
DIGITAL TRANSFORMATION AND SUPPLY CHAIN RESILIENCE: AN EMPIRICAL STUDY OF THE INDIAN LOGISTICS SECTOR WITH INSIGHTS FROM ELITE LOGIX, VISAKHAPATNAM

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ABSTRACT

This study examines the role of digital transformation in enhancing supply chain resilience in the Indian logistics sector, with specific insights from EliteLogix, Visakhapatnam. The increasing frequency of global disruptions such as the COVID-19 pandemic, the Russia–Ukraine conflict, and geopolitical tensions involving the United States, Israel, and Iran have exposed the vulnerabilities of global supply chains and highlighted the need for resilient logistics systems. In this context, organizations are increasingly adopting digital technologies to improve operational efficiency, visibility, coordination, and responsiveness.

The main objective of the study is to understand how digital technologies contribute to supply chain resilience within logistics operations. The research focuses on the adoption of digital tools, their impact on visibility and coordination, their role in handling disruptions, and the barriers affecting digital adoption.

The study adopts a case study research design focusing on EliteLogix as the unit of analysis. Both primary and secondary data were used in the study. Primary data was collected through questionnaires administered to employees and through observations made during the researcher's internship within the organization. Secondary data was obtained from academic journals, books, research articles, and company-related information relevant to the study. The collected data was analyzed using percentage, descriptive, and thematic analysis techniques.

The findings of the study indicate that digital technologies positively influence logistics operations by improving visibility, coordination, communication, and decision-making. The study also reveals that digital tools support organizations in responding more effectively to disruptions, thereby contributing to supply chain resilience. However, certain challenges such as limited training and barriers to technology adoption still exist.

Overall, the study concludes that digital transformation plays a significant role in strengthening supply chain resilience within the logistics sector. The research contributes to the growing understanding of how small logistics firms can utilize digital technologies to improve operational performance and manage disruptions more effectively.

KEYWORDS: Digital Transformation, Supply Chain Resilience, Logistics Sector, Visibility, Coordination, Disruptions, Elite Logix, India.

1.1 INTRODUCTION TO THE STUDY

A supply chain comprises the network of organizations, individuals, activities, information, and resources involved in the creation and delivery of a product or service to the end customer. It extends beyond suppliers and manufacturers to include logistics providers, distributors, retailers, and customers, forming an integrated system that operates across geographical and organizational boundaries. Within firms, supply chain management involves the coordination of procurement, production, distribution, marketing, and customer service functions to ensure efficiency and value creation.

In the contemporary globalized economy, supply chains have evolved into highly complex and interdependent systems. While this interconnectedness enhances efficiency and cost optimization, it simultaneously increases vulnerability to disruptions. Consequently, the concept of **supply chain resilience** has gained prominence, referring to the capacity of supply chains to anticipate, absorb, adapt to, and recover from disruptions while maintaining continuity of operations and service delivery.

1.2 Background of the Study

The importance of supply chain resilience has been underscored by a series of global disruptions in recent years. Geopolitical tensions, including conflicts involving the United States, Israel, and Iran, have created instability in critical maritime routes, particularly affecting energy and trade logistics. Similarly, the Russia–Ukraine conflict has disrupted global supply chains by constraining the availability of essential commodities such as oil, natural gas, and agricultural products.

The COVID-19 pandemic further exposed structural vulnerabilities in global supply chains, including over-reliance on single sourcing, lack of flexibility, and limited visibility across supply networks. These disruptions resulted in production halts, transportation delays, labor shortages, and increased costs, highlighting the limitations of traditional supply chain models focused primarily on efficiency.

In response, organizations are increasingly prioritizing resilience alongside efficiency. Digital technologies have emerged as key enablers in this transformation. Technologies such as Artificial Intelligence (AI), Internet of Things (IoT), blockchain, big data analytics, and cloud computing facilitate real-time data exchange, predictive analytics, and improved coordination among stakeholders. These capabilities enable organizations to proactively manage risks, enhance visibility, and improve decision-making under uncertainty.

