proposition 1: Companies of higher BDA competencies will be found to exhibit a higher level of cross-border supply chain risk identification, earlier identification of risks, greater coverage of risk types, and multi-level visibility.

3.2 BDA and Risk Assessment

Risk assessment entails the estimation of the probability and the potential effect of the risks recognised to prioritise risk responses. Risk evaluation in cross-border systems is complicated by the lack of data in some jurisdictions and the inability to measure geopolitical and regulatory risks alongside the non-linear transmission of disruptions in global networks (Hosseini et al., 2019).

BDA augments risk assessment in a range of manners: (a) probabilistic risk forecasting of particular suppliers, routes, or regions can be done by using predictive analytics, including machine learning models trained on past disruption data, macroeconomic variables, and operational predictors (Baryannis et al., 2019); (b) disruption scenarios can be simulated and their impacts on cross-border supply chains can be calculated using simulation and digital twin technologies, fed by big data streams (Ivanov & Dolgui, 2021); and (c) sentiment analysis of

The dynamic capabilities theory describes how BDA helps to seize the capacity and opportunity to make informed decisions regarding resource allocation and strategic positioning on the basis of strict risk assessment. The theory of information processing reiterates the idea that the analytical process of raw data into risk intelligence increases the level of uncertainty in the decision-making process.

Proposition 2: BDA capability also increases the effectiveness and completeness of cross-border supply chain risk assessment with probabilistic modelling, scenario simulation and integrating a variety of risk signals.

3.3 BDA and Risk Mitigation

Risk mitigation entails the plans and measures put in place to minimize the risk or consequence of supply chain disruptions. The most frequent ones are supplier and logistics route diversification, inventory buffering, risk transfer in the form of a contract, and the establishment of contingency plans (Ho et al., 2015). Mitigation decisions in a cross-border situation are complex due to trade-offs between cost-efficiency and resilience, limitations related to regulatory sourcing options, and the complexity of coordination that is inherent in global networks (Belhadi et al., 2022).

BDA can help reduce the risk in a variety of ways: (a) prescriptive analytics can be used to suggest the best sourcing diversification strategies, comparing alternative suppliers in various risk and performance dimensions at once (Nguyen et al., 2021); (b) real-time data on inventory positions, demand trends, and logistics capacity across the global network may be used to dynamically rebalance stock and production as new threats appear (Dubey et al., 2021); (c) blockchain-based big data platforms can improve traceability and compliance monitoring, reducing the risk of regulatory violations in cross-border transactions (Saberi et al., 2019; Kshetri, 2021); and (d) advanced optimization algorithms can redesign logistics networks to build in redundancy while minimizing cost penalties.

Relationally, cross-border supply chains mitigation can be a matter of inter-firm cooperation. The collective mitigation efficacy can be enhanced by BDA platforms that facilitate secure and interoperable data sharing among international partners, including the joint risk dashboards, and joint demand-supply planning tools (Scholten and Schilder, 2015). The relational perspective emphasizes that relational rents of such investments on the dissemination of data depend on trust, complementary capabilities, as well as proper governance systems (Kahkonen et al., 2023).

Proposition 3: BDA capability increases the mitigation of cross-border supply chain risk through prescriptive decision support, dynamic network reconfiguration, and improvement in traceability, and this is further increased by inter-firm data sharing and collaborative governance.

3.4 BDA and Risk Monitoring

Risk monitoring is a process of constant monitoring of the supply chain environment and performance of mitigation strategies. The pace and uncertainties of risk events that can be observed in cross-border environment require real-time and multi-domain monitoring systems (Ivanov et al., 2022).

BDA aids in monitoring risk by: (a) real-time dashboards, which collect data on all IoT sensors, logistics tracking and financial markets, and news feeds in real-time to build combined risk indices (Wamba et al., 2020); (b) anomaly detection algorithms (e.g., deep learning) to identify non-conformance to a typical pattern of supply chain operations, indicating the existence of a risk (e.g., unusual shipment delays, a sudden increase (or decrease) in the order volume, or unusual financial transactions) (Fan et al2023); (c) control tower architectures that provide end-to-end visibility across the global supply network, enabling risk managers to track the status and risk exposure of every node and link in near real-time (Ivanov, 2020); and (d) automated alert systems that trigger escalation protocols when predefined risk thresholds are breached.

