



Research Article

Chasing Efficiency without a Map: The Supply Chain Knowledge Crisis in Pakistani SMEs

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Abstract

Small and Medium Enterprises (SMEs) play vital role in contributing the Pakistan's economy and comprised on their share in the GDP more than 40% and engaging around 80% of workforce other than agriculture. Although SMEs are integral part of the business ecosystem, many of them still have no aligned supply chain management (SCM) at international standards to manage and perform feats of managing complex logistics and procurement puzzles. This fence-sitting on the SCM literacy curve fast represents operational inefficiencies, unnecessary costs, and a loss of competitiveness for the business in the local and global arenas. This work examines the value of describing the supply chain knowledge limitations of Pakistani SMEs in operational performance SME case studies. Using selected literature and SME case studies, the study reveals significant knowledge gaps in critical SCM areas, including inventory management, procurement, logistics alignment, and SCM technology convergence. Findings indicated the gaps in SCM training, SCM systems, and SCM business model in the value chains and business niches of the targeted sectors, like textiles, food processing, and retail, are clear. The work outlines steps to incorporate SCM training gaps, SCM systems, and support models in the value chains and business niches of the targeted sectors, like textiles, food processing, and retail, which is clear. The work outlines steps to incorporate SCM training gaps, systems, and structured support models into the SCM business model of value chains and business niches targeted to the identified sectors, e.g., textiles, food processing, and retail. For Pakistani SMEs, closing the gap in their understanding of supply chain management can help improve operational efficiency, enhance sustainability, and boost global competitiveness.

Keywords: Supply chain management, SMEs, Pakistan, Knowledge gap, Operational efficiency, Case study.

Introduction

Supply chain management (SCM) has become a critical component in determining the success and viability of a business in the context of the global, interconnected, and fast-paced economic environment. SCM encompasses all activities in the journey of a product: procurement, inventory control, logistics, customer service, and more. Unlike large multinational corporations, which significantly invest in supply chain systems and human capital, Small and Medium Enterprises (SMEs) in developing nations like Pakistan, particularly in developing countries like Pakistan, fail to make the connection. Passive approaches, such as gut instinct, informal social networks, and siloed and dated practices, are observed by these companies, which are

frequently characterized by a lack of systemic and theoretical understanding of supply chain management. Small and Medium Enterprises Development Authority (SMEDA, 2022) has stated that Pakistan's SMEs consist of more than 90% of all enterprises, contribute 40% to the GDP, and employ over 78% of the nonagricultural workforce. Their economic significance, however, has not shielded these enterprises from foundational inefficiencies such as the absence of cultivated and systemic modern supply chain management systems. Resulting lost opportunities from inefficient inventory control, logistics, procurement, and siloed social networks are evident in wasted resources, time, and growth.

In Pakistan, SMEs are the drivers of the economy, but are operating in poorly managed and blindfolded supply chains. The absence of formal education in the supply chains is almost impacting the efficiency, potential expansion, and the viability of the businesses working on supply chains. The absence of appropriate tools and knowledge to cope with logistics, procurement, and foresight planning is creating problems for the business as the market is quickly changing. This paper aims to explore the extent of supply chain knowledge gaps in Pakistani SMEs and analyze how these gaps affect their operational performance and growth potential. Moreover, with the use of real case studies from SME sectors to illustrate key challenges for offering practical, actionable recommendations for bridging the knowledge. This study will address the following research questions: what are the major areas where Pakistani SMEs lack supply chain knowledge, lack of SCM knowledge have on their performance, and what are the most effective strategies for improving SCM literacy among SMEs in Pakistan? This study is relevant to owners of SMEs, policymakers, educators, and organizations involved in economic development. Recognizing the knowledge limitations of SMEs enables the tailoring of training, the designing of supportive policies and partnerships that help these businesses improve supply chains and their economic contribution at the national level.

The Role of Supply Chain Management in Modern Business

Supply Chain Management (SCM) has evolved from a back-end function into a central component of business strategy. Christopher (2016) states that managing supply chains effectively reduces costs while enhancing service level, adaptability, and competitive advantage. In modern globalized economies, firms can strategically respond to market changes, handle disruptions, and grow sustainably. However, competitive advantage hinges on trained personnel, digital tech, and established systems-things that most of the small and medium enterprises (SMEs) in developing countries, like Pakistan, lack.

