

Digital Technological Strategies Used by Supply Chain Managers to Mitigate Crisis Impacts on Business Operations

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Abstract

Ineffective strategies for mitigating supply chain disruptions during crises can adversely affect business operations and profitability. Supply chain managers who lack effective digital technological strategies face heightened risks of operational interruptions, financial losses, and diminished customer satisfaction. Grounded in resource dependence theory, this qualitative pragmatic inquiry explored the digital technological strategies that supply chain managers in the southeastern United States use to reduce the impact of crises on business operations and profitability. Data were collected through semi-structured interviews with seven supply chain managers who had successfully digitalized their operations, supplemented by a review of publicly available documents. Thematic analysis revealed four key themes: 1) inventory and financial management technologies, 2) converging technologies, 3) e-commerce, and 4) communication technologies. The findings indicate that the strategic adoption and continuous updating of integrated digital technologies enhance supply chain resilience and minimize operational disruptions during crises. The implications for positive social change include improved continuity of goods and services, strengthened economic stability, and sustained employment within communities.

Keywords

Supply Chain Management, Supply Chain Resilience, Managing Crisis, Crisis Resilience Digitalization, Digital Transformation, Business Disruptions, Supply Chain Efficiency, Inventory Management Systems, E-Commerce, Communication Technologies, Converging Technologies

1. Introduction

Rapidly evolving business environments—including economic disruptions, natu-

ral disasters, and global pandemics—continue to pose significant challenges to supply chain operations and organizational performance. Such crises disrupt the flow of goods, increase operational costs, and threaten organizational profitability and long-term sustainability. The COVID-19 pandemic, for example, exposed critical vulnerabilities in global supply chains, as many organizations experienced production delays, capacity constraints, and substantial financial losses (Zhao et al., 2023). Evidence indicated that more than 50% of multinational firms struggled to maintain supply chain resilience during the pandemic, while declines in inter-border trade further contributed to significant revenue losses (Moosavi et al., 2022; Zhao et al., 2023). These conditions underscore the need for effective strategies that enhance supply chain resilience and support business continuity during periods of crisis.

Despite the increasing emphasis on digital transformation, some supply chain managers lack effective digital technological strategies to mitigate the impact of crises on business operations and profitability. Prior research suggested that digitalization can strengthen supply chain resilience and reduce the effects of disruptions (Ning et al., 2022); however, there remains limited empirical understanding of the specific digital strategies managers employ in practice. To address this gap, this study explored the digital technological strategies supply chain managers use to mitigate the impact of crises on business operations and profitability. The purpose of this qualitative pragmatic inquiry was to identify and explore the effective digital technological strategies supply chain managers in the southeast region of the United States use to reduce the impact of a crisis on business operations and profitability.

2. Literature Review

Before the outbreak of the COVID-19 pandemic, supply chain managers relied on just-in-time inventory management to enhance the efficient flow of goods. Following the pandemic outbreak, the approach failed to help the global supply chain mitigate the extreme shock (Raj et al., 2022). SCM has become the backbone of a complete strategy involving the efficient flow of material information and money (Cagri Gurbuz et al., 2022). The COVID-19 pandemic has challenged supply chain managers to rethink their strategies to avoid future disruptions. In modern-day supply chain management, the planning stage is a critical phase of operations. Planning involves making short-term and long-term goals to mitigate the pandemic and similar disruptions in the future (Raj et al., 2022). Activities within the COVID-19 planning phase defined how successful each step along the supply chain was. Precisely tailored strategies are formulated, future demands are envisioned, and optimal inventory levels are achieved. During the post-pandemic, sourcing was an integral part of the SCM repertoire, which was a successor to the planning overture. Supply chain managers have reshaped their global sourcing strategy to local to enhance their interconnectedness within the vicinity of their manufacturing premises (Raj et al., 2022).

