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Impact of Supply Chain Activities on Productivity Performance in the Textile Industry of Pakistan



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Abstract

Supply chain management plays a pivotal role in the textile industry, attracting considerable attention from industry experts and researchers, particularly regarding the challenges encountered in the final phase of e-commerce. This research aimed to investigate how crucial supply chain elements influence productivity performance within Pakistan's textile sector. The specific objectives were to pinpoint key supply chain activities adopted by this industry, evaluate their impact on productivity, and scrutinize the hurdles faced by companies in implementing these practices effectively. Employing the Theory of Constraints, the research utilized a descriptive design to gather data and address the research questions. The study involved participants from Pakistan's textile industry, selected through random sampling, resulting in a sample size of 152 as per Morgan's table. An adapted questionnaire featuring closed-ended questions was employed for online data collection, with subsequent analysis conducted using SPSS. The study's outcomes hold significance for researchers, supply chain professionals, and stakeholders. Due to limitations like restricted employee access and the absence of face-to-face meetings, an online questionnaire was chosen. The study's independent variables encompassed supply chain activities such as Information Sharing, Inventory Management, Logistics Management, Capacity Planning, and Innovative Supply Chain, while Productivity Performance served as the dependent variable. Results confirmed a positive and substantial impact of these independent variables on productivity performance.

Keywords

Information Sharing, Inventory Management, Logistics Practices, Capacity Planning, Innovative Supply Chain and Productivity Performance.

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Chapter 1

Introduction

1.1 Background of Study

The creation of a supply chain network for manufacturing businesses is becoming increasingly important. The production network implies common coordination among manufacturers and specialist cooperatives so that remotely and internally available aptitude may be utilized across the whole inventory network (Liu et al., 2020). Textile companies have realized that to increase efficiency, they must expand their engagement with other inventory network partners (Gimenz and Ventura, 2019). This study investigated the impact on company yield at various levels of inventory network features, such as within-item and interaction inclusion (Zhao et al., 2018). Our findings demonstrate a beneficial influence on the efficient execution of inside and cycle intermingling. Financial growth is beneficial for domestic, item, and cycle assembly (Stratman and Roth, 2021). Furthermore, the findings indicate that technique assembly is now more effective in promoting financial development in the event of increased demand vulnerability. Given the unpredictability of interest, organizations are recommended to strengthen cycle arrangements to aid the seriousness of the production network (Cox et al. 2020).

The detailed presentation of the business is critical to the Inventory network (Huo et al., 2019). Organizations that collaborate and interact fully with their vendors and purchasers will thrive. The production network refers to providers' joint co-activity with their suppliers and clients to increase inward and outer capacity in the inventory network (Flynn et al. 2020). Inventory network partners collaborate to support competency and lead to increased seriousness due to shopper interest (Kumar et al., 2017). Inventory networks are also seen as a vital force in organizations' favor. It has been demonstrated that the organization's working and monetary productivity have significantly enhanced (Mohammadi et al., 2019). Most operations, including the acquisition of unprocessed components, quality management, and the transportation of things, are no longer performed within the limits of the organization, and have gone to the level of the inventory network. Organizations have recognized their inability to act freely and have sought the assistance and involvement of their merchants and customers, as well as various delegates of their production network (Bavarian et al., 2017). Specialists identified the benefits of a production network and

coordinated efforts among production network members (Flynn et al., 2010). One of the key determinants of company success is the production network (Van der Vaart and van Donk, 2018).

The production network can have an immediate and indirect influence on hierarchical productivity. Inspiring engagement in inventory network activities contributes to increased creation (Kim, 2009; Kumar et al., 2017). Production networks can eventually allow organizations to identify and remove operations that have little value to the general inventory network. This will work on the inventory of products, reduce production costs, and contribute to the further developed progression of interest and improved consumer loyalty (Rosen Zweig et al., 2019). The relationship between inventory network and company performance, as well as the relevant global and insurance perspectives, has several perspectives (Huo et al., 2020). The influence of various estimations on outcomes is dependent on protected standards (Huo and Zhao, 2022). Several studies, for example, have found that the effect of propagation on working proficiency is stronger than the effect of outer joining (Li, 2017). The potential viewpoint is concerned with underlying considerations, as well as climatic conditions or commercial tactics. This viewpoint shows that the relationship between inventory network and business achievement can influence these criteria (Wong et al., 2018).

1.2 Research Gap Analysis

Among the changing points explored by specialists in the recent past have been factors influencing supply chain productivity performance (Dubey et al., 2021). Various researcher in Pakistan have also conducted preliminary research to study various aspects of the textile industry supply chain (Munir et al., 2020). Nevertheless, the extent of research conducted in Pakistan to explore the impact of supply chain activities on the efficient productivity performance of the country's textile industry sector has been considerably limited. In a non-industrial nation like Pakistan, only a handful of scholars have made efforts to comprehend the connection between supply chain activities and effective implementation, highlighting a notable gap in research (Iqbal et al., 2019). Hence, this study has considered factors (logistics management, inventory management, capacity planning and integration) as independent variables to investigate their relationship with supply chain in textile industry of Pakistan.

1.3 Problem Statement

The textile industry in Pakistan has undergone significant transformations lately, including a decline in productivity growth, reduced sales and industry scope, and increased competition from

foreign markets and products. The escalation of global competition in textile industry and material imports, combined with the removal of protective barriers, poses additional challenges to the strategic capabilities of this sector. To rebuild the strategic advantage in Pakistan's textile industry, the sector should improve its overall infrastructure in a modern and innovative way, just so the requirements of its materials and process for manufacturing can first be rapidly established. Collaborating with individuals possessing industry-specific knowledge will facilitate the development of a supply chain manufacturing strategy that aligns with the overall corporate plan of the textile industry, thereby driving multinational growth and fostering a networked manufacturing process.

Understanding operational management and manufacturing supply chain activities is crucial for enhancing the efficient distribution of goods. Every company must remain proactive to ensure an effective supply chain system, considering the continual changes and innovations in global goods. Notably, the Pakistan textile industry has witnessed significant shifts, including downward production trends leading to job reductions. Despite these changes, the textile industry in Pakistan continues to contribute economic value, primarily due to lower costs in specific regions.

The utilization of automated and innovative practices in Pakistan's textile industry can provide a competitive advantage over rivals in the sector by efficiently incorporating effective supply chain activities. This approach enables the industry to achieve optimal levels of productivity performance across all segments. To enhance current study variables such as information sharing, inventory management, logistics management, and capacity planning, it is essential to plan for a modernized and responsive supply chain system within the industry. This requires leveraging experience, skills, creative technologies, marketing, and innovation to maintain high levels of productivity performance. This research focused on the enhancement and execution of strategies to achieve productivity performance in the textile industry by integrating information sharing, inventory management, logistics management, and capacity planning. The aim of the research is to ensure these supply chain activities should be involved completely for growth of textile industry productivity.

1.4 Research Questions

- 1) What is the impact of information sharing on productivity performance the Pakistan's textile industry?

- 2) What is the effect of inventory management on productivity performance of Pakistan's textile industry?
- 3) What is the influence of logistics management on productivity performance of Pakistan's textile industry?
- 4) What is the contribution of capacity planning on productivity performance of Pakistan's textile industry?
- 5) What is the impact of innovative supply chain model on productivity performance of Pakistan's textile industry?

1.5 Research Objectives

- 1) To find the impact of information sharing on productivity performance of Pakistan's textile industry.
- 2) To find the effect of inventory management on productivity performance of Pakistan's textile industry.
- 3) To find the influence of logistics management on productivity performance of Pakistan's textile industry.
- 4) To find the impact of capacity planning on productivity performance of Pakistan's textile industry.
- 5) To find the impact of innovative supply chain model on productivity performance of Pakistan's textile industry.

1.6 Significance of the Research

This study investigates the influence the supply chain activities on productivity performance in textile sector of Pakistan's. The research has considerable implications in both philosophy and fact. The study adopts a positive philosophy for review of the interconnection (logistics management, inventory management, capacity planning, information sharing and innovative supply chain model) for productivity performance. This research uses a local textile industry as a sample to contribute to the supply chain productivity performance. Second, this investigation explores the clear connection between the supply chain and industry current performance in terms of growth and productivity. It also explores the direct link between supply chain variables and productivity performance. To identify the systemic dimensions, this research shows which factors have a greater effect on supply chain to gain productivity performance. For managers and corporate

decision making, the outcome of this analysis is important because it gives insight into strategies for the application of supply chain. This study implicitly strengthens the argument that factors such as logistics management, inventory management, capacity planning information sharing, and innovative supply chain model tend to lay a foundation for improved productivity performance. Furthermore, the study thus strengthens the argument that various factors are vital aspects that are extremely important to unleash productivity performance in the textile industry of Pakistan. This study will significantly assist stakeholders in the textile industry of twin cities of Pakistan in understanding the relationship between factors (logistics management, inventory management, capacity planning, information sharing and innovative supply chain model) and productivity performance.

Chapter 2

Literature Review

2.1 Introduction

The improvement of supply chain management practices has facilitated the ability of all businesses to effectively address customer challenges and improve their performance (Fokinas et al., 2018). The advantages of supply chain management encompass various aspects such as enhanced customer satisfaction, increased sales, improved product manufacturing, and a larger market share (Habib, 2019). The implementation of supply chain management initiatives aims to reduce costs, expand market share, and establish a solid foundation for organizations (Lockamy, 2017). The objective of the shop network is to provide some advantage to the end purchaser in terms of products and administration. Aside from monetary and data flows, there is a significant physical flow between inventory network members that includes raw components, work-in-process inventory, completed goods, and returned items (Doman, 2019). Dealing with these streams efficiently and productively necessitates the use of a framework to properly recognize, analyze, and organize the partnerships among the chemicals. Regardless, establishing production network reconciliation is not a straightforward task. As the number of people and cycles increases, this becomes increasingly difficult for a large gathering (Boman, 2020).