The dynamic capabilities theory views the constant monitoring as part of transforming capability which is the continuous recalibration of the organizational processes and structures based on environmental feedback. Information processing theory highlights continuous

monitoring to ensure a feedback connection between the organization and the environment so that alignment can be maintained in a situation of prevalent uncertainty.

Proposition 4: BDA capability will improve continuity and responsiveness of cross-border supply chain risk monitoring, which will allow real-time visibility, automated anomaly detection, and more rapid response to developing risks.

4. Moderating Conditions

BDA is not effective across the board in cross-border SCRM, and its success depends on critical contextual factors.

4.1 Data Governance Quality

Data governance refers to the policies, standard, and organizational designs that control the quality of data, security, privacy and ethical utilization of information (Abraham et al., 2019). Data governance plays a critical role in cross-border supply chains since data is sent in and out of jurisdictions that have different legal provisions. The General Data Protection Regulation (GDPR) of the European Union, the Personal Information Protection Law (PIPL) of China, and national standards developed differently in data localization which cause a fragmented regulatory environment, which may hinder cross-border integration of data (Kshetri, 2021).

The quality of data governance that includes a clear ownership of data, a uniform format of data, high security measures, and regulatory control mechanisms improves the trustworthiness and utility of big data in risk management. On the other hand, the lack of good data governance results in poor data quality, legal penalties, and lack of trust which hold the potential of BDA back (Dubey et al., 2021).

Proposition 5: Data governance quality mediated the positive impact of BDA capability on cross-border SCRM effectiveness, and firms that have a high data governance quality will achieve higher benefits in risk management of their BDA investments.

4.2 Institutional Distance

The institutional distance is the disparity in the regulatory, normative, and cognitive institutional settings of the countries within which the partners of supply chain business exist (Kostova & Zaheer, 1999; Xu & Shenkar, 2002). The existence of more institutional distance poses difficulties to cross-border data sharing since partners will have diverse legal frameworks, business segments, and cultural demands in terms of transparency and cooperation (Belhadi et al., 2022).

Institutional distance may not only augment the necessity to BDA (due to the increased information asymmetry) it may also reduce its performance (since it becomes harder to combine data, partner with other companies). The implication of this dual effect is that there is a complicated moderating relationship.

Proposition 6: There is a relationship between BDA capability and cross-border SCRM effectiveness that is mediated by institutional distance between supply chain partners. As much as larger institutional distance enhances the possible applicability of BDA to risk identification, it diminishes the efficacy of BDA-driven inter-firm data dissemination and mutual risk management.

4.3 Maturity of Digital infrastructure.

The efficiency of BDA in transnational SCRM is determined by the digital infrastructure of all the supply chain nodes including communication networks, cloud computing environments, IoT sensor implementation, and digital literacy of supply chains staff (Bag et al., 2021). In most of the developing and emerging economies that are manufacturing or sourcing centres of global supply chains, digital infrastructure might not be well-developed, which restricts the creation and the dissemination of data required to operate BDA-based risk management (Kshetri, 2021).

Proposition 7: The positive relationship between BDA capability and cross-border SCRM efficacy is positively mediated by the digital infrastructure maturity of the host countries of supply chains; those companies that are in the supply chains with more developed digital infrastructure will experience more benefits of risk management through BDA.

Discussion

5.1 Theoretical Contributions

The contributions that this paper can make to the theoretical knowledge about BDA and cross-border SCRM are the following.

To begin with, the paper offers a multi-theoretical basis of the multifaceted character of BDA-driven risk management through the introduction of dynamic capabilities theory, information processing theory, and the relational view. DCT describes how BDA empowers firms to be sensitive, capture, and change in response to cross-border risks. IPT describes the informational processes by which BDA alleviates uncertainty. The relational perspective describes the amplification of risk management in the supply network through the exchange of inter-firm data. The explanatory model presented by this theoretical triangulation is a much richer one than any individual theory could have done.

