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Article

Investigating the Impact of Information Sharing on Supply Chain Resilience

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Abstract: This study investigates the impact of information sharing on supply chain resilience by exploring the experiences and insights of supply chain professionals through qualitative research. Information sharing has become increasingly recognized as a vital component in enhancing the ability of supply chains to anticipate, respond to, and recover from disruptions. Through semi-structured interviews with 22 supply chain professionals across various industries, the study delves into the mechanisms through which information sharing influences supply chain resilience, the challenges faced, and the role of enabling factors such as technology and organizational culture. The findings reveal that effective information sharing enhances supply chain visibility, coordination, and adaptability. Enhanced visibility allows supply chain partners to monitor real-time operational data, facilitating early detection of potential disruptions. Improved coordination enables better alignment of activities, reducing inefficiencies and mitigating the bullwhip effect. Adaptability is bolstered through the timely exchange of information, allowing for rapid adjustments to changing conditions. However, the study also identifies significant barriers to effective information sharing, including concerns about data security, competitive advantage, and trust among partners. Trust and strong relationships emerge as critical factors for successful information sharing, highlighting the need to build and maintain trust to facilitate open communication. The role of technology is emphasized, with digital platforms, blockchain, and the Internet of Things (IoT) identified as key enablers of efficient and secure information exchange. The study concludes that fostering a supportive organizational culture and leadership commitment to transparency and collaboration, along with tailoring information-sharing strategies to specific supply chain contexts, is essential for enhancing supply chain resilience. This research contributes to the understanding of the impact of information sharing on supply chain resilience and provides practical insights for organizations aiming to strengthen their resilience in an increasingly complex global business environment.

Keywords: information sharing; supply chain resilience; visibility; coordination; adaptability; technology; trust

1. Introduction

In today's globalized economy, supply chain management has evolved into a critical strategic function for businesses across industries. With the increasing interconnectedness of markets, supply chains have become longer, more complex, and susceptible to various disruptions. These disruptions, ranging from natural disasters to geopolitical conflicts and pandemics, can have profound implications for the performance and sustainability of organizations. Consequently, there is a growing recognition of the need for supply chain resilience, defined as the ability to withstand and recover from disruptions while maintaining continuity of operations and delivering value to customers (Ponomarov & Holcomb, 2009). The importance of supply chain resilience has been underscored by recent events such as the COVID-19 pandemic, which exposed vulnerabilities in global supply chains and disrupted production and distribution networks worldwide (Ivanov, 2020). In response to such disruptions, organizations are increasingly focusing on building resilient supply chains capable of adapting to unforeseen challenges and uncertainties (Pettit et al., 2010). Supply chain resilience encompasses various dimensions, including robustness, flexibility, agility, and adaptability, which enable organizations to anticipate, prevent, and mitigate disruptions effectively (Ponomarov & Holcomb, 2009; Pettit et al., 2010). Among the factors contributing to supply chain resilience, information sharing has emerged as a crucial enabler. Information sharing involves the

exchange of relevant data, insights, and knowledge among supply chain partners to enhance visibility, coordination, and decision-making (Wang et al., 2016). Effective information sharing enables organizations to anticipate and respond proactively to disruptions by providing timely and accurate information about inventory levels, production capacities, transportation status, and demand fluctuations (Christopher & Peck, 2004). By sharing information, supply chain partners can collaborate more closely, identify potential risks, and develop contingency plans to mitigate disruptions (Ivanov & Dolgui, 2020). Despite the recognized importance of information sharing for supply chain resilience, research in this area remains limited, particularly from a qualitative perspective. Existing studies have predominantly focused on quantitative analyses of the relationship between information sharing and supply chain performance, overlooking the nuanced dynamics and contextual factors that influence information sharing practices (Liu et al., 2018). Qualitative research offers a valuable opportunity to delve deeper into the underlying mechanisms through which information sharing affects supply chain resilience and to explore the challenges and barriers encountered in implementing effective information sharing initiatives (Hsieh & Shannon, 2005). This qualitative study seeks to address this gap in the literature by investigating the impact of information sharing on supply chain resilience from the perspective of supply chain professionals and experts. By conducting in-depth interviews and thematic analysis, this research aims to uncover the complexities and nuances of information sharing practices within supply chains and their implications for resilience. Through rich qualitative data, this study will contribute to a deeper understanding of the role of information sharing in enhancing supply chain resilience and provide practical insights for organizations seeking to strengthen their resilience capabilities in an increasingly uncertain and volatile business environment. In summary, the remainder of this paper will proceed as follows: Section 2 provides a review of the literature on supply chain resilience and information sharing, highlighting the gaps and research questions that motivate this study. Section 3 outlines the research methodology, including data collection and analysis procedures. Section 4 presents the findings of the study, followed by a discussion of the implications for theory and practice in Section 5. Finally, Section 6 concludes the paper with a summary of key findings and suggestions for future research.