The Indian logistics sector presents a particularly relevant context for this study. Despite being a critical component of economic development, the sector faces challenges such as high logistics costs, infrastructure constraints, and fragmented operations. Recent policy initiatives, including the National Logistics Policy and PM Gati Shakti, emphasize digital integration and infrastructure development to improve efficiency and resilience. However, the extent to which digital technologies contribute to resilience in practice remains underexplored.

1.3 Theoretical Background of the Study

This study is anchored in established theoretical frameworks that explain the relationship between digital technologies and supply chain resilience.

Resilience Theory provides the foundational perspective, emphasizing the ability of systems to withstand disruptions, adapt to changing conditions, and recover efficiently. In supply chains, resilience is often conceptualized through dimensions such as robustness, agility, and adaptability.

Dynamic Capabilities Theory (Teece et al.) extends this perspective by focusing on an organization's ability to integrate, build, and reconfigure internal and external competencies in response to rapidly changing environments. Digital technologies enhance these capabilities by enabling real-time sensing, decision-making, and reconfiguration of supply chain processes.

Technology Acceptance Model (TAM) explains the adoption of digital technologies based on perceived usefulness and ease of use. In the logistics sector, the successful implementation of digital tools depends on organizational readiness, user acceptance, and technological infrastructure.

Together, these frameworks provide a comprehensive basis for analysing how digital transformation contributes to supply chain resilience.

1.4 Need for the Study

The increasing frequency and severity of supply chain disruptions have created an urgent need for resilient logistics systems. While digital technologies are widely recognized as critical enablers of resilience, their practical implementation in the Indian logistics sector remains inconsistent.

Existing studies often focus on theoretical aspects or developed economies, with limited empirical evidence from emerging markets such as India. Furthermore, there is a lack of case-based research that examines how digital technologies are applied in real-world logistics operations to address disruptions.

This study addresses these gaps by providing an in-depth analysis of digital transformation and its impact on supply chain resilience, using EliteLogix as a case example. The findings are expected to contribute to both academic literature and practical decision-making in logistics management.

1.5 Problem Statement

Supply chains in the modern global economy are increasingly exposed to disruptions arising from geopolitical conflicts, pandemics, and economic uncertainties. Traditional supply chain models, designed primarily for efficiency and cost minimization, lack the flexibility and adaptability required to respond effectively to such disruptions.

In the Indian logistics sector, additional challenges such as fragmented systems, limited end-to-end visibility, infrastructure constraints, and reliance on manual processes further hinder resilience. Although digital technologies have the potential to address these challenges, their adoption is often constrained by high implementation costs, skill gaps, data silos, and resistance to organisational change.

In the case of EliteLogix, digital technologies have been integrated into logistics operations; however, there is limited systematic evaluation of their effectiveness in enhancing supply chain resilience. Specifically, the impact of digital tools on responsiveness, adaptability, and operational continuity during disruptions remains insufficiently understood.

Therefore, this study seeks to examine how digital technologies contribute to improving supply chain resilience within the Indian logistics sector, with a focused analysis of EliteLogix.

Methodology of the Study

This study adopts a **research design**, focusing on EliteLogix as the unit of analysis. A **mixed-method approach** is used, combining both qualitative and limited quantitative techniques to examine the relationship between digital transformation and supply chain resilience.

Primary data is collected through a **structured questionnaire** administered to employees and **participant observation** conducted during the researcher's internship within the organization. The observation provided direct insights into logistics operations, use of digital tools, and handling of disruptions.

Secondary data is used in a supportive role and includes relevant academic literature and general company-related information to provide background and context for the study.

The data is analyzed using **descriptive techniques**, such as percentage analysis for questionnaire responses, and **thematic analysis** for observational findings. This approach allows the identification of patterns and relationships between digital technologies and supply chain resilience within the organization.

2.1 LITERATURE REVIEW

Supply Chain Resilience and Digital Transformation

Supply chains today operate in highly uncertain environments where disruptions are unavoidable. Recent global events have clearly shown how vulnerable supply chains can be. **The COVID-19** pandemic caused major shifts in consumer demand and reduced operational capacity across supply chains. This was followed by the **Russia-Ukraine War**, which disrupted global trade flows and increased uncertainty in logistics operations. More recently, tensions such as the **Israel-Iran Conflict** have further added to instability in global supply chains. These events highlight how external shocks can affect the movement of goods, availability of resources, and overall supply chain performance.