2.1. Supply Chain Disruptions and Resilience

Supply chain disruptions arise from events such as natural disasters, geopolitical instability, and global health crises (Kaur et al., 2021). The COVID-19 pandemic, in particular, exposed the vulnerability of global supply chains, resulting in reduced trade flows, production delays, and significant financial losses for organizations worldwide (Moosavi et al., 2022). These widespread disruptions underscored the critical importance of developing resilient supply chains capable of withstanding and recovering from crisis conditions.

Supply chain resilience refers to an organization's ability to anticipate, respond to, and recover from disruptions while maintaining operational continuity (Zhao et al., 2023). Key dimensions of resilience include flexibility, agility, and redundancy. Flexibility enables supply chains to adapt to changing environmental conditions, while agility supports rapid and effective responses to unexpected disruptions (Shukor et al., 2020). Redundancy, such as maintaining multiple sourcing options, reduces dependence on single suppliers and mitigates vulnerability to failures (Wang et al., 2021). Additionally, collaboration and information sharing among supply chain partners enhance coordination and collective response capabilities, further strengthening overall supply chain resilience (Durugbo & Al-Balushi, 2024).

2.2. Supply Chain Strategies

Effective supply chain strategies are critical for mitigating disruptions and improving operational performance. Strategic alliances enable organizations to share resources, reduce risks, and enhance innovation, thereby strengthening their capacity to respond to uncertainty (Mzougui et al., 2020; Moosavi et al., 2022). In addition, supplier diversification and localized sourcing strategies reduce dependence on global supply networks and increase resilience by minimizing exposure to external shocks (Raj et al., 2022).

Inventory management and demand forecasting are also essential components of effective supply chain strategy. The limitations of just-in-time systems during the COVID-19 pandemic exposed the risks of minimal inventory buffers and highlighted the need for more flexible and data-driven approaches (Raj et al., 2022). Technologies such as big data analytics enhance demand forecasting accuracy and support proactive decision-making under conditions of uncertainty (Oliveira-Dias et al., 2022). Moreover, logistics optimization improves operational efficiency by streamlining transportation and distribution processes, further strengthening supply chain performance (Paciarotti & Torregiani, 2020).

2.3. Supply Chain Digitalization

Supply chain digitalization involves the integration of advanced technologies to improve visibility, coordination, and efficiency across supply chain operations (Bigliardi et al., 2022). Technologies such as artificial intelligence, blockchain, and the Internet of Things enable real-time tracking, predictive analytics, and en-

hanced decision-making capabilities, allowing organizations to respond more effectively to disruptions (Ning et al., 2022). Digital systems—including warehouse management systems, inventory management systems, and transportation management systems—further enhance operational efficiency by reducing errors and improving process integration (Sytych et al., 2022; Harb & Trad, 2023). These technologies also strengthen communication and collaboration among supply chain stakeholders, resulting in more responsive and interconnected supply chain networks. Collectively, digitalization plays a critical role in enhancing supply chain resilience and mitigating the impact of disruptions.

2.4. Theoretical Framework

This study is grounded in resource dependence theory (RDT), developed by Pfeffer and Salancik (2003). RDT explains how organizations depend on external resources to sustain operations and manage uncertainty. Organizations rely on external entities—such as suppliers, strategic partners, and technology providers—for critical resources, including information, capital, and technological capabilities (Celtekliligil, 2020; Pfeffer & Salancik, 2003). This dependence on external resources increases uncertainty, particularly in dynamic environments such as global supply chains. Figure 1 illustrates the conceptual framework underpinning this study and depicts the relationship between digital technological strategies and supply chain resilience. The framework demonstrates how digital technological strategies function as external resources that enable supply chain managers to enhance resilience and mitigate the impact of crises on business operations and profitability.