2. Literature Review

Supply chain resilience has garnered significant attention in recent years as organizations face an increasingly complex and uncertain global environment. Defined as the capability of a supply chain to resist, absorb, and recover from disruptive events (Sheffi & Rice, 2005), supply chain resilience is crucial for maintaining continuity of operations and minimizing the impact of disruptions on business performance. Research has identified multiple dimensions of resilience, including robustness, agility, flexibility, and adaptability, which collectively enable organizations to anticipate, respond to, and recover from supply chain disruptions (Ponomarov & Holcomb, 2009; Pettit et al., 2010). Information sharing is widely recognized as a key enabler of supply chain resilience. It involves the exchange of relevant data, insights, and knowledge among supply chain partners to enhance visibility, coordination, and decision-making processes (Wang et al., 2016). Effective information sharing facilitates the timely identification of potential risks and the development of strategies to mitigate disruptions (Christopher & Peck, 2004). The literature emphasizes that information sharing contributes to improved supply chain performance by reducing lead times, enhancing inventory management, and enabling more accurate demand forecasting (Cheng et al., 2016; Dubey et al., 2019). Moreover, information sharing supports collaborative planning and coordination among supply chain partners, fostering a proactive approach to managing disruptions (Sodhi & Tang, 2021). Recent studies have explored various facets of information sharing within the context of supply chain resilience. Ivanov and Dolgui (2020) highlight the role of information sharing in enhancing supply chain visibility, which is critical for anticipating disruptions and implementing effective response strategies. Similarly, Barratt and Oke (2007) suggest that information sharing enables better alignment of supply chain activities, reducing the bullwhip effect and enhancing overall supply chain agility. Li et al. (2021) emphasize that information sharing

supports the development of flexible supply chain networks, allowing organizations to reconfigure their supply chains quickly in response to disruptions. Despite the recognized importance of information sharing for supply chain resilience, several barriers and challenges hinder its effective implementation. One significant challenge is the reluctance of supply chain partners to share information due to concerns about data security, privacy, and competitive advantage (Zhou & Benton, 2007). Trust and commitment among supply chain partners are crucial for overcoming these barriers and fostering a collaborative information-sharing environment (Li & Lin, 2006). Moreover, the alignment of information systems and technologies across supply chain partners is essential to ensure seamless data exchange and integration (Cheng et al., 2016). However, discrepancies in technological capabilities and standards can pose obstacles to effective information sharing (Richey et al., 2021). The literature also underscores the importance of trust and relationships in facilitating information sharing for supply chain resilience. Trust is a fundamental element that influences the willingness of supply chain partners to share sensitive and valuable information (Fawcett et al., 2012). When trust is established, supply chain partners are more likely to engage in open and transparent communication, leading to enhanced coordination and collaboration (Nyaga et al., 2010). On the other hand, the lack of trust can result in information asymmetry and hinder the flow of critical information, compromising the ability to respond effectively to disruptions (Kembro & Näslund, 2014). In addition to trust, the quality of relationships between supply chain partners plays a significant role in facilitating information sharing. Strong and cooperative relationships provide a foundation for effective communication, joint problem-solving, and collaborative decision-making (Dyer & Singh, 1998). Relationship quality encompasses dimensions such as commitment, cooperation, and mutual understanding, which collectively contribute to the success of information-sharing initiatives (Cao & Zhang, 2011). Organizations that invest in building and maintaining high-quality relationships with their supply chain partners are better positioned to leverage information sharing for enhanced resilience (Wong et al., 2011). Information sharing for supply chain resilience is also influenced by organizational culture and leadership. Organizational culture shapes the attitudes and behaviors of employees toward information sharing, impacting their willingness to engage in collaborative practices (Hartmann & de Grahl, 2011). A culture that values transparency, openness, and collaboration is conducive to effective information sharing and fosters a proactive approach to managing disruptions (Gligor & Holcomb, 2012). Leadership plays a pivotal role in promoting a culture of information sharing by setting clear expectations, providing necessary resources, and encouraging collaboration across the supply chain (Blackhurst et al., 2011). The integration of advanced technologies and digital solutions has emerged as a critical enabler of information sharing for supply chain resilience. Technologies such as blockchain, the Internet of Things (IoT), and artificial intelligence (AI) offer new opportunities for enhancing data visibility, traceability, and real-time decision-making (Queiroz et al., 2020). Blockchain technology, for example, provides a secure and immutable platform for sharing information across supply chain partners, reducing the risk of data manipulation and enhancing trust (Saberli et al., 2019). IoT devices facilitate the continuous monitoring and exchange of data on the status of goods, inventory levels, and transportation conditions, enabling more responsive and adaptive supply chain operations (Ben-Daya et al., 2019). AI-powered analytics support predictive and prescriptive decision-making by analyzing large volumes of data to identify potential disruptions and optimize response strategies (Ting & Cheng, 2020). However, the adoption of advanced technologies for information sharing also presents challenges. These include the high costs of implementation, the need for technical expertise, and concerns about data privacy and cybersecurity (Jabbarzadeh et al., 2020). Organizations must carefully evaluate the benefits and risks associated with technology adoption and develop strategies to address potential challenges to realize the full potential of these technologies for enhancing supply chain resilience (Wang et al., 2021). The role of information sharing in supply chain resilience is also influenced by external factors such as regulatory frameworks and industry standards. Compliance with regulations related to data privacy, security, and trade can impact the scope and extent of information sharing among supply chain partners (Goel & Gupta, 2017). Industry standards and best practices provide guidelines for data exchange, interoperability, and communication protocols,