In response to **these challenges**, the concept of supply chain resilience has gained increasing importance. Supply chain resilience refers to the ability of a system to anticipate, respond to, and recover from disruptions while maintaining critical operations. It involves not only surviving **disruptions** but also adapting to changing conditions and improving performance over time.

According to Ponomarov and Holcomb (2009), supply chain resilience is the capability to prepare for unexpected events, respond effectively, and recover to an original or improved

state after disruption. This definition highlights the importance of preparedness, response, and recovery as key elements of resilience.

The concept of **resilience** has evolved over time. Initially, resilience was understood as the ability of a system to return to its original state after disruption (Mensah et al., 2014). However, more recent studies provide a broader perspective. Meuwissen et al. (2019) define resilience as the ability to maintain system functions in the face of economic, social, and environmental shocks through robustness, adaptability, and transformability. Similarly, Gölgeci and Kuivalainen (2020) and Behzadi et al. (2020) emphasize rapid recovery, while Caputo et al. (2019) consider resilience as a performance outcome. More recently, Wieland and Durach (2021) define supply chain resilience as the capacity to persist, adapt, or transform in response to change. These perspectives show that resilience is a multidimensional concept that goes beyond simple recovery.

A key capability that supports **supply chain resilience is agility**. Agility refers to the ability of a supply chain to respond quickly to unexpected changes by either returning to its original state or adapting its structure (Bakshi&Kleindorfer, 2009; Wieland &Wallenburg, 2013). Agility is not limited to individual firms but requires coordination across the entire supply chain. Martin Christopher and Helen Peck (2004) identify **visibility** and **velocity** as key elements of agility. Visibility involves access to information across the supply chain, while velocity refers to the speed of movement of goods and materials. Together, these capabilities enable organizations to respond more effectively to disruptions.

Digital transformation plays a critical role in enhancing supply chain resilience. It involves the use of technologies such as data analytics, tracking systems, and digital platforms to improve visibility, coordination, and decision-making. These tools allow organizations to monitor operations in real time, anticipate disruptions, and respond more efficiently. As a result, digital transformation helps supply chains move from reactive responses to more proactive and adaptive approaches.

2.2 Theoretical Framework

This study is grounded in Dynamic Capabilities Theory (DCT) and the concept of Supply Chain Resilience (SCR). The framework explains how digital transformation strengthens the ability of logistics firms to anticipate, respond to, and recover from disruptions. In the context of small logistics firms such as EliteLogix, digital technologies are viewed as strategic tools that improve operational flexibility, visibility, coordination, and adaptability under uncertain business conditions.

2.2.1 Dynamic Capabilities Theory (DCT)

Dynamic Capabilities Theory was developed by Teece, Pisano, and Shuen (1997) and refers to a firm's ability to integrate, build, and reconfigure internal and external competences in response to rapidly changing environments. The theory explains how organizations survive and remain competitive during uncertainty and disruption.

In the logistics sector, firms operate in highly dynamic environments influenced by changing customer demands, transportation disruptions, geopolitical conflicts, and technological changes. Therefore, organizations must continuously adjust their operations and strategies to maintain performance and continuity.

For small logistics firms, dynamic capabilities are especially important because they often operate with limited financial resources, smaller workforces, and limited infrastructure. As a result, they depend heavily on flexibility, rapid coordination, and efficient use of existing resources.

2.2.2 Core Processes of Dynamic Capabilities

Sensing Capability

Sensing refers to the ability of an organization to identify and anticipate changes, risks, or opportunities in the external environment. In logistics operations, this may include monitoring transportation delays, customer demand changes, regulatory shifts, fuel price fluctuations, or geopolitical disruptions such as the COVID-19 pandemic, the Russia–Ukraine conflict, and tensions involving Israel, Iran, and the United States.

Digital technologies strengthen sensing capabilities by providing real-time information through tracking systems, communication platforms, and operational dashboards. These systems allow firms to detect disruptions earlier and respond more effectively.

Seizing Capability

Seizing refers to the ability of the organization to take action once opportunities or threats have been identified. In logistics operations, this may involve rerouting shipments, changing transport schedules, reallocating resources, or coordinating alternative delivery arrangements. Digital tools support seizing capabilities by enabling faster communication, operational coordination, and decision-making. Transport management systems, real-time tracking tools, and digital communication platforms allow managers to react quickly and reduce operational delays during disruptions.

