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Nexus amid supply chain management practices, competitive advantage and organizational performance

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ABSTRACT

The main objective of this research is specifically to analyze the effect of SCM Practices on CA and OP. The research used in this study is quantitative and it includes data collection of 100 respondents from the manufacturing sector of Karachi. A questionnaire was adopted to collect the data and then the data were analyzed through SPSS. Further Reliability, regression, and reliability were used to check the link between variables. The results show that SCM Practices play a key role in achieving OP and with effective implementation of supply chain (SCM) Practices it's becoming a key way to secure a competitive edge. SCM Practices have a positive impact on OP and CA. The limitation for this study work is limited to the manufacturing sector of Karachi. This study is meant to be cross-sectional so that it is not generalized all over the world. This research is quantitative and only a questionnaire is used for the collection of the data. SCM Practices play an important role in achieving organizational performance so organizations need to implement these practices into their business so that the organization can able to perform well and it will become easier to achieve competitive advantage.

Keywords: *Supply chain management, Manufacturing sector, Pakistan, Competitive advantage, Operational performance*

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1. Introduction

1.1 Background

Presently, it is the era of a competitive environment, and all organizations strive for success. Because of the increased number of rival organizations intensifying globally and locally, organizations do not just tend to rebuild them to produce high-quality services and goods, reduce leftovers, and are capable of responding to the market; they also tend to handle their Supply Chain Management (SCM) efficiently (Rasheed et al., 2024). However, due to the globalized market, which has intensified the challenges of providing the best products and services at the correct time and place at the lowest price, companies also face competition. Organizations should identify the significance of SCM practices that enhance not only the performance of their organization but also synchronize with the partners in the supply chain to progress their mutual performance to remain competitive. Scholars, professionals, and executives have received growing exposure to the theory of SCM. Organizations have begun to realize that efficiency improvement only inside an enterprise is not sufficient; their entire process of SC must be efficient. SCM understanding and practice are now an important requirement for remaining competitive in international competition and for profitable enhancement (Childerhouse & Towill, 2003).

SCM is “a set of three or more entities (organizational or individuals) directly involved in the upstream and downstream flow of products, services, finances, and/or information from the source to the customer" (Mentzer et al., 2001; Rashid et al., 2024a). Whereas, “to support effective supply chain management, organizations undertake activities; these activities are termed SCM practices.” (Li et al., 2006; Rashid et al., 2024b). Good SC practices are the capabilities that affect the complete SC, its key processes, and its parts. These SC practices are affected by relative factors, including firm size, industry type, length and type of SC, and position in SC (Li et al., 2006). To build and sustain competition in organizational products and services, successful SCM practices are important. The research found that management of the supply chain performs various functions, such as product management involving the purchase of basic supplies, the alteration of raw goods into finished goods, and the final delivery of finished goods. It then becomes a critical competitive factor to be capable of establishing professional relations with suppliers, consumers, and further strategic allies based on confidence and long-lasting commitment. Furthermore, previous research has shown that SC motives focus on helping with novelty, and versatility, and then lowering manufacturing costs (Lin & Tseng, 2016; Rashid et al., 2024c). Lately, the upcoming creation demands, according to Olatunji et al. (2019), are linked to the industrial resources and facilities that allow for sustainable growth, certain strategic involvements used by organizations to achieve a CA, and the productions that are frequently repeated in the CA attained in the organization. As a result, collaboration at the supply chain (SC) level would aid in the incorporation of supportable functions into the organizational process. SCMs aim to incorporate data and product runs across the SC as an active strategic tool (Choon et al., 2002a). SCM was established to specifically recognize the strategic importance of trade partners’ coordination and to clarify SCM's dual purpose: to increase the specific firm's performance but also to increase the whole supply chain's performance. SCM is about efficient and effective product movement from the point of implementation to customer satisfaction. For a reliable and secure supply chain, procurement of products, manufacturing processes, and finished product inventories must be handled to control costs and satisfy the needs of its customers. Several companies are now starting to comprehend that SCM is the best way to develop a supportable competitive advantage in an increasingly crowded market for their goods and/or services (Cagliano et al., 2006; Rashid et al., 2024d). Ultimately, the SC of a company has developed a strategic priority for the decision-making of senior management.