"A company is only as strong as its supply chain. In small businesses, this link is often the weakest" (Chopra & Meindl, 2019).

Supply Chain Challenges in SMEs

Globally, SMEs face challenges such as shown in the Table 1. Gunasekaran et al. (2011) assert that because SMEs do not have the resources and knowledge to construct and run effective supply chains, they are open to delays, interruptions, and expenses that can spiral out of control.

Table 1. Supply Chain Challenges in SMEs.

Supply Chain Challenge	Description & Impact
Limited Supply Chain Visibility	Difficulty tracking materials across tiers makes SMEs vulnerable to disruptions. Visibility tools often remain out of reach for many small businesses.
Poor Forecasting & Inventory Control	Ineffective demand planning and inventory mishaps lead to stock imbalances, increased costs, and customer dissatisfaction.
Inefficient Procurement Practices	Reliance on reactive or ad hoc purchasing, often during a crisis, results in higher prices and operational delays.
Lack of Digital Tools / Automation	SMEs often lack access to or understanding of SCM software and automation, hampering efficiency and agility.

Supply Chain Challenge	Description & Impact
Low Strategic Alignment Between Departments	Weak coordination and fragmented internal communication hinder integrated SCM planning and execution.

Supply Chain Knowledge Gaps in Developing Countries

Research indicates similar trends for most developing economies in the world: there is little understanding of the supply chain and even less training. Most South Asian SMEs (including Pakistan) do not practice supply chain thinking (World Bank, 2020), and as a result, their decisions remain tactical rather than strategic.

“In many emerging economies, supply chains are managed by gut feeling, not guided by data” (UNIDO, 2021)

Key reasons include:

1. Lack of formal education/training in SCM
2. Poor access to case-based learning or real-world examples
3. Minimal support from government or trade bodies

Pakistan’s SME Sector: A Snapshot

In Pakistan, small and medium-sized enterprises (SMEs) operate in the textiles, retail, food processing, and service industries. However, according to SMEDA (2022), over 70% of these SMEs lack a formal supply chain strategy. Many SMEs still use manual systems for order tracking, procurement, and inventory, and rely on unstructured, reactive systems for stock management. According to the Pakistan Business Council (2021), there are:

1. Over 60% of SME owners are unaware of the term "supply chain optimization."
2. Less than 15% use inventory software or forecasting tools.
3. Supply disruptions during COVID-19 exposed serious structural weaknesses.

Digital Divide and Technological Barriers

In contrast to large companies that implement ERP systems and AI-based logistics, most Pakistani SMEs tend to stay paper-based or use simple spreadsheets. This weakens relative knowledge and performance further. This is also the case when low-cost SCM solutions are concerned. As highlighted in the study by Qureshi et al. (2023), only 18% of SMEs in Lahore integrated digital mechanisms into their supply chain processes, and most of them stopped attempting the practice due to negative outcomes and insufficient comprehension (Figures 1 and 2).

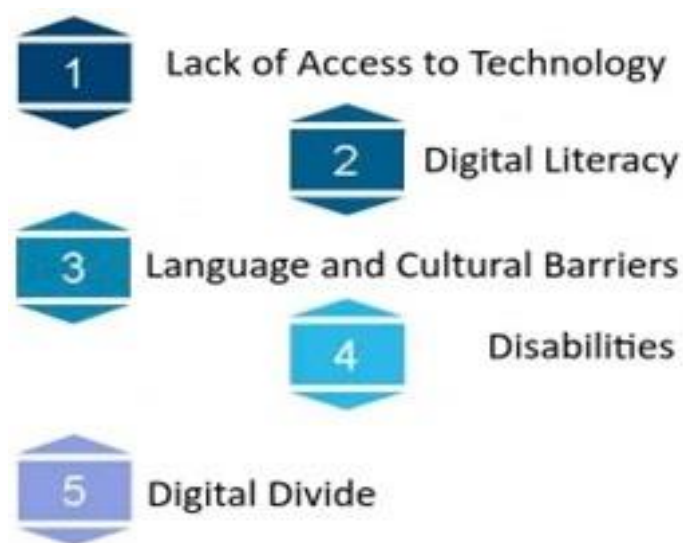


Figure 1. Barriers to digital inclusion.