Transforming or Reconfiguring Capability

Transforming refers to the organization's ability to modify its operations, processes, or resource structures over time in response to environmental changes. This includes adopting new technologies, redesigning logistics processes, improving communication systems, or restructuring operational strategies.

In the context of logistics firms, digital transformation supports reconfiguration by improving learning, operational efficiency, and adaptability. Firms are able to use operational data and previous disruption experiences to improve future responses and reduce vulnerabilities.

Organizational Learning and Operational Routines

Dynamic capabilities are closely connected to organizational learning and operational routines. Organizations improve resilience by learning from previous disruptions and continuously improving their processes.

Learning mechanisms may include employee feedback, operational reviews, post-disruption analysis, and customer communication. Cohen and Levinthal (1990) describe absorptive capacity as the ability of firms to recognize, assimilate, and apply external knowledge effectively.

For logistics firms, this learning process supports continuous improvement in areas such as shipment coordination, communication systems, and digital operations. Over time, organizations become better prepared to manage disruptions and operational uncertainty.

2.2.5 Supply Chain Resilience (SCR)

Supply chain resilience refers to the ability of supply chains to anticipate, prepare for, respond to, and recover from disruptions while maintaining operational continuity and acceptable performance levels. According to Ponomarov and Holcomb (2009), resilience involves preparedness, response capability, and recovery following unexpected disruptions.

Recent global events such as COVID-19, the Russia–Ukraine War, and geopolitical tensions in the Middle East demonstrated how vulnerable supply chains can become during crises. These disruptions affected transportation networks, fuel availability, trade routes, labor availability, and operational coordination across global logistics systems.

As a result, resilience has become a major strategic priority within supply chain management.

Core Dimensions of Supply Chain Resilience

Anticipation

Anticipation refers to the ability to identify and prepare for potential disruptions before they occur. This may involve monitoring transportation conditions, weather events, political instability, or operational risks.

Digital systems improve anticipation by providing early warning information and real-time operational visibility.

Response

Response capability refers to the ability to react quickly and effectively during disruptions. This includes rerouting shipments, adjusting schedules, changing transportation modes, or reallocating operational resources.

Digital technologies strengthen response capability by improving communication speed and operational coordination.

Recovery

Recovery refers to the ability of the organization to restore operations after a disruption. Effective recovery minimizes operational downtime and reduces negative impacts on customer service and logistics performance.

Digital tools support recovery through better coordination, visibility, and faster decision-making.

Adaptation

Adaptation refers to long-term learning and improvement following disruptions. Organizations improve resilience by modifying their systems, processes, and operational practices based on previous experiences.

This adaptive capability allows firms to become more flexible and less vulnerable to future disruptions.

2.2.7 Resilience Capabilities

Several operational capabilities support supply chain resilience.

Flexibility

Flexibility refers to the ability to adjust logistics operations, delivery schedules, transportation routes, or operational processes when disruptions occur.

Responsiveness

Responsiveness refers to the speed at which organizations react to operational changes, customer requests, or unexpected disruptions.

Robustness

Robustness refers to the ability of operational systems to continue functioning under difficult conditions without complete operational failure.

Redundancy

Redundancy refers to the availability of backup systems, alternative routes, suppliers, or operational resources that can be used during disruptions.

For smaller logistics firms, flexibility and responsiveness are often more practical and affordable than maintaining extensive redundancy.

2.2.8 Digital Transformation and Supply Chain Resilience

Digital transformation refers to the integration of digital technologies into logistics and supply chain operations. In this study, digital transformation is viewed as a strategic enabler that strengthens both dynamic capabilities and supply chain resilience.

Technologies commonly used in logistics operations include:

- GPS tracking systems
- Transport Management Systems (TMS)
- Cloud-based communication platforms
- Digital dashboards and reporting systems
- Mobile communication applications
- Data analytics tools
- Internet of Things (IoT) technologies

These technologies improve visibility, coordination, operational control, and information sharing within logistics networks.