The current environment of business is becoming more challenging, and for that, companies should enhance their operations to compete in the market. Accordingly, one of the essential elements

of improving the operations of the business is to execute SCM practices that will enhance organizational performance.

Faweet (2007) states that the business nature has now changed over the past years to the point that companies will not compete with everyone on a performance basis, as historically done in the 1980s. The Council of Logistic Management. SCM describes "the systematic and strategic alignment of historical corporate processes and strategies through these companies inside and across the purpose of SC to maximize the long-run success of separate entities and the entire SC. Businesses have to invest in it and further aspects such as the life cycle of products and customers' expectations, and re-focus more on customer and supplier ties. To achieve an effective combination of the SC, organizations need to implement informational technology, which enables them to gain a competitive advantage over numerous measurements of the SC like cost, delivery, flexibility, quality, and profit. SCM is equal to the incorporation of the base supply, which developed as the conventional procurement and supply roles, as stated by the SCM and purchasing viewpoint (Lamming & Hampson, 1996). From the outlook of management amid transport and logistics, SCM is the same as the logistics structures integrated and therefore focuses on increasing inventories inside the supply chain organizations (Rudberg & Olhager, 2003). These two viewpoints eventually developed into an integrated SCM that incorporates entire operations throughout the supply chain.

Pakistan is an industrially underdeveloped country in South Asia, but it has not yet produced results that match its potential. The manufacturing industry needs to put in more effort to make sure it performs better and contributes more to the country's GDP. SCM activities play a major role in the success of manufacturing companies, given the nature of competition in the world in which they work, both locally and internationally. It is therefore important to conduct a study on the degree to which this sector has implemented the different SCMs that have recently proven to be a source of competitive advantage over organizational effectiveness. Researchers, experts, and corporate executives need to receive growing exposure to the theory of SCM. Several companies are now starting to understand that SCM is important to maintaining a CA that is sustainable. Given this increased attention, the literature could not provide much guidance to help SCM practice (Perona, 2004; Rashid & Rasheed, 2024).

Most of the researchers in SCM concentrate only on the upstream and downstream streams or aspects of the SC. International studies like those by Clark and Lee (2000) focus on downstream relations between manufacturers and retailers. At the same time, Tan (2004) conducted research to investigate the connection between supplier management practices, customer connection practices, and organizational performance on a competitive edge. Although the lack of a non-segregated structure integrating all upstream and downstream activities of the SC and connecting these accomplishments equally to organizational performance and competitive advantage does not help much in establishing a framework for the application of previous SCM results, this study aims to establish a validated framework that defines the connection between SCM practices, OP, and CA. And how they can increase the OP and achieve CA. Therefore, in this study, the analyst tries to study the impact of SCM practices on CA and OP.

1.2 Purpose of the Research

To evaluate the variables and their relationships, a cross-sectional approach will be adopted. It could not be used to generalize internationally. For this research, the size of the sample is limited. The findings are obtained by applying regression analysis, and the results are not affected by sample size. This research study will analyse the connection between SCM practices, CA, and the organization's performance.

1.3 Significance of the Study

This research will support Karachi's manufacturing organizations to assess the impact on their organizational efficiency due to SCM practices. The outcomes of this research will benefit other non-

manufacturing organizations too, as more detail will be shed on the impact of SCM activities on OP. The findings of this study are utilized by other researchers for further work in the same field. As a secondary information source, they can also use the results.