facilitating more effective information sharing and collaboration (Fugate et al., 2006). Organizations must navigate these external factors and align their information-sharing practices with relevant regulations and standards to ensure compliance and optimize supply chain resilience (Parast & Adams, 2020). While the literature predominantly focuses on the benefits of information sharing for supply chain resilience, it is essential to recognize that the effectiveness of information sharing depends on the context and characteristics of the supply chain. Factors such as the nature of the supply chain, the complexity of the products, and the dynamics of the industry influence the relevance and impact of information-sharing practices (Mason-Jones & Towill, 1999). For example, information-sharing requirements in fast-moving consumer goods (FMCG) supply chains may differ from those in high-tech or healthcare supply chains (Dubey et al., 2019). Therefore, a contextual understanding of supply chain characteristics is necessary to tailor information-sharing strategies to specific supply chain contexts and enhance their effectiveness (Wong et al., 2015). Recent research has extended the understanding of information sharing in supply chain resilience by examining its interplay with other organizational and strategic factors. Studies have explored the integration of information sharing with sustainability (Emon & Khan, 2023), entrepreneurship (Emon & Nipa, 2024), emotional intelligence (Emon et al., 2024), marketing (Rahman et al., 2024), and supplier relationship management (Emon et al., 2024) to provide a holistic view of how information-sharing practices contribute to organizational resilience and competitive advantage. This integrative approach highlights the interconnectedness of information sharing with various organizational capabilities and underscores the need for a comprehensive strategy to leverage information sharing for resilience. In conclusion, the literature on information sharing and supply chain resilience underscores the critical role of information sharing in enhancing the ability of supply chains to withstand and recover from disruptions. Effective information sharing facilitates improved visibility, coordination, and decision-making, contributing to enhanced supply chain performance and resilience. Trust, relationships, organizational culture, and leadership are key factors that influence the success of information-sharing initiatives. The integration of advanced technologies and alignment with regulatory frameworks further supports the effectiveness of information sharing. However, the context-specific nature of supply chains necessitates tailored information-sharing strategies to address unique challenges and opportunities. By addressing the barriers and leveraging the enablers of information sharing, organizations can strengthen their supply chain resilience and navigate the complexities of the global business environment more effectively.