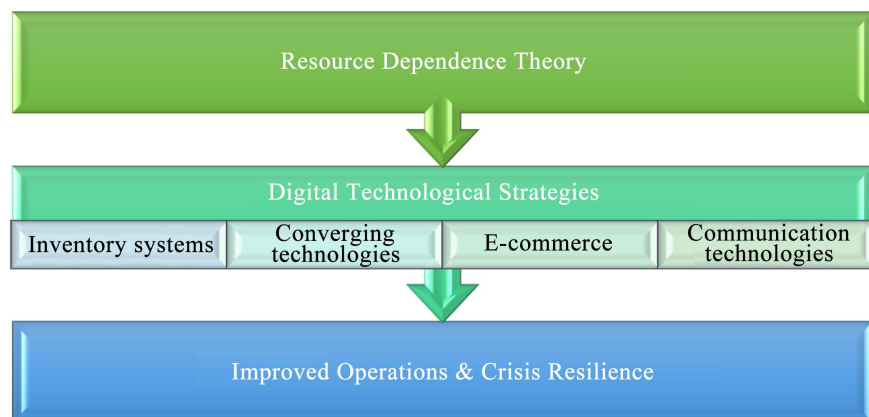


Figure 1. Conceptual framework of digital technological strategies for supply chain resilience.

Resource dependence theory (RDT) suggests that organizations can reduce uncertainty and enhance performance by strategically managing external dependencies through collaboration, diversification, and resource acquisition (Hillman et al., 2009). In supply chain contexts, managers leverage external digital technologies and strategic partnerships to maintain operational continuity and respond

effectively to disruptions. Prior research indicates that such strategies enhance supply chain resilience and improve operational performance during periods of uncertainty (Jiang et al., 2022; Kim et al., 2020). Although critics argue that RDT underemphasizes the role of internal capabilities (Ozturk, 2020), the theory remains a relevant lens for understanding how organizations utilize external technological resources to mitigate the impacts of crises.

In this study, RDT provides a theoretical lens for examining how supply chain managers leverage digital technologies as external resources to reduce the impact of crises on business operations and profitability.

3. Methods

A qualitative pragmatic inquiry research method and design were employed to explore the digital technological strategies that supply chain managers use to mitigate the impact of crises on business operations and profitability. This approach was appropriate for the project because the qualitative research method is recommended in exploratory research as it explores narrative and visual data guided by research questions developed to address an underlying problem (Borgstede & Scholz, 2021; Noyes et al., 2019). It fits the objective of the project to identify and explore the digital technological strategies supply chain managers use to minimize the impact of a crisis on business operations and profitability. The pragmatic inquiry research design was used because it enables researchers to produce desirable and actionable knowledge of a complex phenomenon within a given organizational setting (Kelly & Cordeiro, 2020). Using this research design, a researcher can comprehend effective strategies and use the knowledge to construct potential solutions to underlying indeterminable situations. Pragmatic inquiry is recommended when researching business processes and management-related concerns.

The target population consisted of supply chain managers in the southeastern United States who had successfully implemented digital technologies to enhance supply chain resilience. Participants were selected using purposive sampling based on their experience with digitalized supply chain operations. Eligibility criteria required participants to be 18 years of age or older, supply chain managers, and to have successfully implemented digital technological strategies specifically aimed at mitigating supply chain disruptions. The participants were from the retail and consumer goods, food service, and aerospace manufacturing industries and had at least 10 years of experience. Adhering to ethical considerations respect for persons, justice, and beneficence was maintained. Through the informed consent process, the participants were informed of the purpose of the study, any risk factors, their responsibilities in the study, and of the fact that they would remain anonymous and their confidentiality upheld. Furthermore, they were informed that there were no incentives for participating and that they could withdraw at any time without penalty and any information they provided up to that point would be permanently destroyed.

Data were collected through semi-structured interviews, primarily, with seven

supply chain managers, and secondarily it was supplemented by a review of publicly available documents. The interviews were conducted via Zoom over a four-week period. Each interview lasted between 30 and 60 minutes allowing for deep, rich conversations with the participants, and for thick, rich data to be collected. The secondary corroborating data consisted of 20 source documents, (success stories, documented case studies found through the Association for Supply Chain Management (formerly APICS), industry reports, open access publications and articles, public websites, and organization artifacts and documentation). The secondary data was used to support the statements made by the participants and confirm the interview themes. Participants were recruited through professional networks and assigned pseudonyms (P1 - P7) to ensure confidentiality. Data saturation was achieved after six interviews; however, I conducted one more interview to ensure that was the case. No new inform was provided in the interview with the sixth participant that had not already been shared by the prior participants. Member checking was conducted to confirm the accuracy of the interpretations of the participants statements.