SCM functions were seen as fundamental for level turn of events. The SCM decision affects the market execution of the course of action. Some of these initiatives, such as lean inventory organization practice, supplier improvement, green inventory organization, and goods delivery, move quickly (Monga, 2016). According to Li et al. (2019), outstanding SC executives are predicted to gain an advantage. Pakistan's textile sector should adapt to new global market challenges and create both productive and responsive inventory chains to suit the current economic climate (Hashim, 2019). Many forward-thinking textile organizations have quickly adjusted to these challenges and introduced cutting-edge machines, created, and obtained data advances that can consistently coordinate with global clients and profit from the change (Granger, 2018). In any event, the rate of growth is nothing near good, and it is necessary to examine the firm to recognize the exhibition bounds that would decide the future success and ensure a key piece of the pie for Pakistan's items of textile (Siddique, 2020).

Globalization and the progress of innovation have resulted in more competitive market conditions. As a result, organizations have continuously changed and carried out activities that increase their market intensity (Chieh, H.C., 2020). One such sector is inventory network executives (SCM). Controlling the Inventory network legally has been a vital component of achieving similar benefits (CA). Thus, competition among organizations has changed over the years to supply chains. To that end, organizations have attempted to blend their homegrown jobs with their SC partners and keep on focusing on feasible benefit development (Costa, C., and Rubio, S., 2020). SCM has evolved to increase corporate responsibility. The implementation of effective supply chain activities has played a crucial role in facilitating the progress of smaller organizations, enabling them to better cater to the demands of their clients (Sundaram, D., 2018). Supply chain management offers a range of advantages, including enhanced customer loyalty, increased sales volume, improved product effectiveness, and a larger market share. The adoption of supply chain management practices aims to minimize expenses, enhance efficiency, and identify areas of strength within a company (Cusmano, L., 2018).

SCM exercises were seen as an indicator of the association's success. The technique's market results are influenced by the SCM practices chosen. Some of these strategies, for example, lean inventory network practice, provider development, the green inventory network, and the opposite planned operations, change quickly (Subramanian, N., and Gunasekaran, A., 2015). SCM is an organization of inventory network organizations dedicated to providing tools and expertise to compelling management. The organization consists of partners who have participated, either directly or indirectly, in the manufacturing and delivery of labor and goods to clients, encompassing both upstream and downstream activities. The primary objectives of supply chain management (SCM) are to enhance productivity, reduce inventory costs and lead times, expand market share, and engage in long-term strategic planning for the supply chain (Connelly, B.L., 2021). SCM practices refer to the methodologies employed by organizations to streamline their processes, also known as current practices or approaches used to effectively focus on the market and reinforce organizational operations (Li et al., 2016). Implementing SCM strategies may require adjustments to the organizational structure by fostering collaboration and integration of the internal capabilities of partner organizations.

2.2 Textile Industry of Pakistan

Pakistan's textile industry stands as the country's primary industrial sector and holds the eighth position globally in terms of textile production in Asia. This sector contributes 8.5% to Pakistan's GDP and employs nearly 45% of the country's population, including 38% of factory workers. As the world's fourth-largest cotton producer, Pakistan possesses the third-highest spinning capacity, accounting for 5% of the global spinning capacity, following China and India. The country boasts 1,221 ginning machines, 442 spinning machines, 124 large spinning units, and 425 small textile units. The strength of Pakistan's textile sector directly stems from its freedom and significance in the country's development landscape. In the fiscal year 2017-2018, textile exports amounted to \$3.5 billion, representing 6.5% of total cotton exports. Pakistan ranks as Asia's ninth-largest exporter of textile products and contributes significantly to the national economy. The textile sector's impact extends to the employment of approximately 45% of the general population. Moreover, textile exports witnessed a growth of \$4.4 billion in the same fiscal year. Additionally, Pakistan holds the position of the world's third-largest cotton consumer. The country is equipped with a total of 464 textile facilities, with PSX production lines accounting for 5% of the overall capacity.

The total creation area of material is 5.2 billion square meters. In Pakistan, worldwide brands of local textures include H&M, Levis's, Nike, Adidas, Jaguar, Target, and others. Karachi's textile industry has 364, 3616 Punjab textile units, and 116 Sindh textile factories of 38% and 18% of Faisalabad. The leading players are Al-Karam Textile Pvt Ltd, Chenab, Mills Ltd, Kohinoor Textile, Gul Ahmad Textile, Fateh, Gul Ahmad Ltd, Hussein Factories, and Nishat Linen Group. In the following regions, the industry was represented: Chenab Ltd. Exports from Pakistan are championed mainly by regional rivals, since these countries Instead of Pakistan's administration, its parliament is promoting their material business. The Material Business Commodity Advancement Asset in Pakistan has approved a loan of Rs. 185 million. The material sector accounts for 40% of Pakistan's financial credit.

Textile production started in the 1950s, as part of Pakistan's industrialization, not long after the English gained independence in South Asia. The Pakistani government established the Cotton Product Organization (CEC) in 1974. The CEC was a barrier to private manufacturers'

participation in the global market. However, the status of the CEC deteriorated in the late 1980s, and private farmers could buy and sell cotton from domestic and foreign purchases in 1988-89. Between 1947 and 2000, the number of material factories in Pakistan increased from 3 to 600. Shafts grew between 177,000 and 805 million throughout the same period. The textile industry constitutes a significant portion of Pakistan's export earnings, accounting for 57% of the total. However, there has been a notable decline in textile exports in recent years. In 2014-2015, the value of textile exports stood at \$11.625 billion, but it decreased by 7.7% to \$10.395 billion in 2015-2016. To address this issue, the Pakistan Textile Mills Association has requested the exemption of duty on cotton imports and a 5% reduction in textile taxes. Pakistan faces increasing competition from neighboring countries such as Bangladesh, India, and Vietnam. Over the past decade, Pakistan's share in the global textile industry has declined from 2.2% to 1.7%, while Bangladesh has experienced growth from 1.9% to 3.3%, and India's share has decreased from 3.4% to 4.7%.

2.3 Supply Chain Practice in Textile Sector

It is critical to understand that the textile sector has a unique notion from other fields (Sushma 2015). Proficient Inventory network executives in the articles of textile area require access to the essential unrefined substances, a framework to ensure savvy supply to modern communities, and viable and effective assembling, meeting innovation challenges to foster items to meet the requirement of profoundly requesting clients (Rishab, 2018). Data is the lifeblood of every production network. The nature of this data becomes substantially more relevant in a global economy. Capability to make the business visible to potential clients, collaborate with clients to determine their needs, and fulfill the business to compete in the global market (Janson, 2017).

The purpose of this investigation is to look at the retail network components that will be critical to the success of Pakistan's textile sector in the competitive global market (Usman, 2018). As said in the study, we have identified the fundamental limits as quality administration, mechanical variety, data innovation, and client care. We suggest the accompanying hypotheses for the examination project to examine the legitimacy of these aspects (Kaiser, 2020). The executives of the production network are integrated reasoning to deal with the whole advancement of a dissemination channel from provider to extreme customer. Many organizations contemplate protest care intending to increase client responsibility and develop customer loyalty (Stephen S. Charge, 2018). Client

concerns and relationship promotion are inextricably linked due to their shared interest in customer loyalty, trust, and accountability (Morgan, 2017).

The textile industry's production network exercises are one area that is frequently overlooked in cost-cutting endeavors. Although supply chains in the textile industry are not considered a commercial movement, they may use such frameworks to work on their property. The retail network is a critical variable in the textile industry (Morais, D.O. and Silvestre, B.S., 2018). A built coordinated operations and production network with the board foundation will allow the textile sector to have a controllable advantage over independent textile organizations (Kumar, S and Haleem, A., 2016). The use of proper circulation and production network methods not only extends the items of textile area organization's proficiency of action but also reduces expenses. Building continual ties with sellers and working with areas of strength for a framework is critical for representatives in this area to improve customer support levels. The family area will benefit from the ordered and smoothed-out procedures in strategies and production network the board by delivering consistently consistent, quality services at the greatest costs (Harrison and Aitken, J., 2019).

SCM in the clothes business comprises not simply center offices, for example, facilitating, transport, restaurants, and diversion, but moreover various assistant administrations or travel industry conveniences (Bravo and Kim, 2016). The integrated architecture of the articles of the textile area company is therefore significant for immediate research of the shop network. When discussing textiles, we must first identify the merchants, how to contact them, inventory administration, and the time required to organize. Various apparatuses can supply continuous inventory measures and can give deal expectations as far back as possible, enabling textile areas to avoid branch-offs more effectively (Mahankali, S., 2019). When it comes to interest for clothes area production network executives, after receiving the administrations, investigating the desires of visitors and their degree of pleasure is necessary. This investigation concentrates on the fundamental focuses and techniques of inventory network practices to get an advantage (Treblier, H., 2018).

The efficacy of the textile production network is assessed by both monetary and non-monetary measures. Aside from pay, costs, market share, and so on, measurements of customer loyalty, useful inside methods, level of inventiveness, representative fulfillment, and other development

indicators should also be completed (Panno, A., 2019). An overview of each component's participation in the chain will group items of the textile area inventory network, although a shop network model may be picked merely following a detailed evaluation. There are several reasons why textile supply chains are regarded as valuable survey items. First and foremost, because the items of the textile area inventory network are special in terms of encounters, they may be addressed by local organizations and attractions in one location.