3. Research Methodology

The research adopted a qualitative approach to explore the impact of information sharing on supply chain resilience, providing an in-depth understanding of the phenomena through the perspectives of supply chain professionals and experts. This approach was chosen to capture the nuanced dynamics and contextual factors influencing information-sharing practices and their implications for supply chain resilience. The research design involved semi-structured interviews as the primary data collection method, allowing for the exploration of participants' experiences, perceptions, and insights in a flexible and adaptive manner. Participants for the study were selected using purposive sampling to ensure a diverse representation of supply chain roles, industries, and geographical regions. This sampling method enabled the inclusion of individuals with relevant expertise and experience in supply chain management and information sharing. The recruitment process involved identifying potential participants through professional networks, industry associations, and LinkedIn. An initial pool of 40 candidates was contacted via email, explaining the study's purpose and inviting them to participate. Ultimately, 22 supply chain professionals agreed to participate, representing various sectors such as manufacturing, retail, logistics, and technology. The interview guide was developed based on a review of the literature and aimed to explore key themes related to information sharing and supply chain resilience. Questions were designed to probe participants' experiences with information sharing, the challenges and barriers they encountered, the role of technology and organizational culture, and the perceived impact on supply chain resilience. The semi-structured format allowed for follow-up questions and the exploration of emerging themes,

providing flexibility to delve deeper into specific topics of interest as they arose during the interviews. Interviews were conducted via video conferencing platforms such as Zoom and Microsoft Teams, which facilitated participation from geographically dispersed respondents and accommodated their schedules. Each interview lasted approximately 60 to 90 minutes and was recorded with the participants' consent. Verbatim transcripts of the interviews were produced to ensure accurate capture of the data. Participants were assured of confidentiality, and their identities were anonymized in the transcripts and any subsequent reporting of the findings. Data analysis was carried out using thematic analysis, a method well-suited for identifying, analyzing, and reporting patterns (themes) within qualitative data. The process began with familiarization, where the researchers immersed themselves in the data by reading and re-reading the transcripts. Initial codes were generated systematically across the dataset to identify meaningful units of information related to information sharing and supply chain resilience. These codes were then organized into potential themes, which were reviewed and refined iteratively to ensure they accurately captured the key aspects of the data. NVivo software was utilized to assist with coding and organizing the data, providing a structured framework for analysis and enabling the researchers to manage and explore the large volume of qualitative data effectively. To enhance the validity and reliability of the findings, the study employed several strategies. Triangulation was used to cross-verify the data by comparing insights from different participants and identifying convergent and divergent perspectives. Member checking involved sharing preliminary findings with a subset of participants to obtain their feedback and confirm the accuracy of the interpretations. Additionally, peer debriefing sessions were conducted with colleagues and experts in qualitative research to discuss and refine the themes and interpretations, providing an external perspective and enhancing the robustness of the analysis. Ethical considerations were paramount throughout the research process. The study adhered to ethical guidelines for research involving human participants, including obtaining informed consent, ensuring confidentiality, and protecting participants' rights and well-being. An ethics approval was obtained from the institutional review board prior to data collection, and participants were provided with detailed information about the study's purpose, procedures, and their right to withdraw at any time without consequence. The methodology employed in this study provided a comprehensive and nuanced understanding of the impact of information sharing on supply chain resilience. By capturing the perspectives of supply chain professionals and experts through in-depth interviews and employing rigorous data analysis techniques, the research contributed valuable insights into the mechanisms and contextual factors that influence information sharing practices and their implications for enhancing supply chain resilience.

4. Results and Findings

The analysis of the interview data revealed several key findings regarding the impact of information sharing on supply chain resilience. Participants unanimously highlighted the critical role of information sharing in enhancing the visibility, coordination, and adaptability of supply chains, which collectively contribute to resilience. The themes that emerged from the interviews provided insights into the mechanisms through which information sharing influences supply chain resilience, the barriers and challenges encountered, and the role of technology and organizational factors in facilitating effective information sharing. Participants consistently emphasized that information sharing significantly enhances supply chain visibility, which is crucial for anticipating and responding to disruptions. Many interviewees noted that sharing information about inventory levels, production schedules, transportation status, and demand forecasts allowed supply chain partners to gain a comprehensive understanding of the supply chain's status. This visibility enabled more accurate and timely decision-making, particularly in identifying potential risks and developing proactive measures to mitigate disruptions. For instance, several participants cited examples where real-time data sharing about transportation delays or inventory shortages allowed them to reroute shipments or adjust production plans, minimizing the impact of disruptions on operations and customer service. Coordination among supply chain partners was another prominent theme related to the benefits of information sharing. Participants described how information sharing facilitated