1.4 Outline of the Thesis

In this part, we have discussed the overview, background, research question, research objective, and problem statement of our research. The past literature is discussed concerning SCM practices, OP, and CA. This chapter includes critical reviews of the previous literature and discussions on the topic with previous research, findings, and suggestions from experts, academics, and professionals. It also consists of a conceptual framework and hypothesis-building. Research methodology includes the whole method of research, including sample size, research design, research tool, research approach, sample technique, data sources, and data integration methods. Chapter 4: Result includes data analysis, interpretation of the findings, hypothesis testing, and the results from the sample and last discussion chapter will cover critical debates about the outcomes of the results, recommendations and conclusion

2. Literature Review

2.1 SCM Practices

Within the 1980s, the theory of SCM was created and evolved from traditionalized logistic management. Previous firms were regarded as individuals with few links with other companies considered to be competitive. Organizations concentrate their decisions on internal flows and practices. Handoko et al. (2015) concentrated on SCM in the external and internal parts of logistics and its responsibilities since the growth of SCM is a historical pattern in an organizational environment. Vargas et al. (2018) have concluded that two enablers of top and middle management support should be evaluated. Chen et al. (2019) indicate that the desire to improve the facility provider and ensure all SC results motivate the acceptance of SCM explanations, relating to the organization challenges experienced by specialist institutes themselves. The core goal of SCM is to improve chain efficiency and add value at the lowest possible cost. It involves connecting all supply chain employees into a mutual partnership within a corporation so that efficiency within the supply chain can maximized and all related parties will profit to the fullest. Outsourcing, company collaborations with manufacturers, exchange of information in the SC, cycle time, concretion, and all flows inside the SC, such as the flow of product, the flow of information, and the flow of financial, are all part of SCM activities. These flows and procedures have been designed without taking the further parts of the organization. Christopher (1994) described SC as ' a structure of companies involved in dissimilar procedures and practices that create value in terms of goods and facilities for vital customers by upstream and downstream interconnections. Therefore, the optimization cost has been either upgraded or downstream and has no impact on total production costs. SCM focuses on direct and indirect procedures and flows, and now competition is among supply chains instead of between specific companies. In recent years, procurement has changed from a purely administrative to a key strategic role for many organizations (Reck & Brian Long, 1988).

Organizations need to move towards closer cooperation in the relationship between supplier and buyer. Organizations have begun to realize that efficiency improvement only inside an enterprise is not sufficient; their entire process of SC must be efficient. SCM understanding and practice are now an important requirement for remaining competitive in international competition and for profitable enhancement (Childerhouse & Towill, 2003). Li et al. (2006) introduced SCM techniques, which involve the supply chain upstream as well as downstream. SCM is used as a strategic approach to supply and logistics management, which illustrates the individual's gains through the prism of business processes through operational and organizational boundaries. The Logistic Management Council describes SCM as “It is the systematic and strategic alignment of historical corporate processes and strategies through these companies inside and across the purpose of SC to maximizing the long-run success of separate entities and the entire SC. Businesses have had to invest in it and

further aspects such as the life cycle of products and customers' expectations and re-focus more emphasis on customer and supplier ties. To achieve an effective combination of the SC, Organizations need to implement informational technology which enables them to gain competitive benefit over numerous measurements of the SC like cost, delivery, flexibility, quality and profit. Market pressures for improved product density, diversity and response at higher quality and dependability levels, but decreasing costs have shown that few, if any, final assemblers can do it all on their own. To satisfy their customers, businesses must complement their core skills by integrating complementary skills from other providers. Actual improvements in efficiency, design, and quality cannot be achieved unless suppliers in the leading arrangement innovate in tandem with the purchasing organization to the best of their abilities. The purchasing function is also impacted by changes in the business environment. Therefore, increased awareness of the natural environment, combined with government regulations, influences customers' purchasing decisions (Lamming & Hampson, 1996).

Alvarado and Kotzab (2001) concentrate on the use and removal of excess inventory, the internal systems of organizations, and core competencies through delay. The researcher used supply chain methods in their scientific research on performance, procurement, and customer relations. By Choon et al. (2002a) the key elements of SCM practice were examined: Integration of SC, exchange of information, support management of customers, geographical location and JIT capacity. Because of its multidisciplinary roots, SCM has been described widely; there is no one fundamental Supply Chain Management concept that is commonly utilized (Croom et al., 2000). Management of the supply chain performs various functions such as product management involving the purchase of basic supplies, the alteration of raw goods into finished goods and the final supply of finished materials. According to their review (Vaart & Donk, 2008) disclose that the literature has shown a consistently positive connection between performance in the supply chain and integration (Li et al., 2006) gives further demonstration of the positive effects of integration in the SC. To measure the relationship between a seller and consumer Chen et al. (2019) used supplier basis decline, Communication, long-term relationships, and cross-functional teams.