To preserve and deal with such specific features, each item of the textile industry network may demand a different technique to deal with inspection (Singh, S., Kumar, R., Panchal, R., and Tiwari, M.K., 2021). The buying board is always under pressure to meet unplanned buyer division requirements in the items of textile field. As a result, the buying manager strives for large cradle inventory piles to keep the clothes area company going, and customer divisions are not met (Ardeparin, F., 2020.). However, this does not imply that value control frameworks are completely unaware. The textile industry can handle massive numbers of goods at incredibly cheap rates. A lot of money is spent on the circuitous materials used in these things. Any of the textile sector business supplies have a transitory worth, which prevents one from saving money by purchasing in bulk (Lehner, M., 2020).

Typically, each division uses manual indents and purchases individually. Electronic tearing and purchase needs are not available in many clothes area organizations (Kavkaz 2018). To integrate these indents and particulars, a significant expenditure is required (George, 2019). Because of the solidification issue, the pieces of textile area exploit mass buys for the reasons stated above for chain characteristics where independent units are organized in comparable regions. The buying department makes single purchases for identical items (Halldorsson, 2019). The purchasing division inventory piles large quantities of products on the expectation that they will be unable to deliver the correct items to the client divisions on time. This takes up a large area and adds to the costs. Buys are provided immediately and then regularized by doing the necessary desk work on solicitation to the clients' specializations. Crisis exchanges are not a particular example because there are no plans (Shane, 2020).

It is critical to recognize that there is a very clear purpose for the articles of textile are industry from various firms. The business's capital costs are considerable, but its operating expenses are moderately lower (Larsen, S., 2017). There are special features of the textile sector, for example,

customer anti-extremism, various administration styles, and so on. The textile business places a high value on visitors or clients; customer loyalty is extremely important in the textile industry (Chikoti, 2021). There are several forms of organizational plans, such as supervisory groups, establishments, and textile area retailers that function in chains. The various control strategies have varying implications for production network administration (Andria, 2017).

2.3 Information Sharing

Every component of a contemporary framework includes an information exchange stage that fosters collaboration between the organization and its inventory organization members. Information sharing is basic, however it is difficult, if not impossible, for organizations to build and maintain information sharing capacities (Mangan et al., 2016). Developing data sharing capability is difficult since it includes several impediments, including social, authoritative, and creative imperatives that make productive execution and activity difficult (Upset, 2019). Data splitting refers to the sharing of private information among colleagues, allowing them to track the progress of orders and things as they move through various phases in a shop network (Maxwell, 2018). The goal of a productive inventory network is to provide some advantages to the end user. Aside from monetary and data flows, there is a vital physical flow between inventory network members, which includes natural ingredients, work-in-process inventory, finished products, and returned items (Harshen, 2019).

Establishing effective communication channels is crucial for managing the flow of chemicals and ensuring their efficient operation. Managing a manufacturing network is challenging in any scenario, and as the number of individuals and processes involved increases, the complexity of coordination intensifies for larger groups (Feroz and Kalim, 2018). The participation of data within a retail network can offer various advantages to businesses. For instance, it allows for a better alignment of goods with customer preferences and enables adjustments to market demands. The growing utilization of advanced data technologies in supply chains, such as Electronic Data Integration (EDI) and web-based advancements, indicates that organizations are recognizing the value of data-driven planning (Impulse, 2018). Numerous inventory-related issues arise due to a lack of information exchange among individuals within an inventory organization. The objective of this research is to present a framework for managing the creation network, facilitating information sharing, identifying types of shared information, and examining the benefits and

drawbacks associated with shared information in an inventory organization (Ponting, 2017). Sharing information entails appropriating critical data for systems, persons, or forward-thinking substances.

Organizations aiming to enhance the effectiveness of information sharing should consider four key inquiries: determining which information to share initially, identifying the appropriate recipients for sharing, selecting the most suitable sharing methods, and determining the optimal timing for sharing (Green, 2017). Addressing these questions is vital as it helps prevent redundant sharing, reduces sharing costs, and fosters the generation of additional insights. The process of information sharing is often referred to as information coordination, as a supply chain encompasses a wealth of data ranging from operational and business-related information to critical and strategic insights. The potential opportunity to establish correspondence links through the inventory organization enables inventory organization representatives to communicate information regarding plans, needs, and progress, resulting in increased effectiveness in the creation organization (Zhang et al., 2016). Data commerce energizes connection among inventory organization shippers and accomplices, and collaboration is also critical to the inventory organization's ability to respond (Thomas, 2018). In the long run, all suppliers should realize the worth of the other's qualifications, bolstering the merchant's effectiveness and acquisition effort.

Making information sharing capability is difficult since it comprises a variety of hurdles, including social, progressive, and specific constraints that make appealing execution and activity difficult. Data sharing refers to the exchange of private information among colleagues, which allows them to control the progression of orders and things as they pass through various processes in a manufacturing network. The nature of the data supplied goes from strategic to critical, and it may be linked to gauges, specific orders, strategies, market activities, and so on. Gandhi and colleagues (2017). By better-controlling supplier and client connections, information sharing helps to lay out and further grow relationships with sellers and customers. Furthermore, information exchange adds significantly to inventory network coordination by having beneficial impacts on outside and inward joining (Basheer et al., 2018).

Data trade between persons in the production network plays an important role across the board, as a lack of appropriate data trade might harm production network accomplishment or organization execution (Gopal et al., 2019). The data on item supply flows downstream, whereas the data on

request flows upstream through IS from the retail location. By exchanging information with colleagues, the direction is enhanced by increasing openness and making it competitive in the endeavor and production network. Production location may be used by a conventional production network (Hashim et al., 2019). A production network's principal goal is to reduce costs. An appropriate IS device at each inventory network hub will limit inventory at production network hubs. The data framework's coordination with inventory network persons is certainly difficult because an organization does not want to share data on expenses and costs with production network individuals (Gopal et al., 2019). IS among part bunches is important for the proper execution of production network rehearsals. If the data exchanged inside the production network is substantial, correct, convenient, and secure, the IS will have a big impact on structural excellence. Legitimate information that is fabulously accessible and in an area with the proper exchange prompts greater trade with merchants, which leads to enhanced outcomes for an organization (Sukati et al., 2020).

2.4 Inventory Management

Inventory management refers to the regular practices employed by organizations to efficiently utilize, store, and track their supply of parts, raw materials, inventory, and finished goods. Inventories constitute a significant portion of most companies' assets (Prempeh, 2015). It is a carefully planned process that helps organizations effectively handle their procurement and inventory control. The implementation of inventory management techniques proves highly advantageous for commercial industry as it enables them to store a substantial quantity of merchandise for extended durations, allowing for an assumption of future demand. By effectively managing inventory, businesses can mitigate the risks associated with inventory obsolescence or changing consumer preferences (Stadtler, 2015). To supply demands for transitory commodities or items, inventory management has the potential for overcoming challenges such as miscalculating the timing or number of requests, and exaggerated costs due to waste (Yu et al., 2016). Inventory management is critical for all businesses, regardless of size or structure. Inventory administration is a production network the board practice that assists businesses in purchasing a particular number of raw components, replenishing various things and stuff, following through on specific prices to providers, and obtaining specific costs from customers (Govindan et al., 2015).

Lack of effective inventory management complicates decision-making processes. Businesses commonly engage in internal collaboration with utility units and external collaboration with partners in the retail network to physically track inventory and determine reorder quantities and priorities. Large corporations often employ enterprise resource planning (ERP) software, with many opting for the enhanced software-as-a-service (SaaS) model (Christopher, 2016). Managing the risks of inventory shortages and surpluses proves challenging for businesses with complex manufacturing cycles and supply chains. Two key strategies utilized by 15 company industry to achieve this balance are materials requirement planning and just-in-time inventory management (Mangan et al., 2016). Different personnel across various departments hold diverse perspectives on inventory. For example, the sales team seeks to maintain high levels of finished goods inventory to meet ongoing customer demand, while the production division requires sufficient raw material stocks for the manufacturing process.

Conversely, the finance department often provides minimal corporate security to redirect excess resources elsewhere. Inventory, as a vital component of current assets, holds significant importance throughout all stages of the production cycle, as well as the allocation and sales processes (Prajogo et al., 2016). Many organizations worldwide have embraced modern inventory management practices, such as the utilization of advanced inventory record software like SAP. However, there are still many small businesses that lag, relying on outdated and traditional administrative frameworks (Richards, 2017). Just-in-Time (JIT) enables manufacturing companies to achieve substantial cost savings and waste reduction by maintaining inventory at the necessary level for product development and sales. JIT focuses on minimizing costs related to storage, capacity, and the disposal or trade of excess inventory (Shin et al., 2015). However, inventory management through JIT carries inherent risks, particularly in the face of unexpected spikes in demand. In such cases, the manufacturer may be unable to source the required inventory to meet customer needs, resulting in reputational damage and a loss of market share.

Materials need planning is another strategy used in inventory management (Atnafu and Balda, 2018). As inventory administration assists in empowering supply partners with affixing in managing its operations and improving cooperation with its key accomplices, clients, and suppliers by ensuring the arrangement of premium quality materials and information, as better materials and information are critical for any global assembling organization (Atieh et al., 2016). Coordinated

factors are used as tasks in the production network to advance data sources and final products via various functional levels within the organization. For a good, calculated approach, start-to-finish improvement of data sources and final findings to the purchaser in a promising manner is expected. The flow of labor and products with impeccable timing to the perfect individuals in the perfect sum is fundamentally the boundary to decide that the organization is doing a very good job as strategy execution is straightforwardly corresponding to the firm's limit to work effectively (Govindan et al., 2015). A few specialists and focal points also inform us of the factors on which we wish to pass judgment on the productivity and sustainability of the tactics, as well as the presentation of the real association.