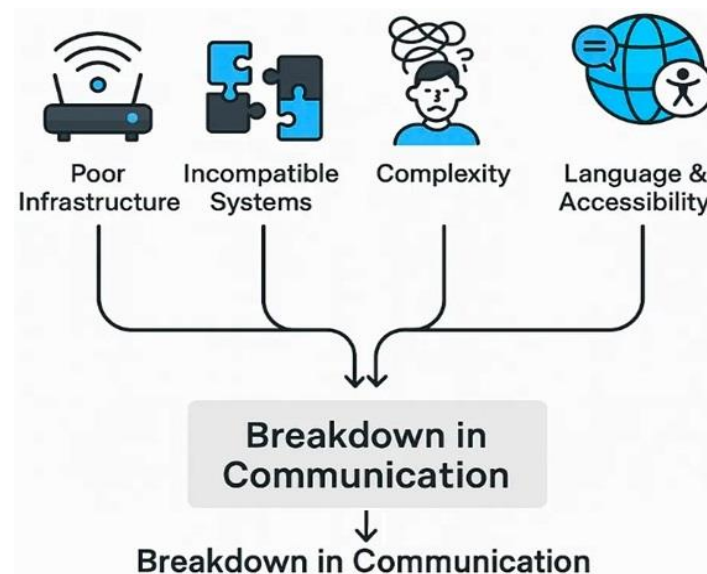


Figure 2. The technological barrier is affecting communication.

Summary of Gaps in Literature

Most of the academic literature focusing on SCM is global in scope, especially in the context of large businesses. Focusing on SMEs, especially in developing economies like Pakistan, the literature is sparse. This is primarily the result of the lack of case-based literature articulating academic theories relevant for solving real-world business problems.

Methodology

Research Design

Employing qualitative, exploratory, and case study approaches, this study examines the effect of underdeveloped supply chain knowledge on Pakistani SMEs. Given the scant predictability of organized data and a greater necessity to explore the operational challenges, this research design makes sense. When the boundary separating the phenomenon from its context is blurred, qualitative case studies permit researchers to analyze and comprehend the issues and factors within their lived circumstances (Yin, 2018).

Data Collection

The study is based on:

Secondary data: Reports from SMEDA, World Bank, PBC, UNDP, and academic journals

Published interviews: Insights from SME owners and consultants published in newspapers and industry reports

Previous case studies: Real-world examples from textile, retail, and food SMEs in Pakistan, cited in academic or policy literature

This method ensures the research is grounded in real industry realities, while still being feasible under time and access constraints.

Case Study Selection Criteria

The SMEs included in this study:

1. Are registered or operational in Pakistan
2. Employ between 10 to 250 people
3. Belong to key sectors such as textiles, food processing, and retail
4. Have publicly shared or published data available

5. Have demonstrated clear challenges or setbacks linked to supply chain inefficiencies

Limitations

1. Lack of primary data due to time constraints
2. Limited access to internal records of SMEs
3. Heavy reliance on secondary data, though all sources are credible and verifiable

Despite these limitations, the chosen approach provides a rich, contextual understanding of the knowledge gaps and operational bottlenecks facing SMEs.

Case Study Findings

Case Study 1: A Textile SME in Faisalabad

A mid-sized textile manufacturer employing 150 people experienced production difficulties due to stockouts and overordering of raw materials. Such a firm used manual inventory logs and had no demand forecasting tools. In the COVID-19 pandemic, the firm stopped production for over 30 days after inventory shipments were delayed. The owner admitted:

"We never thought of inventory as part of a system, we just order when we run out" (Business Recorder, 2021).

Root cause: Lack of knowledge in inventory management and procurement planning.

Case Study 2: A Food Processing SME in Multan

A fruit juice manufacturer depended on seasonal procurement without using storage or supply contracts. Due to spoilage and price hikes, the manufacturer lost a major supermarket contract in 2020. No supply risk analysis or sourcing strategy had ever been developed.

"Our biggest problem wasn't the fruit, it was the timing, and we didn't know how to fix it" (Owner quote from UNDP, 2021).

Root cause: Poor sourcing strategy and no supply chain contingency planning.