Analysis and triangulation of the data collected, the reflective notes, and the secondary data from the interviews were performed after each interview. The data were analyzed using thematic analysis following Yin's five-step approach, which includes compiling, coding, theme development, and interpretation (Castleberry & Nolen, 2018; Yin, 2017). This process facilitated seeing the emergence of the initial themes and when data saturation had been achieved. Then the data were uploaded into NVivo software to confirm the identification. This process was used to enhance trustworthiness, and to ensure the credibility and dependability of the findings.

4. Results and Discussion

Pfeffer and Salancik' (2003), RDT posits that businesses are no longer self-contained entities but, as a substitute, depend on external resources to continue to exist and thrive. RDT involves the assumption that some of the organization's highly valuable resources are uncertain and limited. Hence, organizations must constantly contact other entities to manage the environmental uncertainty linked to limited internal resources (Celtekligil, 2020). Through these actions, businesses are driven to establish relationships and dependencies with external entities such as suppliers, customers, and regulatory bodies to access indispensable resources (Pfeffer & Salancik, 2003). These assets include monetary capital, raw materials, information, technology, expertise, and social connections. The principle emphasizes that agencies' potential to be impervious and manage key sources immediately influences their power, strategic choices, and performance.

This section presents the four major themes that emerged from the thematic analysis of participant interviews and supporting documentary data. Each theme represents a distinct category of digital technological strategies used by supply chain managers to mitigate the impact of crises on business operations and prof-

itability. Collectively, these themes illustrate how organizations leverage digital technologies as external resources to enhance supply chain resilience, maintain operational continuity, and sustain performance during periods of disruption. **Table 1** summarizes the identified themes and the frequency of references across participant responses.

Table 1. Major themes and references.

Major themes	# participants referenced theme	# references to theme
Inventory and financial management technologies	7	100
Converging technologies	7	67
E-commerce	7	65
Communication technologies	7	55

Note. Frequency of references indicates the extent to which each theme was emphasized across participant responses.

4.1. Theme 1: Inventory and Financial Management Technologies

The findings indicate that effective crisis mitigation in supply chain operations is not solely dependent on maintaining stock levels but on leveraging integrated digital systems that provide real-time visibility, forecasting capabilities, and financial insight. Participants consistently emphasized that inventory and financial management technologies function as critical enablers of operational continuity, allowing organizations to respond proactively to disruptions rather than reactively managing shortages.

To operationalize these strategies, supply chain managers adopted digital tools that enhanced visibility, coordination, and decision-making across supply chain processes. The following key practices emerged:

- **Real-Time Inventory Visibility:** Participants highlighted the importance of digital platforms that enable continuous monitoring of inventory levels. Participants P1, P5, P6, and P7 utilized such systems to track product availability and ensure the uninterrupted flow of goods during crisis conditions. These tools enhanced responsiveness and reduced uncertainty in supply chain operations.
- **Demand Forecasting and Planning Systems:** The use of enterprise resource planning (ERP) and material resource planning (MRP) systems was identified as a critical strategy for aligning supply with demand. P2 emphasized that these systems were instrumental in determining optimal inventory levels and streamlining procurement and production planning processes.
- **Operational and Cost Efficiency:** Participants reported that digital inventory systems contributed to both service improvement and cost reduction. For instance, P5 noted that these technologies helped to “improve customer service and reduce costs”, demonstrating their dual operational and financial value.

- **Integration of Financial and Inventory Data:** A key insight from the findings was the integration of inventory management with financial systems to enhance strategic decision-making. P1 explained that financial tools such as QuickBooks enabled the organization to assess performance and make informed decisions, stating that the integration provided “the means to look at financial performance and how to enhance it.” Similarly, P7 emphasized the role of integrated data in analyzing sales trends, monitoring stock levels, and identifying potential disruptions.