Inventory management aims to strike a balance between financial considerations and maintaining an appropriate level of inventory. Efficient packaging helps avoid costs associated with obsolescence, spoilage, theft, and poor quality, while also meeting customer demand without incurring excessive expenses (Guo et al., 2016). The process involves continuously assessing and monitoring inventory levels, considering the significant costs involved and aligning them with other strategic goals and objectives set by the management. The inventory manager in an organization focuses on serving customer demands while minimizing costs. This involves implementing inventory control programs and managing inventory turnover (Rushton et al., 2014). Inventory organizations view each inventory item within the context of business relationships, particularly emphasizing the quantity and distribution of the product being sold (Yu et al., 2016).

2.5 Logistics Management

Coordinated operations performs an interacting role in a few stages of changing resources into significant things to service the end customer. Each of these powers and sub-abilities is organized into a product improvement plan to limit the expense of clients who lay out a business coordinated operations idea (Maxwell 2016). A building should be completely controlled when it is being laid out. Frequently, these include separate associations for creation, capacity, transportation, discount, and textile area exchanges; however, on a very basic level, power age/creation plants, distribution center administration, and transportation advancement establishments (Sattler, 2015). Materials, components and supplies, handling and materials in the production line, and plant inventory must all be combined in power or collecting plants (Schon Leben, 2016).

The concept of coordinated activities is a method of conducting actual material dissemination. During the distribution stage, utilize the board to effectively combine pragmatic activities such as transportation, warehousing, stacking, and dumping, bundling, creation, and information to create value and meet the demands of customers and society. According to Kumar, A. (2015), errands are the most well-known approach for determining, completing, and controlling the consistent, logical flow and cutoff of natural ingredients, in-process inventory, finished items, and related data from point-of-reason to meet customer requirements. Kumar's viewpoint provides information about social event methods. The purpose of the board's organized exercises is to improve capability. According to Freeman and Mosher (2019), trailblazers are primarily responsible for hierarchical accomplishment, and cycles are meant to assist an organization in expanding. Coordinated operations is one of the main competencies that directly affect overall business productivity. When it comes to delivering goods to clients, an organization's coordinated operational procedures must be consistent and trustworthy. The inventory network is linked with calculated operations that center on organizing, regulating sending, executing, assessing in reverse stream and lack difficulties, and conserving complete information about products and administrations. According to Chao, (2019) strategic exercises may be classified into two types.

To carry out an operations strategy, a company should first choose the most desired exhibition levels. This option would consider aspects of the organization's overall competitive strategy, for example, item evaluation and quality positioning Kneeler, A. M. (2020). Organizations must, however, respond to changing customer demands, and coordinated factors flexibility is a critical component of that response (Sreedevi, 2017). Associations conduct coordinated factors exercises to enhance overall inventory network procedures. Some organizations end up re-appropriating their coordinated factors jobs because they lack the necessary skills and assets to completely direct the best calculated exercises (Enock 2019). Xiangfeng Chen and Li (2019) also emphasized the need to coordinate scheduled operations rehearsals across production network partners to better serve a specific client. The realization that an advantage originates as much from the circulation cycle as it does from the item has aided in the transition of coordinated factors from a private cabin to an important meeting place (Vyas, 2016).

According to Mwangangi (2016), the use of information will benefit a variety of coordinated factor capacities, including appropriation organizations, request anticipating, flip plans, transportation

executives, client assistance, and inventory administration. It emphasizes that data and correspondence innovation aid in making coordinated factors operations more visible. Better knowledge makes it easier to meet market interest. This results in improved item handling, inventory limit quality, and transportation economies of scale for the intended variables. After seeing that the finest organizations in terms of development and benefit are inextricably linked with their retail chains, Haag, and Eric (2020) proposed that undertakings may be used to gain an edge. According to Pelindo (2011), the rush for distinction considering better planned factor outcomes has recently increased the amount of depth and intricacy connected with each process step. This necessitates the development of new shared metrics to analyze the true viability of an organization's activity to ensure the delivery of its products to consumers on time, in the appropriate location, and in the proper volume and quality.

According to Christopher (2016), textile area organizations are qualified for having a long arrangement of supply bonds because of the increased quantity of merchants and suppliers. Furthermore, increased supplier and purchaser force increases the business's demand on superior tactics and transportation framework. It is obvious that productive supply chains improve the credibility and precision of an organization's relationships with outside entertainment. Expanded competition in the cutting-edge company world has aided the significance of effective inventory chains, which is influenced by globalization and progress in data innovation. According to Gehus and Kotze (2012)'s analysis, supply networks have become generally necessary and fundamental among other company operations. This focus also mentioned that organizations are compelled to set up distinct divisions and to send experts as inventory chain leaders to deal with its transportation and coordinated operations exercises, as both strategies and transportation are components of supply chains. Furthermore, supply chain competence is dependent on systems, codes, standards, norms, managing capability, and reconciliation of production network capabilities. Hackers and Petersen (2017) investigated the adaptability of the inventory network the board and chance assessment of the organizations.

2.6 Capacity Planning

Capacity refers to the capability of an organizational entity, whether it be a facility, process, workstation, equipment, or task, to fulfill its purpose at a given moment (Menezes, 2018). However, Christopher (2020) defines capacity in terms of both output and input, referring to the

maximum output rate of a facility or the number of resources available to generate a total output over time. The location, structure, systems, and operations of an organization all influence its capacity. Capacity management involves determining the level of resources an organization will anticipate meeting fluctuating demand patterns (Younis, 2014). Discrepancy occurs when there is a gap between an organization's capabilities and customer demand, resulting in either idle resources or unfulfilled customer orders. Hence, capacity management aims to address this discrepancy (Kalim, 2013). Various capacity quantification strategies are employed by organizations in their management practices, whether in production or service sectors. These include strategic or hard capacity quantification, total capacity quantification, constrained capacity management, also known as production scheduling, and capacity forecasting (Dekkers and Kannaki, 2019).

The concept of constraint plays a central role in board decisions. Establishing boundaries, as highlighted by Meredith and Scott (2021), ensures that costs are minimized while maintaining quality. This involves aligning inventory strategies with demand assumptions to minimize movement costs and optimize the allocation of resources, reducing waste and idle time. Capacity planning enables organizations to remain competitive and achieve their growth objectives by managing costs and establishing flexible limits that align with demand. This ensures that no profit opportunities are missed and avoids unnecessary expenses due to overproduction. Additionally, it results in shorter lead times and faster customer delivery, enhancing overall efficiency (Wheelback, 2018). Project managers employ scope assessment as a strategy to optimize resource allocation, costs, and quality, striking a balance between resource execution and desired outcomes. Quality and resource performance are of utmost importance as they directly impact the organization's ability to deliver added value to its clients (Protozoa and Goh, 2018). The implementation of scope assessment and just-in-time strategies enhances efficiency and profitability by eliminating waste of resources, time, and money. Adopting a scoped approach improves the organization's understanding, facilitating better focus and prioritization (Seriola, 2020).

The productivity proportion compares the bar's performance on a particular day to the best probable daily rate. The strong limit is an action that the cycle was designed for, but that may be fairly expected while considering certain variables that prevent the interaction from reaching its

full potential as deduced from its certainty. In the given climate, examples include maintenance, staff breaks, and so on. The best predicted degree of transit for a movement, cycle or workplace is the plan limit. The plan limit in gathering is how much result with the least usual unit expense. In an ideal environment, as much as possible, also known as the optimum working level, should be tied to efficacy; nevertheless, this isn't always the case since a few uncontrollable circumstances prohibit jobs from reaching their full potential. Limit judgements are, by definition, critical in nature, considering ventures and hence obligations for assets like equipment, offices, and work. Given this, restriction options have a significant impact on many hierarchical capacities.

When resources are provided, there is an increase in the utilization of work, resulting in significant cost implications. Additionally, the starting cost of an item is largely determined by the unit cost, which directly depends on the expenses incurred for the materials used. This influences various aspects such as transparency in management, longer timeframes, streamlined organization, and the sincerity of the organization. In the twenty-first century, globalization has played a role in the complex interplay of capacity decisions, highlighting the importance of collaboration between industry sectors and competitors on a larger scale. It is crucial to prioritize these fundamental choices early on. Capacity decisions can be categorized as long-term, medium-term, and temporary, each requiring a thorough evaluation and assessment of the resource quantities needed. As time passes, the intricacies of this process increase. The required resource levels must be compared against projected demand and exchanges. Additionally, it is essential to maintain a balance in the structure and flexibility of the resources, along with effective change planning.

Because some degree of interest sensitivity is unavoidable, organizations rely on limit pads to compensate for the risk of trades. The pad total is more than the interest-related limit threshold. As a result, limit execution rates decrease as the number of pads in inventory increases. Negative limit pads, on the other hand, arise when an organization's plan limit does not correspond to interest. The ability to have a limit pad varies greatly depending on the business. Manufacturing businesses have a greater power to adjust the pad level than management firms. A lodge does not have a plethora of rooms to serve as limit pads, but rather manages such needs through asset flexibility, for example, offering a suite to a left client without a room because of overbooking. Other specialized co-ops essentially do not have the option of not helping, hence the limit pad is stretched to unmistakable levels under these cases. Police, fire, gas and water administrations are

examples of such activities. Even though the necessity for limit pad is highlighted here, organizations should keep in mind that underutilized limit equals cash lost.