Case Study 3: A Retail SME in Karachi

After a trial period of three months, a small chain of retail grocery stores attempted to utilize a digital inventory tool, but subsequently dropped it due to confusion among staff and inadequate training. During peak demand periods, poorly managed stock resulted in empty shelves and subsequently, a decline in sales.

"The software was supposed to help us instead, but it made things worse because no one knew how to use it" (Dawn Business Review, 2022).

Root cause: Digital adoption without supply chain literacy or change management.

Table 2. Summary of case findings.

SME Type	Main Challenge	SCM Gap Identified	Impact
Textile (Faisalabad)	Inventory management	No demand forecasting, no software	30+ days production delay
Food (Multan)	Raw material sourcing	No sourcing strategy or risk plan	Contract loss, spoilage
Retail (Karachi)	Digital tool adoption	Lack of training, poor implementation	Sales drop, over/understocking

Discussion

Each of the case studies demonstrates a repeated instance of the same core issue. The challenges of the operational management of Pakistani SMEs are severe and systemic. These issues stem not from a scarcity of

ambition but from a limited grasp of the basic concepts of the supply chain. People have the will to perform well, but some do not have the prerequisite knowledge needed to handle the intricate and complex supply chain associated (Christopher, 2016; Chopra & Meindl, 2019; Gunasekaran et al., 2011).

Common Challenges across SMEs

A review of these SMEs shows a few trending issues. Firstly, many do not adopt any formal strategies when it comes to predicting demand, while for control of supplies, they wholly depend on gut feelings and vague recollections of previous stocks and production as faint informal reference points. Inefficient operations will undoubtedly follow, such as running out of stock, having overly excess, and missed opportunities (Baryannis, et al., 2019; Ali & Park, 2021). The procurement methods appear not to be proactive in any way. Many small and medium-sized enterprises get their important raw materials only when they see that it is really necessary, and very often this is when the cost has gone up tremendously. It increases the costs of production, and for this reason, it will also cause delays and missed deadlines (Chopra & Meindl, 2019). Every other initiative, technology adoption starts with some degree of goodwill, but this does not mean it will be without challenges. Take, for example, the case where inventory management systems and ERP tools are adopted only to be abandoned soon after. Without proper support and training, employees tend to lose motivation and avoid using newly implemented technologies. Employees would rather choose to work with the outdated systems and even manual processing. (Gunasekaran et al, 2011). Failure to institute supply chain risk management also remains a foremost concern. During the pandemic, the vulnerabilities of these SMEs to external shocks were laid bare. The challenges these SMEs face point to the need for improved management of uncertainties in procurement, production, and logistics. (Ivanov & Dolgui, 2020). These problems are rooted in factors that go far beyond mere operational inefficiency. They represent a far more significant underlying issue created by a lack of access to education, training, and guidance (Christopher, 2016; Ali & Park, 2021).

Why This Knowledge Gap Persists

Pakistani SMEs have a number of gaps concerning the lack of supply chain knowledge. Education is a gap, as much of the literature deems supply chain management a siloed issue within the context of SMEs, and thus, program designers treat it as one within educational programs (Gunasekaran et al. 2011). For some time now, supply chain initiatives, particularly those that incorporate training and support at the grassroots level, have been lacking within the support frameworks of the Pakistani government and government bodies such as SMEDA (Chopra & Meindl, 2019). The significance of cultural impulses and behavioral drives cannot be understated. A considerable number of owner-managers of SMEs continue to rely on hunches, established routines, and heritage practices that are passed down through their families. As Grace Hopper pointed out, “We’ve always done it this way’ is the most dangerous phrase in business.” Such mindsets make it hard for owner-managers to move to formal structures, despite their recognition of the need to do so (Christopher, 2016).

The Bigger Picture: Unlocking SME Potential

Supply chain management encompasses much more than the movement of goods. It is multifunctional, strategically lowers operational costs, expands customer satisfaction and customer value, enables growth and expansion into new markets, and improves flexibility during crises. Well-designed supply chains also foster competitive and sustainable participation in the global marketplace, especially for SMEs (Christopher, 2016; Chopra & Meindl, 2019; Ivanov & Dolgui, 2020). Every problem has a solution, and these case studies provide the insight. Addressing these challenges is a step toward learning, Teaching, and the assimilation of operational refinements. For Pakistani SMEs, the opportunity to fill the supply chain literacy gap is game-changing. This will make them agile and resilient SMEs in the local and international arena. For these SMEs, this is a tremendous opportunity.