Real-Time Visibility

Digital technologies provide real-time visibility into shipment locations, operational delays, vehicle movement, and customer orders. Improved visibility allows firms to identify disruptions early and react more effectively.

Improved Coordination and Communication

Digital platforms strengthen communication between dispatchers, drivers, customers, customs agents, and operational staff. Faster communication reduces uncertainty and improves operational continuity.

Enhanced Agility and Decision-Making

Digital systems improve agility by enabling rapid operational adjustments, including rerouting shipments, modifying schedules, and reallocating resources during disruptions.

Operational dashboards and tracking systems support faster and more accurate decision-making under uncertain conditions.

2.2.9 Linking Dynamic Capabilities and Supply Chain Resilience Through Digital Transformation

This theoretical framework proposes that digital transformation strengthens dynamic capabilities, which in turn improve supply chain resilience.

Digital technologies enhance sensing capabilities by improving access to real-time information and operational monitoring.

They strengthen seizing capabilities by supporting rapid coordination, communication, and operational decision-making during disruptions.

They also improve transforming capabilities by enabling organizations to learn from operational data, redesign processes, and improve long-term adaptability.

As a result, digital transformation contributes directly to improved anticipation, response, recovery, and adaptation capabilities within logistics operations.

2.3 Review of Previous Studies

Previous studies show that supply chain resilience has become an important area of research, especially after major global disruptions. Early work by Ponomarov and Holcomb (2009) defined resilience as the ability to adapt and recover from disruptions.

Later research highlights the role of digital technologies in improving resilience. Studies show that technologies such as tracking systems, data analytics, and digital platforms improve visibility, coordination, and decision-making within supply chains. These improvements help organizations respond more effectively to disruptions.

Research also shows that agility, visibility, and flexibility are key capabilities that support resilience. For example, Martin Christopher and Helen Peck (2004) emphasize the importance of visibility and velocity in improving responsiveness.

However, many existing studies focus on large organizations or broad industry-level analysis. There is limited research that examines how digital transformation supports resilience in small logistics firms using real-world data and case-based approaches.

2.4 Research Gap

Despite a growing body of literature on digital transformation and supply chain resilience, important gaps remain in its application to small and medium-sized logistics firms in India. Much of the existing research focuses on large multinational companies, with limited attention given to small firms that operate under different constraints such as limited resources, skills, and infrastructure.

In addition, many studies adopt broad or theoretical approaches, with less emphasis on real-world, firm-level analysis. There is a lack of detailed, case-based evidence showing how digital technologies are actually used in daily logistics operations and how they contribute to resilience during disruptions. This gap is particularly relevant in port-based logistics environments, where firms must respond quickly to changing conditions.

Furthermore, while existing frameworks discuss digital capabilities and resilience, they are rarely examined within the context of Indian logistics SMEs or linked to practical operational realities.