2.6 Innovative Supply Chain Model

In contemporary times, companies focusing on innovation are steering their efforts towards creativity and pioneering solutions (Markus, 2020). The primary goal for these leaders is to gain more market share by establishing robust and efficient chains that enhance various performance indicators (Jasmine, 2021). These indicators include reducing delays, ensuring on-time delivery, cutting costs, bolstering customer satisfaction, enhancing productivity and quality, gaining competitive advantages, among others (Stonis and Austin, 2021). Published articles have pointed to several factors influencing supply chain performance, such as product innovation, process innovation in both services and production, and technological advancements (Nair and Agarwal, 2022). Moreover, factors like uncertainty, partnership quality, marketing orientation, and strategic approach moderate the relationship between independent and dependent variables (Furqan, 2019).

Presently, textile companies collaborate with suppliers to develop integrated processes, considering this collaboration as a competitive advantage (Celeb and Jacquie, 2020). Improvements in buyer-supplier relationships are evident in practices like inventory systems, supplier location strategies, contractual arrangements, and mutual trust. Research among major textile firms highlights a shift in innovation towards enhancing product quality, capabilities, and creating new products while reducing production costs (Norman, 2019). Human capital within firms is identified as a primary driver towards innovation. The concept of innovativeness significantly contributes to elevating quality and performance within organizations. It denotes an openness to new ideas, proactive willingness to embrace change, and a capacity to implement experimental ideas (Jennifer and Alex, 2021). Innovativeness strengthens organizations' competitive positions, especially in dynamic markets where customer demands evolve rapidly, and differentiation is limited. It enables flexibility in adopting strategies and introduces a process to leverage new opportunities. Organizations lacking innovativeness might struggle to absorb market intelligence effectively, while those fostering an innovative culture encourage innovative behavior among employees, ultimately stimulating creativity in products, services, and practices (Anglia and Gurav, 2022).

As businesses strive for innovation, the focus has shifted from manufacturing functions to various supply chain relationships (Sousa and Hyland, 2019). Enhanced Supply Chain Performance can be achieved by nurturing relational exchange, fostering innovativeness, and closely collaborating with partners to identify areas requiring improvement (Panay and Lun, 2019). Innovativeness, encompassing changes or the adoption of new processes and services, can significantly impact interactions between manufacturers and suppliers or manufacturers and customers. Within logistics, Lin (2018) discovered that embracing technological innovations positively influences SCP. Regarding supply chains, Roy et al. (2021) highlighted that innovating in products, services, and processes can reduce costs and boost efficiency. Consequently, this innovation contributes to heightened customer satisfaction. Corporate organizational culture may integrate acceptance of novel concepts and a receptiveness to new behavioral patterns through inter-organizational relationships, suggesting that fostering relationships leads to innovativeness (Panayides and Lun, 2019). Within supply chains, collaboration can serve as a valuable tool for generating innovation (Soosay et al., 2018). Establishing relationships among supply chain partners can initiate and nurture innovativeness (Panayides and Lun, 2019). Therefore, Chapman et al. (2020) argued that the focus on Supply Chain Integration (SCI) has transformed how firms engage in and derive benefits from innovation. Indeed, the appropriate degree of collaboration with supply chain partners is crucial for embracing strategic innovation. Moreover, collaborative adoption of innovativeness generates network externalities, enabling partners within the network to reap the benefits of innovations (Frambach and Schillewaert, 2022).

2.7 Productivity Performance

In the field of supply chain management, the concept of productivity performance is essential for developing an appropriate supply chain strategy that aligns with the overall market plan (Turkulainen and Ketokivi 2019). Each organization in the textile industry strives to adopt a specific strategic approach that is in line with its overall strategy, leveraging the necessary skills and resources to achieve its objectives. For instance, one company may focus on delivering high-quality products at higher costs, while another company aims to offer a wide range of reasonably priced products with full functionality. Yet another company may prioritize delivering a broad array of products and services with a strong emphasis on customer convenience, accessibility, and responsiveness, among other strategies. Any textile corporation aiming for success must integrate its supply chain management system with its competitive planning (Delery and Roumpi 2017).

Strategic fit, originally referring to the alignment of strategic objectives with consumer requirements and competitive strategy (Chopra 2017), is crucial. Companies employ various tactics and tools to generate performance within their supply chains. Westbrook (2015) argued that improving operational efficiency could be achieved by reducing non-value-added operations, minimizing order variations, and accelerating inventory flows. Hult et al. (2016) suggested that technological advancements and innovative processes can significantly impact operational performance. Baird et al. (2019) emphasized the importance of understanding the trade-off between customer experience and expenses for organizations.

The aim of clothing companies is to gain a competitive advantage by aligning their supply chain activities and structures with their business strategy (Sadikoglu and Olcay, 2014). Wheelen and Hunger (2015) analyzed Porter's business strategies, such as cost reduction and differentiation, and proposed that organizational strategies should focus on strengthening the competitive advantages of a company's products or services. Wheelen and Hunger (2018) suggested that the capabilities of the supply network directly impact a company's success. Alam et al. (2014) indicated that productivity performance significantly influences the overall supply chain. Bowersox et al. (2015) stated that using external performance measurements in collaboration with other industry partners leads to successful end-customer value through operational activities and direct communication. Harrison and New (2017) emphasized the importance of productivity performance indicators as a common operational performance measurement that facilitates internal and external relationships among clothing organizations. Vaidya and Hudnurkar (2015) provided performance evaluation metrics related to cost, customer experience, efficiency, asset management, consistency, time, innovativeness, size, flexibility/adaptability, collaboration capability, supplier profile, and marketing behavior. Companies apply apparent operational efficiency criteria and resilience scales to achieve organizational efficiency, service quality, and substantial efficiency (Cao et al., 2015). The operating efficiency of the supply chain is assessed based on attributes such as flexibility, time (speed), productivity, and cost, which are considered the most valuable.

2.8 Theoretical Framework

According to Von Bertillon (2012), an organization's supply chain activities have been described as a framework comprised of several variables Information sharing, inventory management, logistics management, and capacity planning and innovative supply chain model. A degree of

collaboration within the supply chain, the inclusion of organization, and coordination among all elements are critical for the association's feasible and helpful execution in the industry. Because the supply chain of the textile business is dynamic, there should be cooperation between textile businesses such as producers, buyers, and other partners. This involves the textile production network, encompassing inventory, material and supply, cycles, products, logistics, capacity, and information sharing network. In this research, we examine the overall influence of supply chain activities on the productivity performance of the textile industry on a large scale. For this study, the supply chain is considered as an independent variable including factors of information sharing, logistics management, inventory management, and capacity planning. Consequently, productivity performance is acting as a dependent variable.

2.8.1 Theory of Constraints

The theory of constraints (TOC) is an overall philosophy of management, helping organizations achieve their goal on an ongoing basis. The title derives from the argument that any manageable system is limited by a very small number of constraints in achieving more of its goal, and that there is always at least one constraint. The TOC process aims to identify the constraint and restructure the remainder of the organization around it. The theory of constraints (TOC) is one of the simplest, most important principles in the supply chain. The basic idea is that each process is constrained by some form of constraint.

The reliability of the supply chain connection will influence the supply chain partnership's efficacy and performance, and the overall supply chain success. Supply chain stakeholders can identify poor ties and minimize differences in supply chain efficiency (production/distribution efficiency, and inventory) and supply chain output to optimize the supply chain gain. A constraint in an organization is anything that hampers the progress of the organization or increases its performance. The inability of the company to address this restriction, therefore, contributes to a major decline in its profitability. The same TOC analogy can be made with the supply chain, where the weak supply chain connection can limit the efficiency and effectiveness of the whole supply chain. In other terms on the lowest connection, the supply chain would collapse.

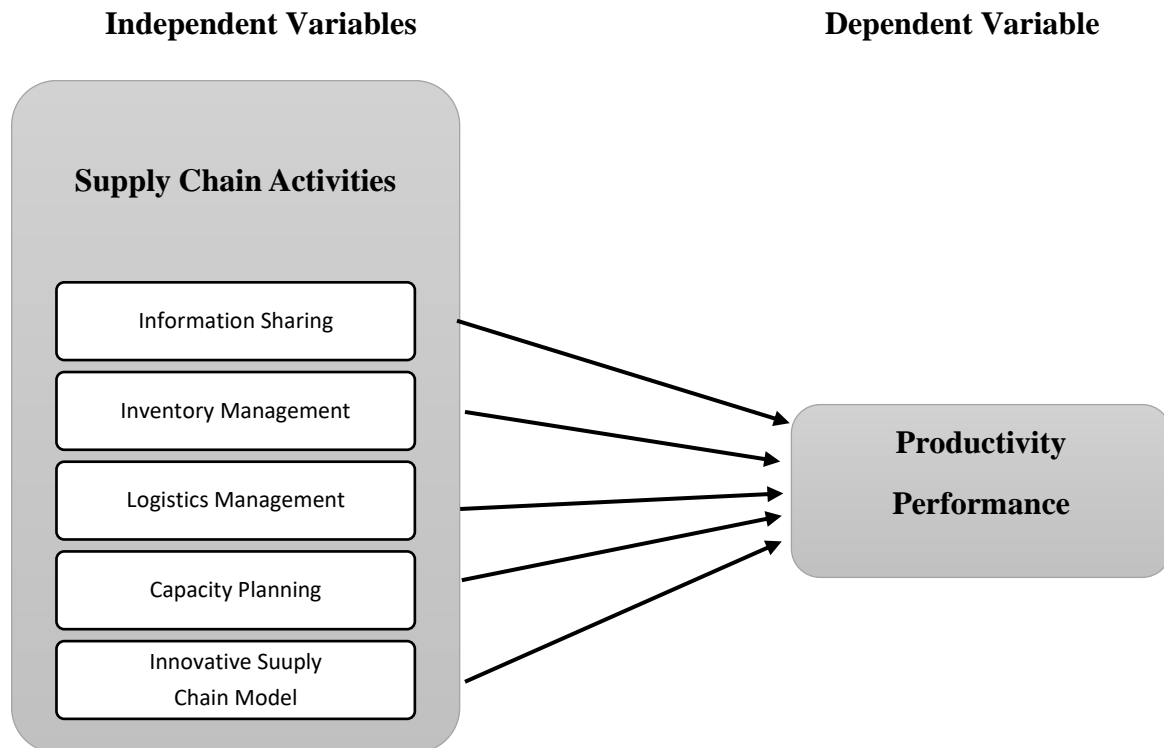
Chapter 3

Research Methodology

3.1 Introduction

The approach employed in this study involves examining the significant influence of Supply Chain Activities on Productivity Performance within Pakistan's Textile Industry. This analysis considers the supply chain as an independent variable, comprising elements such as information sharing, logistics management, inventory management, an innovative supply chain model, and capacity planning. Consequently, productivity performance is regarded as the consequence output resulting from these various supply chain activities.