These findings support existing research indicating that digital technologies enhance supply chain planning, forecasting, and operational efficiency (Basheer et al., 2019; Bigliardi et al., 2022). From a resource dependence theory perspective, inventory and financial management technologies serve as critical external resources that enable organizations to reduce uncertainty and improve resilience during crises. By leveraging these technologies, supply chain managers were able to optimize resource allocation, enhance visibility, and sustain business performance in dynamic and uncertain environments.

4.2. Theme 2: Converging Technologies

The findings indicate that supply chain resilience during crises is increasingly driven by the adoption of converging technologies that integrate data, automation, and predictive capabilities. Participants emphasized that technologies such as artificial intelligence (AI), Internet of Things (IoT), machine learning, and blockchain enhance real-time visibility, improve decision-making, and enable proactive responses to disruptions. Rather than relying on traditional systems, managers leveraged these technologies to create more adaptive and intelligent supply chain networks.

To operationalize these capabilities, supply chain managers adopted a range of converging technologies to enhance coordination, efficiency, and responsiveness. The following key practices emerged:

- **Adoption of Advanced Analytics and Artificial Intelligence:** Participants highlighted the use of AI-driven tools to support decision-making and demand forecasting. P1 and P3 described experimenting with emerging technologies through third-party software integration, with P1 noting that “it was an experimentation into new technology... we had to leverage third-party software.” P3 further emphasized the growing role of AI in optimizing decisions, explaining that such tools can identify “the best choice” based on input data.
- **Real-Time Monitoring through IoT Technologies:** IoT devices were used to track inventory conditions and monitor logistics processes in real time. P6 reported using IoT devices to monitor “temperature and humidity in storage facilities to ensure product quality,” while also supporting inventory tracking and demand forecasting. These capabilities enhanced visibility and enabled timely interventions during disruptions.
- **Automation and Robotics for Operational Continuity:** Automation technol-

ogies were critical in addressing labor shortages and maintaining operational efficiency during the pandemic. P7 utilized robotics and automated pick-up systems to sustain warehouse operations, noting that these tools helped to “improve warehouse efficiencies and reduce reliance on manual labor” under social distancing constraints.

- **Blockchain and Integrated Digital Systems:** Participants also leveraged blockchain, machine learning, and transportation management systems (TMS) to improve traceability, optimize logistics, and enhance coordination across the supply chain. P5 reported using these technologies to “improve traceability, reduce inefficiencies, and enhance product quality control,” while also ensuring alignment with market demand.

These findings align with prior research indicating that converging digital technologies enhance supply chain visibility, coordination, and performance (Bigliardi et al., 2022; Ning et al., 2022). From a resource dependence theory perspective, these technologies function as critical external resources that enable organizations to reduce uncertainty and strengthen resilience. Some challenges with integrating external tools might be data quality and availability such as inconsistency product, customer or supplier master data, missing records, duplicate records or even different definitions for the same operation. However, by and large, integrating converging technologies into their operations, supply chain managers were able to improve efficiency, enhance adaptability, and sustain performance in highly dynamic and uncertain environments.

4.3. Theme 3: E-Commerce

The findings indicate that e-commerce platforms played a critical role in enabling business continuity and maintaining customer access during crisis conditions. Participants emphasized that the adoption and expansion of e-commerce systems allowed organizations to adapt to shifting consumer behaviors, particularly the increased demand for contactless transactions and online purchasing. Rather than relying solely on physical operations, supply chain managers leveraged digital commerce platforms to sustain sales, streamline transactions, and ensure uninterrupted service delivery.

To operationalize these capabilities, supply chain managers implemented and enhanced e-commerce systems to improve accessibility, integration, and customer experience. The following key practices emerged:

- **Expansion of Online Ordering and Delivery Systems:** Participants highlighted the importance of strengthening online platforms to support contactless shopping. P7 emphasized that the organization prioritized ensuring that “online ordering and delivery services were up to par to accommodate all the contactless shopping,” reflecting the need to adapt quickly to changing customer expectations during the crisis.
- **Adoption of E-Commerce as a Primary Operational Channel:** For some organizations, e-commerce became the most viable or only digital strategy. P4

noted that online shopping was the primary tool compatible with the business model, explaining that the company lacked the infrastructure for in-store pickup or home delivery alternatives.