better alignment of activities across the supply chain, reducing inefficiencies and enhancing collaboration. This improved coordination was particularly evident in joint planning efforts, where shared information enabled synchronized production and distribution schedules, optimized inventory levels, and reduced the bullwhip effect. For example, one respondent from the retail sector highlighted that regular information exchanges with suppliers about upcoming promotions and sales forecasts allowed them to adjust order quantities and production plans in advance, ensuring product availability and preventing stockouts during peak demand periods. Adaptability emerged as a key dimension of supply chain resilience supported by information sharing. Interviewees explained that the ability to adapt to changing circumstances, such as shifts in demand or disruptions in supply, was enhanced through the timely exchange of information. Participants noted that information sharing enabled rapid adjustments to production schedules, sourcing strategies, and logistics arrangements in response to unforeseen events. A participant from the manufacturing industry provided an illustrative example where information sharing about a sudden spike in demand for a particular product allowed them to quickly ramp up production and secure additional raw materials from alternative suppliers, thereby avoiding potential supply chain disruptions and meeting customer expectations. Despite the recognized benefits, participants also identified several barriers and challenges to effective information sharing. A recurring theme was the reluctance of supply chain partners to share sensitive or proprietary information due to concerns about data security, competitive advantage, and trust. Many interviewees mentioned instances where partners were hesitant to provide detailed information about their operations or demand forecasts, fearing that such information could be misused or exploited by competitors. This reluctance often led to information asymmetry, where certain partners had access to more comprehensive and accurate data than others, creating imbalances in decision-making capabilities and coordination efforts. Trust and relationship quality between supply chain partners were frequently cited as critical factors influencing the success of information-sharing initiatives. Participants emphasized that trust is a foundational element that determines the willingness of partners to engage in open and transparent communication. Trust issues, whether related to past negative experiences or concerns about the misuse of information, were significant barriers to effective information sharing. Conversely, strong and cooperative relationships characterized by mutual understanding, commitment, and shared goals facilitated more effective information exchange and collaboration. One respondent from the logistics sector highlighted that long-term relationships with key suppliers, built on trust and mutual respect, enabled seamless information sharing and joint problem-solving during disruptions. The role of technology in facilitating information sharing was another prominent theme in the findings. Participants discussed how advanced technologies such as digital platforms, blockchain, and the Internet of Things (IoT) supported more efficient and secure information exchange. Digital platforms provided centralized systems for data sharing, enabling real-time updates and communication among supply chain partners. Blockchain technology was highlighted for its potential to enhance data security and transparency, addressing concerns about data manipulation and trust. IoT devices facilitated continuous monitoring and data collection on various aspects of the supply chain, such as inventory levels, transportation conditions, and equipment status, providing valuable insights for decision-making. However, several interviewees also mentioned challenges related to the adoption of these technologies, including high implementation costs, technical complexities, and integration issues with existing systems. Organizational culture and leadership were identified as influential factors in shaping information-sharing practices. Participants noted that a culture that values transparency, openness, and collaboration is conducive to effective information sharing. Organizations that fostered such a culture encouraged employees to share information freely and engage in collaborative problem-solving. Leadership played a critical role in promoting a culture of information sharing by setting clear expectations, providing necessary resources, and championing initiatives that supported data exchange and coordination. One respondent from the technology sector described how their organization's leadership actively promoted a culture of transparency and continuous improvement, which facilitated open communication and effective information sharing across the supply chain. The analysis also revealed that the effectiveness of information sharing in

enhancing supply chain resilience varied depending on the context and characteristics of the supply chain. Participants from different industries reported differing information-sharing needs and challenges. For instance, respondents from the fast-moving consumer goods (FMCG) sector emphasized the importance of real-time data sharing for managing high-volume, time-sensitive operations, whereas participants from the high-tech industry highlighted the need for detailed information about component availability and lead times to manage complex supply chains with longer planning horizons. This variability underscored the importance of tailoring information-sharing strategies to the specific requirements and dynamics of the supply chain to maximize their impact on resilience. Additionally, the findings indicated that integrating information sharing with other organizational capabilities, such as risk management and strategic planning, further enhanced supply chain resilience. Participants discussed how combining information-sharing practices with risk assessment and mitigation strategies enabled a more comprehensive approach to managing disruptions. For example, one interviewee described how their organization integrated information sharing with a formal risk management framework, allowing them to identify potential risks, evaluate their impact, and develop targeted contingency plans based on real-time data. This integration provided a structured and proactive approach to resilience, leveraging the strengths of both information sharing and risk management. In conclusion, the findings of this study highlighted the critical role of information sharing in enhancing supply chain resilience by improving visibility, coordination, and adaptability. Trust, relationship quality, technology, and organizational culture emerged as key factors influencing the effectiveness of information-sharing practices. Barriers such as concerns about data security and trust issues posed significant challenges, while advanced technologies and supportive organizational cultures facilitated more efficient and secure information exchange. The variability in information-sharing needs and challenges across different supply chain contexts emphasized the importance of context-specific strategies. Integrating information sharing with other organizational capabilities, such as risk management, further enhanced supply chain resilience, providing a holistic approach to managing disruptions and ensuring continuity of operations.