3.2 Conceptual Framework



3.3 Research Hypothesis

H1: Information sharing has a positive impact on productivity performance.

H2: Inventory management has a positive impact on productivity performance.

H3: Logistics management has a positive impact on productivity performance.

H4: Capacity planning has a positive impact on productivity performance.

H5: Innovative supply chain model has positive impact on productivity performance.

3.4 Research Type

Quantitative methods will be utilized in this research to investigate the correlation between Supply Chain Activities and Productivity Performance in Pakistan's Textile Industry. Using quantitative analysis allows for a broader exploration with a larger sample size, facilitating a more comprehensive study involving a greater number of participants and yielding potentially more speculative conclusions. Furthermore, employing quantitative assessment ensures objectivity and accuracy throughout the research process. This method concentrates on finalized data, involving a limited number of variables closely associated with the research focus.

3.5 Research Design

This study employed a descriptive research design to explore the Influence of Supply Chain Activities on Productivity Performance within Pakistan's Textile Industry. The selection of this research design is advantageous as it enables the collection of data that addresses inquiries about the current condition of the subject being investigated. Descriptive research aims to depict the present situation, aiding in understanding the current dynamics of the subject under scrutiny. Additionally, this design allows for a comprehensive exploration of factors and demographic characteristics, offering cost-effective data collection on a large scale. It facilitates the acquisition of precise study data by heavily relying on secondary sources, aiding in constructing a case through information, statistical figures, and descriptive analysis of archived materials and data.

3.6 Research Approach

The methodology employed in this research involves quantitative data analysis, which encompasses the statistical gathering of data followed by thorough analytical examination. The primary goal of utilizing quantitative research techniques in this study is to impartially compare and evaluate outcomes associated with the influence of crucial supply chain elements on productivity performance within Pakistan's textile industry. Following a recent study's approach, we have embraced a deductive method to tackle our research queries. This deductive approach is frequently utilized for testing existing hypotheses. Through an analysis of the problem description, our aim is to offer theoretical explanations and solutions to the challenges identified.

3.7 Research Philosophy

Positivism, as an investigative approach, emphasizes that knowledge derived from empirical evidence, such as measurement and observation, is dependable. In specialized research, the researcher's role primarily involves collecting data and conducting objective analysis. Such studies commonly prioritize quantitative and tangible results. Positivism is rooted in utilizing quantitative observations to explore real-world occurrences, aligning with the empirical viewpoint that acknowledges data originates from human experiences. It adopts an atomistic ontological perspective of the universe, viewing it as comprised of distinct, observable entities and events that interact in a non-linear and customary manner.

3.8 Population

This study focused on individuals involved in managing various aspects of the supply chain within five Textile Corporations situated in Islamabad Rawalpindi, Pakistan. Although the total population in the textile industry comprises around 1 million respondents, due to its vastness, we aimed to select 250 respondents as the study's population. The research data was specifically gathered from these regions to examine the influence of supply chain integration on the operational performance of the textile sector. The chosen companies for this investigation included Koh E Noor Textile, Al-Karam Textile, DM Textile, Sarhad Textile, and Redco Textile. The target population encompassed 250 individuals, consisting of employees, supervisors, and managers in the textile industry, recruited through referrals from friends, colleagues, and relatives.

3.9 Unit of Analysis

The focal point of this study comprised respondents affiliated with textile industry companies. Data was gathered from employees involved in the supply chain within the textile industry operating specifically in Rawalpindi and Islamabad.

3.10 Sample Size

Sampling in research is a crucial method for acquiring information about the population's sample size. It outlines the framework or approach used by the researcher to select the most suitable sample items. In this study, the sample size comprises 152 respondents from a population of 250. The selection involved five textile companies—Koh E Noor Textile, Al-Qaram Textile, DM Textile, Sarhad Textile, and Redco Textile—operating in Islamabad & Rawalpindi. The data collection strategy involved distributing 30 questionnaires to supply chain and operational managers, employees, and supervisors in each textile company. The calculation for determining the sample size of 152 respondents from a population of 250 was based on the Krejci and Morgan table from 1970.

3.11 Sampling Technique

For data collection from the respondents, this study employed a random sampling method. This approach is commonly utilized to gather information from larger sample sizes.

3.12 Research Instrument

Data collection for this study will involve implementing a standardized and adaptable survey aimed at gauging respondents' perspectives regarding specific factors of interest. Given the quantitative nature of this research, a survey utilizing a 5-point Likert scale has been meticulously designed as the data collection tool. To capture the nuances of the variables under scrutiny, a modified and flexible survey approach has been employed, ensuring the reliability and validity of the collected information. Various methodologies have been employed in the data collection process to ensure accuracy and credibility. The survey method adopted here not only follows a meticulously designed protocol for gathering precise data but also offers simplicity in its application. Additionally, the process of analyzing quantitative data through diagrams and graphs is straightforward. Primary data collection for this thesis was carried out using a validated and verified standardized questionnaire. This questionnaire was adapted from previous research, specifically from Ronald Cheboi Chesaro's (2016) work on Supply Chain Management Practices

and Operational Performance of Multinational Manufacturing Firms in Kenya, Master of Business Administration Degree School of Business, University of Nairobi.

3.13 Measurement of Scale

A well-structured survey served as a critical tool for gathering pertinent information. The Five-Point Likert scale was employed to gauge the responses obtained. Each piece of information was evaluated using a 5-point Likert scale.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3.14 Data Collection Process

After modifying the surveys, adjustments were made to ensure precise and reliable responses from the respondents' end. Data was gathered by disseminating structured questionnaires to employees working in textile organizations in the twin metropolitan areas of Pakistan. The surveys were administered using "Google Forms" online. The collated survey results were accurately synchronized to enhance the practical outcomes and conclusions of the review. Over a span of 10 days, 152 surveys were collected. The responses were comprehensive, and there were no limitations imposed on the scope of the surveys, resulting in comprehensive data from all respondents.

3.15 Analysis

This study gathered and analyzed survey data using quantitative methodologies. Statistical methods like regression and correlation analysis were conducted utilizing SPSS software. The objective was to assess the magnitude and direction of the correlation between variables, such as information sharing, inventory management, logistic management, capacity planning (independent variables), and productivity performance (dependent variable). These statistical tools are widely acknowledged and have demonstrated their accuracy and significance in numerous global research studies.

3.16 Time Horizon

This study utilized a cross-sectional time frame, aiming to capture a snapshot or "cross-section" of a population by gathering information on various variables of interest simultaneously. In a cross-

sectional study, researchers do not track participants over time; instead, they collect data from different individuals within a specified population or sample. This design enables researchers to analyze the prevalence, distribution, and relationships between variables at a particular moment. However, cross-sectional studies cannot establish causation since they lack longitudinal follow-up or manipulation of variables. Nevertheless, they offer valuable insights into the characteristics and associations within a population at a specific point in time.

Chapter 4

Result & Analysis

4.1 Introduction

This section delves into the methodologies and tools employed in the study. Data gathered from the research underwent analysis using SPSS software. Research models like frequency distribution, regression analysis, and correlation were utilized to verify the study's reliability and validity. The main aim of this research is to explore the Impact of Supply Chain Activities on Productivity Performance in Pakistan's Textile Industry. Independent variables include information sharing, inventory management, logistics management, capacity planning, and innovative supply chain model, while productivity performance serves as the dependent variable.

4.2 Demographic description

For better understanding, the researcher has organized the gathered data into several classifications. The study's sample includes employees from Textile companies situated in Rawalpindi and Islamabad, encompassing Koh E Noor Textile, Al-Qaram Textile, DM Textile, Sarhad Textile, and Redco Textile. Demographic factors like gender, age, educational attainment, and work experience were used for this classification. The sample size comprised 152 individuals, categorized as junior staff, executives, and management, among respondents from textile companies.