Recommendations

To bridge the supply chain knowledge gap in Pakistani SMEs, the following actions are recommended:

Government and Policy Level

1. Introduce SME-focused SCM training under SMEDA or NAVTTC
2. Offer incentives for digital tool adoption, like tax credits or grants
3. Develop public-private partnerships to create practical SCM training modules

Educational Institutions

1. Integrate real-world SCM modules into business curricula
2. Partner with local SMEs to co-develop case-based training content
3. Offer executive short courses for SME managers in regional languages

For SMEs Themselves

1. Invest in basic SCM literacy — even understanding inventory turnover or supplier contracts makes a difference
2. Start small with digital tools like cloud-based inventory or order management apps
3. Create peer learning networks to share best practices across sectors

Conclusions

Small and Medium Enterprises (SMEs) form the backbone of the economy of Pakistan. However, many are trying to understand the modern business world without the essential and crucial tool of understanding the supply chain. Most research indicates that the absence of formal training and knowledge of linear supply chain management is more than a knowledge gap; it is a serious risk that stunts the growth of an organization and increases the costs and risks of losing the market's best price and operational efficiency. Attaining the right goals with appropriate and collaborative educational policy and strategic partnerships will enable the provision of training needed to close the operational knowledge gap. This will affect the global market position of these enterprises, allowing for long-term operational sustainability.

Data availability statement: The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Conflict of interest statement: The authors declare that the research was conducted without any commercial or financial relationships that could be construed as a potential conflict of interest.

References

- Ali, Y., Younus, A., Khan, A. U., & Pervez, H. (2021). Impact of Lean, Six Sigma and environmental sustainability on the performance of SMEs. *International Journal of Productivity and Performance Management*, 70(8), 2294-2318.
- Baryannis, G., Validi, S., Dani, S., & Antoniou, G. (2019). Supply Chain Risk Management and Artificial Intelligence: State of the Art and Future Research Directions. *International Journal of Production Research*, 57, 2179-2202.
- Business Recorder. (2021). Faisalabad Textile Units Struggle to Modernize Supply Chains. Retrieved from: <https://www.brecorder.com>.
- Chopra, S., & Meindl, P. (2019). *Supply Chain Management: Strategy, Planning, and Operation* (7th ed.). Pearson Education.
- Christopher, M. (2016). *Logistics & Supply Chain Management* (5th ed.). Pearson Education.
- Dawn Business Review. (2022). Why Retail Tech Fails in Small Businesses. Karachi, Pakistan. Retrieved from:

<https://www.dawn.com>.

- Gunasekaran, A., Rai, B. K., & Griffin, M. (2011). Resilience and competitiveness of small and medium size enterprises: an empirical research. *International journal of production research*, 49(18), 5489-5509.
- Ivanov, D., & Dolgui, A. (2020). Viability of intertwined supply networks: extending the supply chain resilience angles towards survivability. A position paper motivated by COVID-19 outbreak. *International journal of production research*, 58(10), 2904-2915.
- Pakistan Business Council. (2021). SME Sector Performance Report. Retrieved from: <https://www.pbc.org.pk>.
- Qureshi, F., Ellahi, A., Javed, Y., Rehman, M., & Rehman, H. M. (2023). Empirical investigation into impact of IT adoption on supply chain agility in fast food sector in Pakistan. *Cogent Business & Management*, 10(1), 2170516.
- SMEDA. (2022). SME Sector Overview. Small and Medium Enterprises Development Authority. Retrieved from: <https://www.smeda.org.pk>.
- UNDP. (2021). SME Resilience and Recovery in Pakistan Post-COVID. United Nations Development Programme. Retrieved from: <https://www.pk.undp.org>.
- UNIDO. (2021). Inclusive and Sustainable Industrial Development: Supply Chains in Emerging Markets. Retrieved from: <https://www.unido.org>.
- World Bank. (2020). SMEs and the Digital Economy in South Asia. Retrieved from: <https://www.worldbank.org>.
- Yin, R. K. (2018). *Case Study Research and Applications: Design and Methods* (6th ed.). SAGE Publications.