5. Discussion

The findings of this study underscore the pivotal role of information sharing in fostering supply chain resilience. By providing enhanced visibility, coordination, and adaptability, effective information sharing enables supply chain partners to anticipate and respond to disruptions more efficiently. This discussion integrates the study's findings with existing literature, exploring their implications for theory and practice, and highlighting areas for future research. The enhancement of supply chain visibility through information sharing, as identified in this study, aligns with prior research emphasizing its importance in disruption management. Participants noted that sharing real-time data about inventory, production, and transportation allowed them to identify potential risks and make informed decisions swiftly, thereby reducing the impact of disruptions. This observation supports the work of Christopher and Peck (2004), who argue that visibility is a critical component of supply chain resilience, enabling proactive risk management. Furthermore, this finding corroborates Ivanov and Dolgui's (2020) assertion that information sharing enhances supply chain visibility, leading to more effective disruption response strategies. Coordination among supply chain partners emerged as a significant benefit of information sharing, facilitating synchronized activities and reducing inefficiencies. The study participants highlighted how information sharing allowed for better alignment in planning and execution, reducing the bullwhip effect and optimizing inventory levels. This result echoes the findings of Barratt and Oke (2007), who suggest that information sharing improves supply chain coordination, leading to enhanced performance. Additionally, the observed reduction in the bullwhip effect due to information sharing is consistent with the insights of Lee et al. (1997), who emphasize the role of information sharing in mitigating demand variability amplification. Adaptability was another crucial aspect of supply chain resilience supported by information sharing, as participants frequently mentioned the ability to adjust quickly to changing circumstances. This adaptability facilitated by timely information exchange allowed for rapid

modifications in production schedules, sourcing strategies, and logistics arrangements. This observation resonates with the concept of supply chain agility discussed by Yusuf et al. (2004), who highlight that agility, supported by real-time information, enables supply chains to respond effectively to dynamic market conditions and disruptions. The study identified several barriers to effective information sharing, including concerns about data security, competitive advantage, and trust issues among supply chain partners. These challenges reflect the findings of Zhou and Benton (2007), who note that reluctance to share sensitive information due to competitive concerns is a significant obstacle in supply chain collaboration. The emphasis on trust and relationship quality as critical factors influencing information sharing aligns with the work of Fawcett et al. (2012) and Nyaga et al. (2010), who argue that trust is essential for fostering open communication and effective collaboration in supply chains. The findings underscore the importance of building and maintaining trust and strong relationships to overcome reluctance and facilitate information sharing. Technology's role in enabling information sharing was highlighted by participants, with digital platforms, blockchain, and IoT identified as key enablers of efficient and secure data exchange. This finding is consistent with the literature on digital supply chain technologies, where Queiroz et al. (2020) and Saberi et al. (2019) discuss the potential of blockchain and IoT to enhance data transparency, traceability, and real-time decision-making. The challenges associated with technology adoption, such as high costs and integration issues, reflect the concerns raised by Jabbarzadeh et al. (2020) and Wang et al. (2021), emphasizing the need for careful evaluation and strategic implementation of technologies to maximize their benefits for information sharing. Organizational culture and leadership were identified as influential factors shaping information-sharing practices. Participants noted that a culture valuing transparency and collaboration, supported by proactive leadership, facilitated effective information sharing. This observation aligns with the work of Hartmann and de Grahl (2011) and Blackhurst et al. (2011), who highlight the role of organizational culture and leadership in promoting information sharing and collaboration within supply chains. The findings suggest that fostering a supportive organizational culture and leadership commitment to transparency and collaboration is crucial for successful information-sharing initiatives. The variability in information-sharing needs and challenges across different supply chain contexts highlighted in this study underscores the importance of context-specific strategies. Participants from different industries reported differing requirements for information sharing, reflecting the diversity in supply chain characteristics and dynamics. This observation supports the argument by Wong et al. (2015) and Dubey et al. (2019) that supply chain strategies, including information sharing, must be tailored to the specific context and characteristics of the supply chain to be effective. Integrating information sharing with other organizational capabilities, such as risk management and strategic planning, was identified as enhancing supply chain resilience. Participants discussed how combining information-sharing practices with formal risk management frameworks enabled a more comprehensive approach to managing disruptions. This finding aligns with the integrative perspective proposed by Ponomarov and Holcomb (2009) and Parast and Adams (2020), who emphasize that combining information sharing with risk management and strategic capabilities provides a holistic approach to enhancing supply chain resilience. In conclusion, this study contributes to the understanding of the role of information sharing in enhancing supply chain resilience by providing empirical insights into its benefits, barriers, and enabling factors. The findings highlight the critical role of visibility, coordination, and adaptability facilitated by information sharing in managing disruptions effectively. Trust, relationship quality, technology, organizational culture, and context-specific strategies are crucial for successful information sharing. Integrating information sharing with other organizational capabilities provides a comprehensive approach to resilience. Future research could further explore the contextual factors influencing information-sharing practices and the impact of emerging technologies on supply chain resilience, providing deeper insights into optimizing information-sharing strategies for different supply chain contexts.