Second, the paper contributes to the literature of SCRM by mapping, in a systematic manner, BDA capabilities onto the various phases of the risk management cycle identification, assessment, mitigation, and monitoring in particular situation of cross-border supply chains. Whereas the previous literature has admitted that BDA has potential in terms of SCRM (generally speaking) (Baryannis et al., 2019; Ivanov et al., 2022), this paper offers a more explicit and step-by-step theoretical description of the processes.

Third, the contingent nature of BDA effectiveness is met by the inclusion of moderating variables which are data governance quality, institutional distance, and maturity of data digital infrastructures. This contingency approach addresses literature requests to theoretically be more context-sensitive when modelling the issue of big data in supply chain management (Dubey et al., 2021; Belhadi et al., 2022).

Fourth, the paper addresses the increasing urgency of cross-border supply chain disruption, as manifested by the COVID-19 pandemic and the recent geopolitical conflicts, with a theoretical architecture, which can be used to inform both academic research and intervention in a time characterized by increased global supply chain vulnerability (Ivanov & Dolgui, 2021).

5.2 Managerial Implications

In addition to the theoretical contributions, the framework constructed within the frame of this current paper provides an excellent amount of practical advice to supply chain managers who have to work with the challenges of cross-border risk management in a more data-driven environment.

The first step to realizing the full potential of cross-border SCRM on the basis of big data analytics should be the investment in full-scale infrastructure of data acquisition that will allow seamlessly integrating internal operational data (procurement records, inventory levels, and logistics performance metrics) with the external risk indicators (geopolitical developments, environmental hazards, financial market fluctuations, and regulatory changes) in all the jurisdictions in question. Quality of risk intelligence as generated by analytics really depends on the breadth and depth of the collected data, and companies that only pull data within their internal or domestic borders will invariably have blind spots in their cross-border risk environment.

It is also vital to create more sophisticated analytical functions, which are specific to cross-border risk environment. This involves instead of descriptive analytics going into predictive and prescriptive analytics, which can predict the likelihood of disruptions, model the cascading effects of global networks, and prescribe the best mitigation actions. Machine learning, artificial intelligence-based anomaly detection, and digital twin technologies should be given priority because such tools will allow the proactive and future-thinking risk management that the traditional methods can neither provide.

Nevertheless, one cannot be analytically sophisticated without a strong data governance base. The leaders of supply chain should have coherent and enforceable policies that regulate the quality of data, security, privacy, and compliance with regulations of all the jurisdictions the supply chain is operating in. Since the international regulations on data protection are often highly fragmented and often even contradictory, such as the GDPR in the European Union and the PIPL in China, among others, companies should implement an effective framework of governance which is both strict and flexible, allowing cross-border data flows to be legally acceptable yet at the same time allowing the effective integration of analytics as a means of efficient risk management.

The relational aspect of SCRM based on BDA is worth the special managerial focus. Risks in cross-border supply chain cannot be solved by a single firm; it needs the supply chain visibility and coordinated response of supply network. It is on this basis that managers ought to actively encourage relationships of data-sharing between international supply chain partners, which are buttressed by trust-building tools, interoperable digital systems, as well as clear governance agreements articulating ownership of data, access rights and limit of use. Joint risk dashboards shared early warning mechanisms and joint scenario planning exercises are some of the practical expressions of such a relational approach and allowpartners to share a common feeling and action in the response to threats that no single organization can identify or respond to.

Moreover, managers should be keen to understand and respond to digital infrastructure gaps that could be existing in between supply chain partners, especially those in developing or emerging economies. In the case when partners do not have sufficient digital connectivity, an implementation of IoT sensors, a connection to cloud computing, or analytic skills, the data streams that are required to support risk management led by BDA will be incomplete or unreliable. To respond to these gaps, firms have the option to focus on supplier development programmes, technology transfer, or strategic sourcing decisions that would consider digital maturity as one of the factors of partner selection along with traditional considerations of cost and quality.