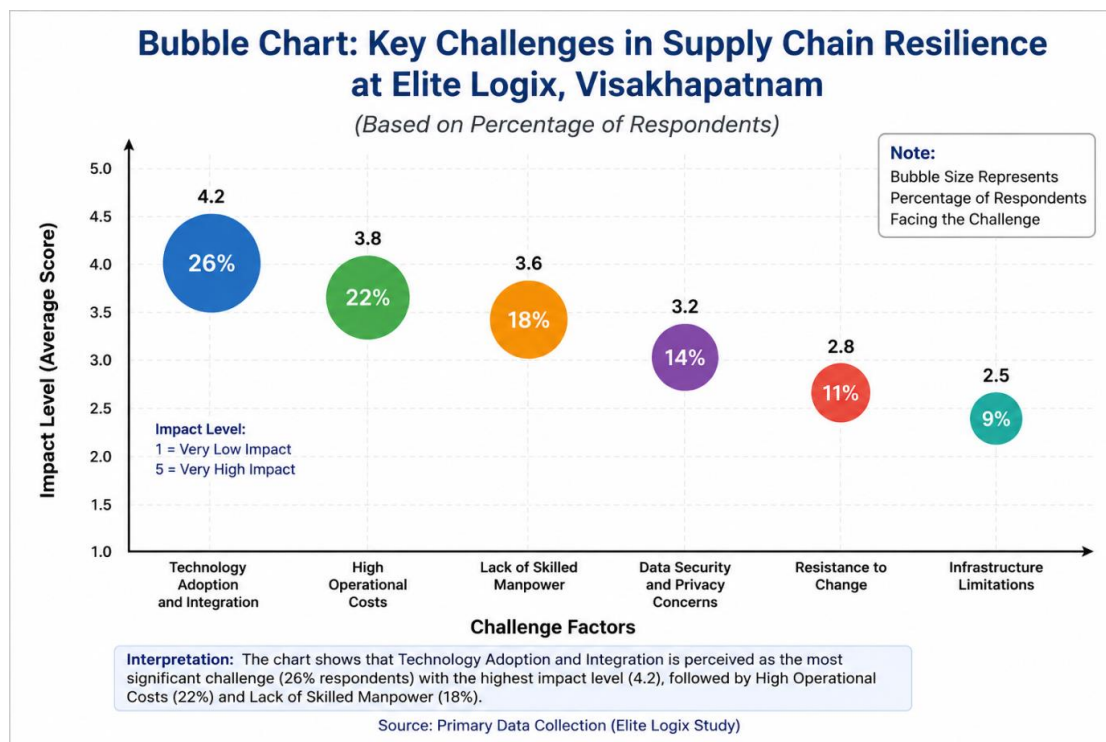
This study addresses these gaps by focusing on EliteLogix, a logistics firm in Visakhapatnam. Through a case-based, mixed-method approach, it provides practical insights into how digital tools support supply chain resilience in a small-scale, real-world setting, contributing to a better understanding of the link between theory and practice.

5.1 Suggestions

The findings of this study show that digital transformation has a positive influence on logistics operations and supply chain resilience. However, the study also reveals that there are areas where improvement is still needed. Based on the responses collected through the questionnaire and the observations made during the internship, several practical suggestions can be recommended for improving operational efficiency, coordination, and resilience within the organization.

One of the most important recommendations is the need to strengthen employee training related to digital systems and technologies. Although employees are already using digital tools in daily operations, some responses indicated that training is not fully sufficient. During the internship, it was observed that many operational activities rely heavily on practical experience and informal learning rather than structured training programs. In the long term, this may affect consistency and efficiency, especially when dealing with disruptions or technical problems. Management should therefore organize regular training sessions to improve employees' digital skills and familiarity with logistics technologies. Practical

workshops and continuous learning opportunities can help employees adapt more easily to changing systems and operational requirements.



Another major recommendation is the improvement of real-time visibility across logistics activities. The study found that visibility is one of the strongest benefits provided by digital transformation. Employees agreed that digital systems help them track operations more effectively and improve access to information. However, the company can further strengthen this capability by improving integration between communication systems, tracking systems, and operational platforms. Better visibility would allow management to monitor shipments more accurately, identify delays earlier, and respond more quickly to operational challenges. This becomes especially important during periods of disruption when immediate information and fast decision-making are necessary.

The organization should also focus on strengthening coordination and communication among employees and operational partners. Logistics operations involve multiple interconnected activities, and delays in communication can negatively affect service delivery. The findings show that digital tools already improve coordination to a certain extent, but there is still room for improvement. Management can encourage more consistent use of digital communication platforms to ensure smooth information sharing between departments, transport partners, and clients. Better communication can reduce misunderstandings, improve response time, and support operational continuity during disruptions.

In addition, the company should continue investing gradually in digital technologies that support flexibility and responsiveness. The recent global disruptions discussed in the study, including the COVID-19 pandemic, the Russia–Ukraine conflict, and tensions involving the United States, Israel, and Iran, have shown that logistics operations are highly vulnerable to external shocks. These disruptions created transportation delays, uncertainty in global trade, fuel price fluctuations, and supply shortages across many industries. In such conditions, organizations that rely entirely on traditional methods may struggle to respond effectively. The adoption of digital tools can help organizations become more flexible by improving planning, monitoring, and decision-making processes.

Management should also pay attention to reducing barriers that affect digital adoption. The findings suggest that certain challenges still exist, including operational limitations, lack of advanced training, and partial utilization of digital systems. These barriers may prevent the organization from fully benefiting from available technologies. Addressing these issues may require gradual investment in technology infrastructure, better technical support, and stronger commitment toward digital integration. Even small improvements in digital capability can significantly improve operational performance and resilience over time.