6. Conclusion

This study has examined the critical role of information sharing in enhancing supply chain resilience through a qualitative exploration of supply chain professionals' experiences and insights. The findings provide a comprehensive understanding of how information sharing contributes to improved visibility, coordination, and adaptability, enabling supply chains to anticipate and respond effectively to disruptions. The study underscores that effective information sharing allows supply chain partners to gain real-time insights into various operational aspects, facilitating timely decision-making and proactive disruption management. Key insights from the study highlight that information sharing enhances supply chain visibility, enabling partners to monitor inventory levels, production schedules, and transportation statuses, which is essential for anticipating potential risks and disruptions. Enhanced coordination, supported by information sharing, leads to better alignment of activities across the supply chain, reducing inefficiencies and mitigating the bullwhip effect. Additionally, the study reveals that information sharing fosters adaptability, allowing supply chains to quickly adjust to changing conditions by modifying production plans, sourcing strategies, and logistics arrangements based on real-time data. Despite its benefits, the study identifies significant barriers to effective information sharing, including concerns about data security, competitive advantage, and trust issues among supply chain partners. These challenges underscore the need for building trust and fostering strong relationships to facilitate open and transparent communication. The study also highlights the crucial role of technology in enabling efficient and secure information sharing. Advanced technologies such as digital platforms, blockchain, and IoT provide valuable tools for enhancing data transparency, traceability, and real-time decision-making, although their adoption is not without challenges. Organizational culture and leadership emerge as pivotal factors shaping information-sharing practices. A culture that values transparency, collaboration, and open communication, supported by proactive leadership, is conducive to effective information sharing. The study emphasizes that fostering a supportive organizational culture and demonstrating leadership commitment to transparency and collaboration are essential for the success of information-sharing initiatives. The variability in information-sharing needs across different supply chain contexts underscores the importance of tailoring strategies to specific supply chain characteristics and dynamics. The study suggests that a one-size-fits-all approach to information sharing is insufficient; instead, context-specific strategies that address the unique challenges and requirements of different supply chains are necessary. Integrating information sharing with other organizational capabilities, such as risk management and strategic planning, provides a holistic approach to enhancing supply chain resilience. This integrative perspective ensures a comprehensive approach to managing disruptions, combining the strengths of information sharing with structured risk assessment and mitigation strategies. In conclusion, this study contributes to the understanding of the impact of information sharing on supply chain resilience by providing empirical evidence of its benefits and the factors influencing its effectiveness. The findings emphasize that information sharing is a crucial enabler of supply chain resilience, enhancing visibility, coordination, and adaptability. Overcoming barriers related to trust, data security, and technological integration is essential for maximizing the benefits of information sharing. By fostering a supportive organizational culture and leadership, and by tailoring information-sharing strategies to specific supply chain contexts, organizations can strengthen their resilience and better navigate the complexities of the global business environment. Future research could explore the evolving role of emerging technologies in information sharing and supply chain resilience, providing deeper insights into optimizing information-sharing practices for different supply chain scenarios.

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