They classify that the definition of supply chain management shall include shared vision, priorities, information sharing, rewards sharing, risk sharing, relationships, integration processes, long-term relations, and approved leadership of the SC (Min & Mentzer, 2004). The literature thus presents SCM practices from a range of diverse viewpoints to ultimately improve organizational performance. For the evaluation of SCM activities, five distinctive dimensions are selected to analyze and compile literature, including the strategic partnership between vendors, association with customers, standard and quality of information sharing, and postponement. Control of the SC helps companies comprehend the benefits of backward vertical integration while addressing their drawbacks. Nevertheless, there must be some requirements for the positive implementation of SCM. A transition in the culture of institutions for all value chain participants to render them receptive to SCM is the most significant prerequisite (Farley, 1997). These are the five structures that cover the upstream (strategic vendors' partnership) and downstream (relationship with customers) sides of an SC, data flow over an SC, and the internal supply chaining process delay (Choon et al., 2002b). SCM activities not only influence an organization’s overall performance, but they also affect the CA of a company. Through cost/price, performance, time to market, delivery speed, and product development, it is expected to improve the competitive edge of a company. Strategic partnerships between suppliers may boost supplier efficiency, reduce market time, and increase customer satisfaction and responsiveness.

2.1.1 Strategic supplier partnership

The enduring partnership between the company and their distributors is well-defined. It is planned to influence each contributing strategic and operational capacity of an organization to accomplish important ongoing benefits (Stuart, 1997). The number of suppliers would preferably be one for each commodity or part. This would improve good relationships between customers and sellers. These changes are often the result of strategic development activities by suppliers, which permit customers and brokers to exchange knowledge, competencies, and resources, and as a result,

improve rents and performance (Sánchez-Rodríguez, 2009). More coordination and integration of logistics also enable corporations to reduce costs and improve quality and time of delivery at an accelerated pace. Better involvement in practices, for example, the exchange of personnel with suppliers or improved training can reduce costs, increase coordination, and improve quality, which in turn improves reliability and flexibility (Carr & Pearson, 1999). Many SMEs contend that the possibility of market interruption and non-competitive pricing is raised through single procurement.

A strategic alliance concentrates on a long-term partnership and supports problem-resolving efforts and shared planning. These strategic alliances are designed to encourage the mutual advantages of more than one key strategic area, for example, innovation, services, markets, and continuing involvement. Cooperative trends reflect the effort made by companies to improve and increase their performances by creating a trusting environment and strengthening collaboration with selected suppliers through long-term agreements (Guimaraes et al., 2002). Joint ventures with traders will make it possible for companies to work extra efficiently with some major suppliers who are responsible for the product's success. Early-stage traders can provide price-effective project solutions, help select the best products and equipment, and provide support in the evaluation of designs (Choon et al., 2002b). Strategically aligned teams will closely work and minimize effort and time that are inefficient. A good supplier relationship can be an important part of a successful SC.

2.1.2 Customer relationship

Includes the full practice range used in customer complaint management, establishing customer long-term relations and improving the satisfaction level of consumers. Consumer relations as a significant part of the Practices of SCM. The most durable benefit of engaged ties is their intrinsic competition barriers. The rise of mass personalization and customized service leads to a period in which customer relations are essential to the survival of companies (Wines, 1996). A close relationship with consumers helps a company to differentiate its brand from its rivals, retain the loyalty of its customers and greatly increase its quality. Relationships with customers in any enterprise are the key element in the adoption of SCM activities. Successful execution of SCM programs requires suitable relations with the associates of the SC, as well as consumers. Good consumer partnership helps a firm to distinguish its goods from rivals and continue the loyalty of customers (Bratić, 2011).