Table 1

Demographics		Frequencies	Percentage s	Cumulative Percentage
Gender	Male	117	77	77
	Female	35	23	100
Age	20-30	134	88	88
	31-40	12	8	96
	41-50	3	2	98
	Above 50	3	2	100
Education level	Matriculation/O-Level	1	1	1
	Intermediate/A-Level	6	4	5
	Bachelors	54	35	40
	Masters	90	59	99
	PhD	1	1	100
Professional Experience	Less a year	56	37	37
	1-3 years	56	37	74
	4-6 years	19	12	86
	7-9 years	6	4	90
	Above 9 years	15	10	100
Designation	Senior Manager	20	13	13
	Middle Level Manager	38	25	38
	Supporting Staff	49	32	70
	Executive	24	16	86
	Front Line Manager	21	14	100

4.3 Reliability test

The consistency and reliability of questionnaire items for each study variable have been assessed using a reliability test. Based on Chang's (2017) classification, Cronbach's alpha values provide four levels of reliability. An alpha value of 0.9 and above signifies excellent reliability, 0.70-0.9 indicates high reliability, 0.50-0.70 indicates moderate reliability, and values below 0.50 indicate low reliability. The tables below display the results of the SPSS reliability test, indicating that the five variables utilized in this study exhibit satisfactory reliability.

**Table 2 Cronbach's Alpha
Reliability Test Results Summary**

Variables	Sample size	items	Cronbach's Alpha	Reliability
Information sharing	152	5	0.817	High
Inventory Management	152	5	0.860	High
Logistics Management	152	5	0.866	High
Capacity Planning	152	5	0.820	High
Innovative Supply Chain Model	152	5	0.714	High
Productivity Performance	152	5	0.842	High

In this instance, the reliability analysis shows notably high Cronbach's alpha values for the measures of dependability. These results affirm the substantial reliability and consistency of the survey used in this research study. Cronbach's alpha values, ranging between 0.7 to 0.9, signify a strong reliability level for both the survey tool and the respondents' answers. This analysis using Cronbach's alpha underlines the consistency of the Likert scale, validating the accuracy and clarity of the survey employed in this quantitative evaluation.

4.4 Correlation Analysis

The relationship between the dependent and independent variables is examined and evaluated through correlation analysis, which measures the strength of their association. The correlation findings of our study are presented in the provided table.

Table 3

		Correlations					
		Information Sharing	Inventory Management	Logistics Management	Capacity Planning	Innovative Supply chain Model	Productivity Performance
Information Sharing	Pearson Correlation	1	.				
Inventory Management	Pearson Correlation	.755**	1				.
Logistics Management	Pearson Correlation	.803**	.830**	1			
Capacity Planning	Pearson Correlation	.721**	.814**	.707**	1		
Innovative Supply chain Model	Pearson Correlation	.711**	.784**	.777**	.725**	1	
Productivity performance	Pearson Correlation	.794**	.716**	.776**	.718**	.787**	1
		**. Correlation is significant at the 0.01 level (2-tailed).					

Correlation between Information Sharing & Productivity Performance

The significance of the relationship between productivity performance and information sharing is observed at a significance level of 0.01. The Pearson correlation coefficient value of 0.794 indicates a positive relationship between information sharing and productivity performance. This suggests that the two variables are positively associated with each other.

Correlation between Inventory Management & Productivity Performance

At a significant level of 0.01, a significant relationship is observed between productivity performance and inventory management. The Pearson correlation coefficient value of 0.716 indicates a positive correlation between productivity performance and inventory management. This implies that there is a positive association between the two variables, indicating their interconnectedness in a positive manner.

Correlation between Logistics Management & Operational Performance

At a significant level of 0.01, a significant relationship is observed between productivity performance and logistics management. The Pearson correlation coefficient value of 0.776 indicates a positive correlation between productivity performance and logistics management. This

suggests a positive association between the two variables, implying that they are connected in a positive manner to each other.

Correlation between Capacity Planning & Operational Performance

At a significance level of 0.01, a significant relationship is found between productivity performance and capacity planning. The Pearson correlation coefficient value of 0.718 indicates a positive correlation between capacity planning and productivity performance. This implies that there is a positive relationship between the two variables, indicating their positive connection to each other.

Correlation between Capacity Planning & Operational Performance

At a significance level of 0.01, a significant relationship is found between productivity performance and innovative supply chain model. The Pearson correlation coefficient value of 0.787 indicates a positive correlation between innovative supply chain model and productivity performance. This implies that there is a positive relationship between the two variables, indicating their positive connection to each other.

4.5 Regression analysis

The existence of a relationship is assessed through correlation analysis, while the nature of the relationship is determined through regression analysis. The table provided below is commonly utilized to present the outline of the regression model.

Table 4

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892 ^a	.796	.791	.3278

a. Predictors: (Constant), Information sharing, inventory management, logistics management, capacity planning and innovative supply chain

The model summary provides a comprehensive overview of the regression analysis. With an R-value of 0.892, there exists a strong and significant relationship between the independent variables (Information sharing, inventory management, logistics management, capacity planning and innovative supply chain) and the dependent variable, which is productivity performance. The coefficient of determination, represented by R-square, is calculated as 0.796. When multiplied by 100, this yields a percentage of 79.6%. This indicates that approximately 79.6% of the variance in

productivity performance can be explained by the supply chain activities (Information sharing, inventory management, logistics management, capacity planning and innovative supply chain) examined in the study. The remaining 20.4% of the variance may be attributed to external factors that have the potential to either enhance or hinder productivity performance. These external variables can encompass any factors beyond the scope of the independent variables mentioned in the study (Information sharing, inventory management, logistics management, capacity planning and innovative supply chain).

4.6 ANOVA

Table 5

		ANOVA				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.467	4	15.117	91.652	<.001 ^b
	Residual	15.476	144	.107		
	Total	75.943	148			

a. Dependent Variable: Productivity performance
b. Predictors: (Constant), Information sharing, inventory management, logistics management capacity planning and innovative supply chain

The ANOVA table provides evidence of the overall significance of the regression model. For the regression model to be considered significant, the F-value must exceed 4 and the p-value must be less than 0.05 ($p < 0.05$). In this case, the F-value exceeds 4, and the p-value is less than 0.05, indicating that the entire regression model is indeed significant.

4.7 Coefficient

Table 6

Model	Coefficients			t	Sig.
	Unstandardized Coefficients	Standardized Coefficients			
	B	Std. Error	Beta		
1 (Constant)	.407	.166		2.449	.016
Information sharing	.246	.063	.262	3.872	.000
Inventory management	.208	.080	.226	2.584	.003
Logistics management	.460	.071	.210	2.397	.000
Innovative supply chain	.321	.074	.245	2.391	.000
Capacity Planning	.379	.071	.377	5.376	.002

a. Dependent Variable: Productivity Performance

Based on the provided table, each indicator exhibits a positive relationship with efficiency execution accomplishment and is statistically significant at a 95% confidence level. These coefficients elucidate the importance of the relationship between the independent and dependent variables. The presence of a significant association between the dependent and independent variables is confirmed by the fact that all t-values are greater than 2 ($t > 2$) and the p-values are less than 0.05 ($p < 0.05$). According to the study, a unit increase in information sharing leads to a productivity performance of 0.246. Similarly, a unit increase in inventory management results in a productivity performance of 0.208, logistics management leads to a productivity performance of 0.100, and capacity planning contributes to a productivity performance improvement of 0.379. Barreto (2017) suggests that robust and efficient supply chain activities enable businesses to gain a competitive edge by providing excellent customer service.

4.9 Results

Table 10

Varibales	Significance level	Result	Outcome
Information Sharing	0.000	Positive impact on productivity performance	Hypothesis accepted
Inventory Management	0.003	Positive impact on productivity performance	Hypothesis accepted
Logistics Management	0.000	Positive impact on productivity performance	Hypothesis accepted
Innovative Supply Chain Model	0.000	Positive impact on productivity performance	Hypothesis accepted
Capacity Planning	0.002	Positive impact on productivity performance	Hypothesis accepted

Chapter 5

Discussions, Conclusion and Recommendation

5.1 Discussions

The supply chain activities encompass all the processes, operations, inventory management, logistics management, capacity planning, and other activities involved in transforming raw materials into finished goods. To enhance productivity performance in both consumer and production markets, textile industry businesses need to standardize and modernize their supply chain operations overall. The study focuses on one dependent variable, which is productivity performance, and four independent factors of the supply chain, namely information sharing, inventory management, capacity planning, and logistics management. Four hypotheses were formulated and all of them were validated through correlation, regression, and coefficient analysis. The findings of this study underscore the significance of the supply chain as a vital approach and methodology for textile organizations productivity performance.

The comprehensive output of the previous research findings holds significant importance in the context of the Supply Chain (Huo et al., 2019). Textile organizations establish strong collaboration within the operations of the supply chain to achieve productivity performance (Flynn et al., 2010). The previous finding shows that the Supply Chain encompasses the collaborative efforts of suppliers, clients, and other partners to enhance internal and external capabilities within the network (Flynn et al., 2020). Collaborative and integrated relationships among Supply Chain partners foster competency and lead to increased competitiveness in response to consumer demand. The Supply Chain is widely recognized as a critical asset for organizations (Devaraj et al., 2021), with substantial evidence showing significant improvements in operational and financial efficiency (Mohammadi et al., 2019). Many operations, such as information sharing, inventory management, logistics management, capacity planning and innovative supply chain model, are now performed beyond the organizational boundaries, within the realm of the Supply Chain. Recognizing their limited autonomy, organizations have sought the involvement and support of their suppliers, customers, and various other stakeholders within their Supply Chain. The effectiveness of the Supply Chain is identified as one of the key determinants of company success (Van der Vaart and van Donk, 2018).

Textile companies need to acknowledge that the key factors determining their success are the supply chain and productivity performance. By establishing robust supply chains, forging strategic partnerships, and continuously developing their products, these companies can consistently identify clients and effectively respond to their needs in a timely manner. Research findings emphasize that implementing supply chain management systems enables the textile industry to navigate fluctuating financial systems, capitalize on market opportunities, and adapt to shorter product life cycles more efficiently. One of the primary advantages of supply chain management in the textile industry is the enhancement of information sharing and fostering effective collaboration. This applies to various aspects such as production, logistics, inventory, capacity planning and innovative supply chain model. By promoting collaboration and partnership across these areas, textile organizations can ultimately elevate their profit levels. Furthermore, embracing new technologies and improving communication across different departments play a crucial role in driving the growth and success of these organizations.