Another recommendation is the need to develop a stronger disruption management approach within logistics operations. The study indicates that digital tools help employees respond to disruptions more effectively, but resilience also depends on preparedness and planning. The company can strengthen resilience by developing contingency plans for operational disruptions, transportation delays, and communication breakdowns. Digital systems can support this process by enabling faster access to information and helping management react more quickly during unexpected events.

The organization should also focus on maintaining a balance between operational efficiency and resilience. Traditionally, many logistics firms focused mainly on cost reduction and efficiency. However, recent global disruptions have shown that efficiency alone is not enough if organizations are unable to adapt during crises. Therefore, managers should prioritize flexibility, adaptability, and continuity alongside operational performance. Digital transformation should not only be viewed as a tool for efficiency but also as a strategic approach for building long-term resilience.

Finally, it is recommended that logistics organizations continuously evaluate and improve their digital practices. Technology and business environments continue to evolve rapidly, and organizations must adapt accordingly. Continuous assessment of digital systems, employee capabilities, and operational performance can help identify areas that require improvement.

This will support sustainable operational growth and help organizations remain competitive in increasingly uncertain business environments.

5.2 Implications of the Study

This study has important practical, managerial, and academic implications. The findings contribute to a better understanding of how digital transformation supports supply chain resilience within the logistics sector, particularly in the context of smaller logistics organizations operating in India.

From a practical perspective, the study demonstrates that digital technologies can significantly improve logistics operations even within smaller firms. The results show that employees recognize the value of digital tools in improving visibility, coordination, communication, and operational responsiveness. This suggests that digital transformation is no longer limited to large multinational companies with advanced infrastructure. Smaller logistics firms can also benefit from adopting digital systems to improve operational performance and manage disruptions more effectively.

The study also highlights the growing importance of resilience within supply chain management. In the past, many organizations focused mainly on operational efficiency and cost minimization. However, disruptions such as the COVID-19 pandemic and geopolitical conflicts revealed that highly efficient systems may still become vulnerable during crises if they lack flexibility and adaptability. The findings of this study reinforce the idea that resilience has become an essential component of modern supply chain management.

From a managerial perspective, the study provides useful insights for decision-makers in logistics organizations. The findings indicate that investment in digital technologies can improve coordination and support faster responses during disruptions. Managers can use these insights to strengthen operational planning, communication systems, and risk management strategies. The study also emphasizes the importance of employee readiness and training in ensuring successful digital adoption. Without proper understanding and usage of digital systems, organizations may struggle to fully benefit from available technologies.

Another important implication of the study relates to supply chain visibility and agility. The findings support the idea that real-time information and effective communication improve the ability of organizations to respond quickly to operational challenges. This aligns with the concept of agility discussed in the literature review, where responsiveness and flexibility are considered important capabilities of resilient supply chains. Organizations that improve

visibility and coordination through digital systems are likely to manage disruptions more effectively than those relying mainly on traditional operational methods.

Academically, the study contributes to the existing literature on digital transformation and supply chain resilience within the Indian logistics sector. Many previous studies have focused primarily on large-scale organizations or multinational supply chains, while smaller logistics firms remain less explored. By focusing on a smaller organization operating within the Indian logistics environment, the study provides practical insights into how digital transformation functions in real operational settings.

The study also supports the theoretical perspectives discussed in Chapter Two, particularly the concepts related to supply chain resilience, agility, visibility, and adaptability. The findings indicate that digital transformation improves operational responsiveness and coordination, which are important characteristics of resilient supply chains. This strengthens the relevance of the theoretical framework used in the study.

In addition, the research reflects the increasing relevance of digital transformation within the Indian logistics sector. Government initiatives such as PM Gati Shakti and the National Logistics Policy emphasize modernization and digital integration within logistics and infrastructure systems. The findings of this study suggest that digital adoption can contribute positively to operational resilience and efficiency, supporting broader efforts toward modernization within the sector.

Overall, the implications of the study extend beyond a single organization and provide broader understanding for managers, researchers, and policymakers interested in supply chain resilience and digital transformation in logistics operations.