- **Integration of Payment and Transaction Systems:** Participants also emphasized the importance of integrating payment processing technologies into e-commerce platforms. P1 described the adoption of tools such as Stripe to manage recurring payments and invoicing, noting that these systems were essential for maintaining financial operations and transaction efficiency during disruptions.
- **Collaboration with Third-Party Technology Providers:** Participants reported partnering with external vendors to develop and enhance e-commerce capabilities. These collaborations enabled organizations to build more robust and scalable platforms that supported seamless customer experiences across multiple channels.

These findings are consistent with prior research indicating that e-commerce technologies enhance supply chain integration, improve customer engagement, and support business continuity during disruptions (Mashalah et al., 2022). From a resource dependence theory perspective, e-commerce platforms represent critical external resources that enable organizations to access markets, maintain revenue streams, and respond effectively to environmental uncertainties. By leveraging e-commerce technologies, supply chain managers were able to sustain operations, meet customer demands, and enhance resilience during crisis conditions.

4.4. Theme 4: Communication Technologies

The findings indicate that communication technologies are critical enablers of coordination, collaboration, and real-time decision-making in supply chain operations during crises. Participants emphasized that maintaining continuous and synchronized communication across stakeholders was essential for mitigating disruptions and ensuring the smooth flow of operations. Digital communication tools enabled organizations to overcome physical and geographical barriers, particularly in remote and socially distanced working environments.

To implement these capabilities, supply chain managers adopted various communication technologies to enhance connectivity and information sharing across the supply chain network. The following key practices emerged:

- **Real-Time Communication and Collaboration:** Participants highlighted the importance of digital communication platforms in facilitating immediate information exchange. P3 noted that technologies such as computers, mobile devices, and virtual meeting platforms enabled all members of the organization to remain connected, stating that “everybody has those,” which supported continuous communication across teams.
- **Integration of Communication Systems Across Stakeholders:** Participants emphasized the need to connect suppliers, customers, and internal teams through unified communication platforms. P1 and P2 relied on digital tools to

coordinate activities with remote employees and external partners, ensuring that supply chain processes remained aligned and responsive during disruptions.

- **Support for Remote Work and Distributed Operations:** Communication technologies enabled organizations to maintain operational continuity despite restrictions on physical interactions. Participants reported leveraging virtual communication tools to manage remote teams and sustain workflow efficiency across geographically dispersed locations.
- **Enhanced Decision-Making Through Information Sharing:** Participants indicated that real-time communication facilitated faster and more informed decision-making. P5 highlighted that digital communication platforms improved collaboration with suppliers and business partners, while P6 noted that these tools allowed the organization to adapt quickly to “changing circumstances and ensure continuity of operations.” Similarly, P7 emphasized the importance of real-time information sharing in coordinating and planning supply chain activities.

These findings align with prior research indicating that effective communication and information sharing enhance supply chain coordination and resilience (Durugbo & Al-Balushi, 2024; Ning et al., 2022). From a resource dependence theory perspective, communication technologies function as critical external resources that enable organizations to strengthen collaboration, reduce uncertainty, and respond effectively to disruptions. By leveraging these technologies, supply chain managers were able to maintain connectivity, improve coordination, and sustain operational performance during crisis conditions.

5. Professional Practice and Implications for Social Change

The findings of this study contribute to the growing body of knowledge on supply chain digitalization by identifying practical digital technological strategies that enhance organizational resilience during crises. Prior research highlights the increasing importance of digital technologies in improving supply chain performance and competitiveness (Laorden et al., 2022; Zhao et al., 2023). The results offer actionable insights for supply chain managers seeking to improve operational continuity, reduce disruptions, and strengthen overall performance. Specifically, the identified strategies—inventory and financial management technologies, converging technologies, e-commerce, and communication technologies—provide adaptable options that managers can implement based on organizational needs and existing technological capabilities.