2.1.3 Level of Information Sharing

The sharing of information has two ways: quality and quantity. The two ways are vital for SCM practices and in earlier studies of SCM, it has been considered as independent buildings (Romano & Vinelli, 2001). Information sharing can be different from operational to strategic, logistics to common market and information of its customer (Mentzer et al., 2000). Some studies have indicated that continuous and current advertising information at each knob inside the supply chain is the secret to the smooth SC (Childerhouse & Towill, 2003). The information sharing level (quantity aspect) refers to the amount to which significant and exclusive information is passed on to the partners of SC (Monczka et al., 1998). Data can be used as a means of competitive gain if you use the accessible data and share it with further members within the SC (Mason-Jones & Towill, 1997). SC associates who frequently exchange information can work for one company. Through this, they can easily realize the necessity of end consumers and can therefore respond quicker to market variations. Information sharing is considered an important contract to maintain a good supply chain partnership. The successful use of timely and appropriate data is a strategic and differentiated factor for all operational fundamentals within the SC. The outcomes state that effective use by all useful elements of the SC of timely and relevant information is a competitive key factor (Childerhouse & Towill, 2003).

2.1.4 Quality of information sharing

Sharing information quality contains elements like reliability, suitability, appropriateness, and

integrity in the exchange of information (Moberg et al., 2002). Whereas information sharing is significant, its value and influence on SCM depend on when, with whom, and how the information is being shared (Holmberg, 2000). It has been recommended that companies intentionally misrepresent information that might reach not only their rivals but also their vendors and clients (Mason-Jones & Towill, 1997). Conflicting interests and resourceful conduct of supply chain colleagues and supply chain-wide information imbalances impact the quality of information (Feldmann & Müller, 2003). Firms should treat information about their organization as a strategic asset, ensuring that minimal delay and distortion are achieved. Since the release of information is known as power loss, despite, maintaining the reliability of the information shared is a main feature of productive SCM (Feldmann & Müller, 2003).

2.1.5 Postponement

Postponement is described as the process of shifting more than one operation or event (making, purchasing, and distributing) to a distant future point in the SC. For the design of the postponement policy, two main factors include how many delays there are and which delaying measures are in place (Beamon, 1998). Using indistinguishable products as long as needed would increase the efficiency of a firm's ability to react to changes in customer requirements. A company may also minimize supply chain expenses through the storage of indistinguishable inventory (Van Hoek, 1999). Postponement enables an organization to develop various product versions flexibly to meet the variations in customers' requirements, distinguish between products, or change a claim role. Postponement must be compatible with the type of product, business demands, and logistics process structure of an organization. In specific, postponement might be suitable in the following terms: creative products; high-density, highly specialized, or wide-ranging products; markets with a long delivery period, limited production speed, and high demand insecurity; and large economies of scale manufacturing and distribution networks that need no particular information.

2.2 Competitive Advantage

The competitive edge is how much an organization can position itself in defence of its rivals (McGinnis & Vallopra, 1999). In empirical research, value, prices, performance, supply, and mobility have been established as essential competitive resources. It includes the ability to distinguish between an organization and its competitors and is a result of crucial managerial decisions (Tracey et al., 1999). The use of information technology increases; therefore, it underlines the significance of buying functions as regards supplier associations and reproduces the need for instruments that can help communication and exchange of information (Carr & Pearson, 2002) and the assessment, control, and distribution of different duties.

The belief that sustainable CA is at the core of companies, has been articulated by top executives and academic literature in several contexts over the years, Al-Jarrah et al. (2019) examine this problem and present three basic methods for developing the CA, namely: an ever-changing work nature creates an environment conducive to originality in an emerging job nature. Quickly changing job situations by embracing work environment changes based on competitors and the novelty of company phases by increasing workers' novelty actions for organizational phases. Based on past studies, Zhang et al. (2003) explain a study model for market efficiency and describe the five elements: competitive cost, finest rates, consumer service reliability, consistent distribution, and creativity in production. The theory of their competitive advantage and subsequently SCM, despite its existence since enterprises have become organized to offer goods and services to businesses, is a comparatively recent thought in the literature of management. As a result, companies are increasingly demanding instruments to support the more effective deployment of strategic and operational skills. Strategic and operational redesign in this way often demands IT tools with proven efficiency (Baloch & Rashid, 2022). Such companies recognize the benefits of transforming the purchasing process into strategic planning and the resulting competitive advantage. Increased cooperation globally, vertical disintegration, and focus on fundamental activities lead to the perception that companies are connected within an interconnected supply chain.