5.3 Conclusion

The present study examined the relationship between digital transformation and supply chain resilience in the Indian logistics sector, with particular focus on EliteLogix, Visakhapatnam. The study was conducted against the background of increasing global disruptions that exposed vulnerabilities in supply chains and highlighted the growing importance of resilience within logistics operations.

The research findings indicate that digital technologies are actively used within the organization and contribute positively to operational performance. Employees generally agreed that digital systems improve visibility, communication, coordination, and decision-making within logistics activities. These capabilities are important in ensuring smoother operations and maintaining continuity during periods of uncertainty and disruption.

One of the major conclusions of the study is that digital transformation strengthens supply chain resilience by improving the organization's ability to respond to operational challenges. The findings suggest that access to real-time information and improved coordination allows employees to react more effectively during disruptions. This became particularly relevant in the context of recent global crises such as the COVID-19 pandemic, the Russia–Ukraine conflict, and geopolitical tensions affecting international trade and transportation routes.

The study also concludes that supply chain resilience is no longer limited to large organizations with advanced technological infrastructure. Even smaller logistics firms can improve resilience through the adoption of basic digital tools and systems. The findings show that digital transformation does not necessarily require highly complex technologies to produce positive operational outcomes. Simple digital practices related to communication, tracking, and coordination can already contribute significantly to improving efficiency and responsiveness.

At the same time, the study identified certain barriers affecting digital adoption. Some employees indicated that training and technical support remain limited, which may reduce the effectiveness of digital systems. This suggests that digital transformation is an ongoing process rather than a one-time implementation. Organizations must continue improving employee capabilities, system integration, and operational readiness in order to fully benefit from digital technologies.

The study further highlights the importance of balancing operational efficiency with resilience. Traditional supply chain models focused mainly on reducing costs and maximizing efficiency. However, recent disruptions have demonstrated that organizations must also prioritize adaptability, flexibility, and preparedness for unexpected events. Digital transformation supports this shift by enabling faster communication, better visibility, and improved decision-making capabilities.

Overall, the study concludes that digital transformation plays a significant role in strengthening supply chain resilience within logistics operations. The findings suggest that organizations that invest in digital systems and continuously improve their operational capabilities are more likely to manage disruptions effectively and maintain long-term operational continuity in uncertain business environments.

5.4 Scope for Future Research

Although the study provides useful insights into digital transformation and supply chain resilience within the logistics sector, there are still several areas that future researchers can explore in greater depth.

The present study focused on a single organization with a relatively small number of respondents. Future studies can expand the sample size by including multiple logistics companies operating in different regions of India. A larger sample would provide broader understanding and allow more detailed comparison of digital adoption practices across organizations.

Future research can also apply more advanced statistical methods such as correlation analysis, regression analysis, or structural equation modelling to examine the relationship between digital transformation and supply chain resilience more deeply. Such methods would be more appropriate with larger datasets and could provide stronger empirical evidence regarding the impact of digital technologies on operational performance and resilience.

Another area for future research is the examination of specific digital technologies individually. The present study discussed digital transformation in a general sense, but future studies may focus specifically on technologies such as Artificial Intelligence (AI), Internet of Things (IoT), blockchain, cloud computing, or big data analytics. This would provide clearer understanding of how each technology contributes to logistics efficiency and resilience.

Future researchers may also compare digital transformation practices between small, medium, and large logistics organizations. Such comparative studies can help identify differences in operational capabilities, technological readiness, and challenges faced by organizations of different sizes.

In addition, future studies can explore the long-term impact of geopolitical conflicts and global disruptions on logistics operations and supply chain resilience. The disruptions caused by the COVID-19 pandemic, the Russia–Ukraine conflict, and tensions in the Middle East continue to influence global trade and transportation systems. Further research may examine how logistics organizations adapt to these changing conditions over time.

Researchers may also investigate the role of government policies and infrastructure development in supporting digital transformation within the logistics sector. Policies related to digital integration, transportation infrastructure, and trade facilitation may significantly influence the ability of logistics firms to improve resilience and operational efficiency.

Overall, future research can continue building on the findings of this study by exploring broader contexts, larger samples, and more advanced analytical approaches related to digital transformation and supply chain resilience.