For professional practice, supply chain managers should prioritize the strategic integration of digital technologies that enhance real-time visibility, data-driven decision-making, and coordination across supply chain networks. These capabilities have been shown to improve efficiency and responsiveness in dynamic and uncertain environments (Ning et al., 2022). Managers are encouraged to adopt scalable, compatible technologies aligned with their organizational structure and

operational requirements. Additionally, organizations should invest in digital tools that support forecasting, communication, and process automation to strengthen responsiveness during supply chain disruptions.

The findings also offer valuable insights for technology developers by highlighting opportunities to enhance existing digital solutions or design innovative tools that address persistent gaps in supply chain operations. Organizations that have not fully digitalized their supply chains may particularly benefit from customized and adaptable technological solutions that support their transition toward digital transformation and long-term resilience.

The findings of this study have important implications for positive social change. The adoption of effective digital technological strategies can support the uninterrupted flow of goods and services during periods of crisis, thereby improving access to essential products such as food and healthcare supplies. Ensuring continuity in supply chain operations contributes to economic stability by reducing disruptions and enabling communities to maintain reliable access to critical resources (Moosavi et al., 2022).

Furthermore, enhanced supply chain performance may lead to reduced operational costs, which can translate into lower prices for consumers. Improved efficiency and sustained business continuity also have the potential to stimulate economic growth by supporting organizational expansion and creating employment opportunities within communities (Laorden et al., 2022). Collectively, the strategic implementation of digital supply chain technologies contributes to more resilient economies and improved societal well-being.

6. Directions for Further Research

Future research could build on the findings of this study by including a larger and more diverse sample of supply chain managers to capture a broader range of perspectives and strategic practices. Expanding the geographical scope beyond the southeastern United States would allow for comparative analysis across regions and enhance the transferability and generalizability of the findings.

Additionally, future studies could examine industry-specific applications of digital technologies to better understand how organizations across different sectors adopt and benefit from digital supply chain strategies. Further research may also explore the long-term impact of digitalization on supply chain performance, resilience, and sustainability (Ning et al., 2022). Investigating emerging technologies and their evolving role in supply chain management could provide valuable insights for both researchers and practitioners seeking to strengthen digital transformation efforts.

7. Limitations

This study has several limitations that should be considered when interpreting the findings. The sample size was limited to seven supply chain managers in the southeastern United States, which may affect the transferability and generalizabil-

ity of the results. Although qualitative research prioritizes depth over breadth, a larger and more diverse sample could yield additional insights and potentially different findings (Andrade, 2020). Additionally, challenges associated with identifying and recruiting eligible participants from approved sources may have limited the range of perspectives represented in the study.

Another limitation concerns the potential withholding of information by participants. Some participants may have been cautious in disclosing sensitive organizational details due to concerns related to confidentiality or competitive advantage, which may have constrained the depth of insights obtained. This limitation was mitigated through the assurance of and the use of pseudonyms. Furthermore, participants' demanding professional schedules may have influenced the level of detail and reflection provided during interviews, potentially affecting the richness of the data.

Despite these limitations, the study offers valuable insights into effective digital technological strategies that enhance supply chain resilience and support business continuity during crises. The findings are consistent with prior research on digital supply chain transformation and contribute meaningful practical and theoretical knowledge to the field (Zhao et al., 2023).

8. Conclusion

The findings from this qualitative pragmatic inquiry indicate that supply chain resilience during crises is strongly supported by the strategic adoption of digital technologies. Supply chain managers demonstrated the effective use of inventory and financial management technologies, converging technologies, e-commerce, and communication technologies to enhance operational continuity and mitigate disruptions. Collectively, these themes reflect a purposeful approach to digital transformation grounded in the strategic use of external resources to manage uncertainty.

As global supply chains continue to face dynamic and unpredictable challenges, the findings provide a practical framework for leveraging digital technologies to strengthen resilience and sustain business performance. This study offers valuable insights for advancing digital supply chain capabilities while supporting operational efficiency, economic stability, and continuous access to essential goods and services.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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