Lastly, the framework highlights the urgency of implementing an ongoing monitoring stance and not using a periodical risk assessment. The speed and the uncertainties of cross-border disruptions require real-time monitoring functions, which take the form of built-in

dashboards, automated alerting, and AI-enhanced anomaly detection, which keeps risk managers always in the know of the changing threat environment. This strategic move by integrating continuous monitoring into organizational bloodstream of supply chain management firms can switch their position between reactive mode where disruptions are responded to when they occur and adopt an active and proactive position where they can intervene timely to prevent risks evolving into damaging crises.

Collectively, these managerial imperatives emphasize that the effective implementation of big data analytics to manage cross-border supply chain risks is not only a technological task, but also a form of strategic organization change where investments in data infrastructure, analytical expertise, governance systems, and collaborative partnerships and organizational culture of constant vigilance are coordinated to remain the same.

References

Abraham, R., Schneider, J., & vom Brocke, J. (2019). Data governance: A conceptual framework, structured review, and research agenda. International Journal of Information Management, 49, 424–438. https://doi.org/10.1016/j.ijinfomgt.2019.07.008

Ambulkar, S., Blackhurst, J., & Grawe, S. (2015). Firm's resilience to supply chain disruptions: Scale development and empirical examination. Journal of Operations Management, 33–34, 111–122. https://doi.org/10.1016/j.jom.2014.11.002

Arunachalam, D., Kumar, N., & Kawalek, J. P. (2018). Understanding big data analytics capabilities in supply chain management: Unravelling the issues, challenges and implications for practice. Transportation Research Part E: Logistics and Transportation Review, 114, 416–436. https://doi.org/10.1016/j.tre.2017.04.001

Bag, S., Gupta, S., Kumar, S., & Sivarajah, U. (2021). Role of technological dimensions of green supply chain management practices on firm performance. Journal of Enterprise Information Management, 34(1), 1–27. https://doi.org/10.1108/JEIM-10-2019-0324

Baryannis, G., Validi, S., Dani, S., & Antoniou, G. (2019). Supply chain risk management and artificial intelligence: State of the art and future research directions. International Journal of Production Research, 57(7), 2179–2202. https://doi.org/10.1080/00207543.2018.1530476

Belhadi, A., Kamble, S., Fosso Wamba, S., & Queiroz, M. M. (2022). Building supply-chain resilience: An artificial intelligence-based technique and decision-making framework. International Journal of Production Research, 60(14), 4487–4507. https://doi.org/10.1080/00207543.2021.1950935

Brintrup, A., Pak, J., Ratiney, D., Pearce, T., Wichmann, P., Woodall, P., & McFarlane, D. (2020). Supply chain data analytics for predicting supplier disruptions: A case study in complex asset manufacturing. International Journal of Production Research, 58(11), 3330–3341. https://doi.org/10.1080/00207543.2019.1685705

Dubey, R., Gunasekaran, A., Childe, S. J., Fosso Wamba, S., Roubaud, D., &Foropon, C. (2021). Empirical investigation of data analytics capability and organizational

flexibility as complements to supply chain resilience. International Journal of Production Research, 59(1), 110–128. https://doi.org/10.1080/00207543.2019.1582882

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. Academy of Management Review, 23(4), 660–679. https://doi.org/10.5465/amr.1998.1255632

Fan, Y., Stevenson, M., & Li, F. (2023). Supplier-facing supply chain risk: A review of the literature and agenda for future research. International Journal of Operations & Production Management, 43(8), 1267–1307. https://doi.org/10.1108/IJOPM-09-2022-0586

Galbraith, J. R. (1974). Organization design: An information processing view. Interfaces, 4(3), 28–36. https://doi.org/10.1287/inte.4.3.28

Golan, M. S., Jernegan, L. H., & Linkov, I. (2020). Trends and applications of resilience analytics in supply chain modeling: Systematic literature review in the context of the COVID-19 pandemic. Environment Systems and Decisions, 40, 222–243. https://doi.org/10.1007/s10669-020-09777-w

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

Hosseini, S., Ivanov, D., &Dolgui, A. (2019). Review of quantitative methods for supply chain resilience analysis. Transportation Research Part E: Logistics and Transportation Review, 125, 285–307. https://doi.org/10.1016/j.tre.2019.03.001