5.2 Conclusion

The significance of supply chain activities in the textile industry is widely acknowledged. The variables within the supply chain have a notable impact on the productivity performance of this sector. Given the vast and intricate nature of the textile supply chain, effective strategic planning and assessment are crucial at all levels. Productivity performance holds utmost importance in the textile sector. The findings of this study indicate that managers, supervisors, and employees in Pakistan's textile industry possess an understanding of the criteria and dimensions for evaluating supply chain and productivity performance. Such criteria contribute to the continuous growth and development of textile organizations within the sector. The textile industry's supply chain is extensive and complex. It significantly contributes to enhancing productivity performance. Factors such as information sharing, inventory management, logistics management capacity planning and innovative supply chain model, all play a role in an organization's success. In this era of market competitiveness, productivity performance plays a critical role in the operational success of the textile industry. The primary objective of the supply chain is to achieve cost and time savings while offering quality and flexibility throughout the entire network of the textile business. As we all know, textile goods are increasingly competitive, and they rely on supply networks, which require more effective supply chain management to sustain and improve product performance. For the textile industry, strengthening the supply chain network is critical. The supply chain is a key

measure of the overall success of the textile business. The supply chain's variables are connected and interdependent. Textile supply chain implemented a wide range of supply chain activities to increase their performance by performing aggressively in all supply chain activities and functions. All the factors included in the study demonstrate that the supply chain has a favorable influence on the productivity performance of Pakistan's textile industry sector. Textile Companies should manage their supply chains under emerging technology. Future advancements in the supply chain of modern technology the global supply chain activities are used not just in Pakistan but also in the worldwide textile business. The textile industry faces various challenges and uncertainties, encompassing political, legal, global, and environmental aspects. The supply chain serves as a vital mechanism for the textile sector to streamline processes, systems, and business strategies, ensuring smooth operations. Inflexibility and uncertainty are major concerns in the present era of the textile business, particularly concerning logistics and inventory storage. To address these challenges, integrated process management, information exchange, and effective communication are pivotal in driving improvements in productivity performance. Leveraging efficient supply chain management, textile industry companies can identify opportunities and mitigate risks, resulting in cost and time savings while attaining optimal levels of productivity performance.

5.3 Recommendations

The quantitative research approaches used for the evaluation show that the largest barrier is maintaining perfect hierarchical proficiency across the whole supply chain. Pakistan's textile industry business is struggling to keep up with backed access to outstanding quality products with real supply at a reasonable cost. This is entirely due to inadequate institutional implementation and arrangements. The textile industry's problems are closely related to both internal and external causes. The textile industry is influenced by several external factors, including intense competition in industrialized economies and limited access to market resources such as vendor connections and technological advancements. On the internal front, variables like supply chain management, inventory management, logistics management, information sharing, and capacity planning directly impact the industry's business model. It is evident from the data that inefficient supply chain operations have a significant negative impact on the industry's profitability. The challenges faced by the textile industry, including difficulties in competing at corporate levels, industry integration, unfavorable business conditions, and limited collaboration among supply chain participants, have intensified the need for coordinated efforts. There is a clear requirement for a focused and strategic

approach to address the challenges specific to the textile industry sector in Pakistan. To remain competitive in the textile industry, companies must develop and implement a comprehensive plan and strategy. There are various avenues to pursue to achieve this objective.

5.3.1 Recommendations for Policymakers

Pakistan's textile industry business need policy stability to gain the trust of present and potential investors. To that purpose, all key parties, particularly retailers, must collaborate, engage, and participate in the following: Participants in the textile industry business must collaborate on the most important key performance metrics, such as collaboration and encouragement from associative organizations. To attain the objectives of effective supply chain management, policymakers and manufacturers must collaborate to reduce costs and enhance customer service. It is crucial for authorities and governments to implement global best practices, such as adopting national policies for material procurement that are agreed upon by all industry stakeholders. This may entail measures like tax reconciliation and implementing specialized approaches to determine production costs and triggers. Encouraging industry players to establish a trade organization can yield positive outcomes, as they are more likely to respond to collective lobbying efforts compared to individual companies. Establishing a fair system for allocating the responsibility of maintaining supply chain operations in the textile industry, including managing dead inventory and strategic reserve inventory, is essential. This approach aligns with the collaborative and cost-sharing principles of supply chain management. To achieve cost reductions, it is imperative for the entire supply chain to collaborate on various operations, including planning, forecasting, cooperative purchasing, and inventory management. This collaborative effort will help optimize efficiency and drive down expenses across the supply chain.

Consequently, industry experts can utilize these findings to inform funding decisions and incentives related to supply chain activities in the textile industry sector. This data can guide the optimization of supply chain operations at the individual firm level during budgetary planning processes. The emphasis should be on supporting the critical success factors identified through the study. One recommendation is to revise the industry aggregate supply chain policy, allowing the industry to engage manufacturers who are directly involved in operational activities within the textile industry sector. This approach offers increased flexibility, presenting alternative policies

for the textile industry. Given the industry need for adaptability, a progressive or comprehensive approach to supply chain management is strongly advised. This approach will enable the industry to effectively navigate the dynamic nature of the market and respond to changing demands and conditions.

5.3.2 Recommendation for Future Research

Establishing excellence in the textile industry supply chain is crucial due to the criticality of supply chain management issues in the sector. A research and consulting center dedicated to the textile industry can serve as a vital resource for supply chain management techniques. By operationalizing a center of excellence focused on researching and addressing shared concerns of supply chain members, textile industry companies can benefit from development programs. Researching supply chain models based on global best practices, particularly in developed countries, can yield valuable insights. The findings of such investigations have the potential to address bottlenecks that hinder the competitiveness of textile manufacturers. It is important to note that the study's small sample size limits the generalizability of conclusions regarding supply chain management as a key contributor to an industry productivity. Future studies should explore areas such as material acquisition and manufacturing efficiency to provide the textile industry with insights into optimal supply chain activities, which is a fundamental requirement for any textile industry organization. This aspect should be considered in future research.

5.4 Research Limitations

Researchers are often faced with constraints and limitations when conducting studies, and this inquiry was no exception. Several restrictions were encountered throughout the research process. One of the limitations was the limited sample size, which was a result of time constraints. The extensive review of literature on the role of supply chain management in enhancing textile industry productivity performance required a significant amount of time. Additionally, the study had a short deadline, making it challenging to gather responses from a wide range of supply chain members in the textile industry. To overcome these limitations, it is crucial to develop a comprehensive timetable that allows for sufficient time to conduct thorough research, including obtaining responses from various sectors within the country's textile industry. Conducting research over an extended period is necessary to ensure its completeness and accuracy. Another limitation was the small sample size, which prevented comprehensive coverage of the entire textile industry in a

single study. Therefore, future research should be conducted across multiple departments within the textile industry to gain a more comprehensive understanding.

5.5 Research Implication

This research demonstrates practical insights to support stakeholders in the textile industry sector and emphasizes the importance of supply chain activities for the overall manufacturing business. It contributes to raising awareness within the textile industry supply chain regarding the significance of factors such as information sharing, inventory management, logistics management, and capacity planning in enhancing operational efficiency. Moreover, this study is highly influential in helping management understand the essential role that coordinated operations management plays in enabling the Pakistani textile industry sector to effectively manage their supply chains and achieve improved productivity performance.

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Questionnaire

Name: _____

Gender: _____

Work Experience: _____

Designation _____

Scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Information Sharing	SDA	DA	N	A	SA
Integrated databases and access techniques to support the information system of an organization					
Sharing the trade information with partner businesses unit is key.					
Sharing the information of production capabilities and market information outside with attached supplier's					
Informing the trading partners about the upcoming changes in products is important.					
Information sharing is helpful to get the new business opportunities.					

Inventory Management	SDA	DA	N	A	SA
Supply chain partners and our firm know the inventory management system					
Supply chain partner's and our firm are involved in standardization of products					
Our firm has alert system who alert the purchasing agent for the order of more inventory					
Our firm has taken care system for stolen and defected inventory					

Inventory system in our firm detect the inventory level are low or above					
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Logistics Management	SDA	DA	N	A	SA
Logistic management plays a vital role in the success of supply chain management.					
Competitive edge comes from effective logistic management.					
Handling of logistics in our firm is take care by procurement.					
Logistic department in our firm handles the material at right place, time and cost.					
Effective logistic system plays important role to fulfill the demand of the consumers.					

Capacity Planning	SDA	DA	N	A	SA
	1	2	3	4	5
Supply chain helps in quick action					
Supply chain help orders to manage the capacity planning					
SCM keep the timetable of activities					
SCM assist in record keeping and manufacturing process.					
Supply chain helps in utilization human resource and utilization of facility					

Innovative Supply Chain Model	SDA	DA	N	A	SA
	1	2	3	4	5
Agile and flexible manufacturing implementation process help in production					
Virtual showroom can influence to increase exports					
Customization option can help in productivity performance					
Supply chain transparency positively influence in production					
Digital fabric visualization significantly helps in innovation					
Productivity Performance	SDA	DA	N	A	SA
	1	2	3	4	5
Decrease in cost is possible with the help of supply chain					
SCM helps in product development and product quality					
Increase in production is possible with the help of supply chain					
Competitive advantage can get with the help SCM					
Overall value chain can be improved with the help of supply chain					

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