Ivanov, D. (2020). Viable supply chain model: Integrating agility, resilience and sustainability perspectives—Lessons from and thinking beyond the COVID-19 pandemic. Annals of Operations Research, 319, 1411–1431. https://doi.org/10.1007/s10479-020-03640-6

Ivanov, D., &Dolgui, A. (2021). OR-methods for coping with the ripple effect in supply chains during COVID-19 pandemic: Managerial insights and research implications. International Journal of Production Economics, 232, 107921. https://doi.org/10.1016/j.ijpe.2020.107921

Ivanov, D., Dolgui, A., & Sokolov, B. (2022). Cloud supply chain: Integrating Industry 4.0 and digital platforms for supply chain resilience. International Journal of Production Research, 60(7), 2075–2093. https://doi.org/10.1016/j.tre.2022.102676

Kähkönen, A.-K., Evangelista, P., Hallikas, J., Immonen, M., &Lintukangas, K. (2023). COVID-19 as a trigger for dynamic capability development and supply chain resilience improvement. International Journal of Production Research, 61(8), 2696–2715. https://doi.org/10.1080/00207543.2022.2029611

Kostova, T., & Zaheer, S. (1999). Organizational legitimacy under conditions of complexity: The case of the multinational enterprise. Academy of Management Review, 24(1), 64–81. https://doi.org/10.5465/amr.1999.1580441

Kshetri, N. (2021). Blockchain and supply chain management. International Journal of Information Management, 60, 102397. https://doi.org/10.1016/j.ijinfomgt.2021.102397

Manuj, I., & Mentzer, J. T. (2008). Global supply chain risk management strategies. International Journal of Physical Distribution & Logistics Management, 38(3), 192–223. https://doi.org/10.1108/09600030810866986

Nguyen, T., Li, Z., Spiegler, V., Ieromonachou, P., & Lin, Y. (2021). Big data analytics in supply chain management: A state-of-the-art literature review. Computers & Operations Research, 98, 254–264. https://doi.org/10.1016/j.cor.2017.07.004

Saberi, S., Kouhizadeh, M., Sarkis, J., & Shen, L. (2019). Blockchain technology and its relationships to sustainable supply chain management. International Journal of Production Research, 57(7), 2117–2135. https://doi.org/10.1080/00207543.2018.1533261

Scholten, K., & Schilder, S. (2015). The role of collaboration in supply chain resilience. Supply Chain Management: An International Journal, 20(4), 471–484. https://doi.org/10.1108/SCM-11-2014-0386

Sharma, M., Luthra, S., Joshi, S., & Kumar, A. (2022). Accelerating retail supply chain performance against pandemic disruption: Adopting resilient strategies to mitigate the long-term effects. Journal of Enterprise Information Management, 35(6), 1844–1873. https://doi.org/10.1108/jeim-07-2020-0286

Srinivasan, R., & Swink, M. (2018). An investigation of visibility and flexibility as complements to supply chain analytics: An organizational information processing theory perspective. Production and Operations Management, 27(10), 1849–1867. https://doi.org/10.1111/poms.12746

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. Strategic Management Journal, 28(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J. (2018). Dynamic capabilities as (workable) management systems theory. Journal of Management & Organization, 24(3), 359–368. https://doi.org/10.1017/jmo.2017.75

Tushman, M. L., & Nadler, D. A. (1978). Information processing as an integrating concept in organizational design. Academy of Management Review, 3(3), 613–624. https://doi.org/10.5465/amr.1978.4305791

Wamba, S. F., Dubey, R., Gunasekaran, A., & Akter, S. (2020). The performance effects of big data analytics and supply chain ambidexterity: The moderating effect of environmental dynamism. International Journal of Production Economics, 222, 107498. https://doi.org/10.1016/j.ijpe.2019.09.019

Xu, D., & Shenkar, O. (2002). Institutional distance and the multinational enterprise. Academy of Management Review, 27(4), 608–618. https://doi.org/10.2307/4134406