This point of view strategically produced the challenges of effectively coordinating the whole supply chain, from top to bottom. However, competitiveness based on time has become a significant strategic concern in recent studies. A study found that that time is the next important source for gaining a competitive edge. Controlled practices, like supplier certification and assessment, can be helpful to ensure the consistent and regular application of quality criteria, due to which it improves the overall quality of the product. Depending on the above, the elements of competitive benefit explained in this research are cost/price, performance, consistency, consumer development, and time to market.

2.3 Organization's Performance

The SCM's immediate goals are mainly to gain efficiency and decrease time cycles and inventory to gain market share and profitability for all SCM members. Previous research indicates that successful SCM activities directly affect a firm's overall market and financial performance (Hashmi, 2022; Shin et al., 2000; Albhirat et al., 2024). Several tests have evaluated how well a company meets its market-focused targets and economic results (Li et al., 2005). Organizations that share their resources and knowledge can also produce more revenue than is individually possible (Dyer & Singh, 1998). Organizational performance takes several methods, depending on whom and the measurement purpose. To make informed decisions, different shareholders need different indicators of performance (Hashmi, 2023). Richard et al. (2009) define that OP covers three certain areas of organizational results: (a) return of shareholder (total return of shareholder, financial value added, etc.); (b) financial performance (ROA, profits, ROI, etc.); and (c) performance of the product (market share, sales, etc.). Therefore, the performance of an organization is calculated by non-financial and financial measures.

A firm's performance is an organizational capability to accomplish its task through sound leadership, good governance, and constant rededication to attain outcomes. Adaptable, mission-driven, consumer-focused, innovative, results-oriented, and supportable non-profits. Identifying and collaborating with suppliers and interface teams requires other capabilities, such as flexibility and the development of products (Carter et al., 1998; Rashid & Rasheed, 2023). Corporate performance tells how often an organization can produce its industry-oriented objectives and financial objectives (Yamin et al., 1999). Financial measurements were used as a tool for relating and evaluating organizational behaviour over time (Holmberg, 2000; Rashid et al., 2023). SCM will eventually lead to improved corporate efficiency. A company's capacity to deliver the product type and size required by the consumer (Handfield & Bechtel, 2002). Several reports have assessed the performance of the company using financial and business parameters. In this study, the same elements are applied to calculate the organization's performance.

2.4 SCM Practices (SCMP) and Organizational Performance (OP)

The SC model created in this research study recommends that SCM practices have directly affected an organization's whole marketing and financial performance. The SCM practice is supposed to expand the market share and investment return of a company (Shin et al., 2000) and enhance its overall performance (Carr & Pearson, 2002; Rasheed & Rashid, 2023). The strategic vendor alliance identified financial performance benefits for specific organizations (Rasheed et al., 2023). SCM activities impact not only the total organizational success but also an organization's strategic advantage. This ensures that SCM strategies will help to create a CA for the business and the whole supply chain to enhance operational efficiency. Innovative designs and logistics linkages with distributors are connected to enhanced plant life (De Toni & Nassimbeni, 2000).

Relationships with customers have also shown that the supplier strategic relationship for corporate success has improved significantly in terms of financial results and that it has generated company-specific benefits. The degree of greater sharing of information was correlated with lesser total costs, a high rate of performance, and a short time cycle (Lin et al., 2002). The basic results of SCM have been verified by genuine evidence. A current report found that companies with SCM's best cash-to-cash cycle advantage over medium-sized firms have a 40–65% advantage, and the top firms have 50–85% lower inventories than rivals. Therefore, the following hypothesis is formed based on

the above literature:

Hypothesis 1: organizations with higher levels of SCM practices have a high level of OP.

2.5 Supply Chain Management Practices (SCMP) and Competitive Advantage (CA)

As stated by Li et al. (2006) CA is in which a company can defend its rivals, containing the capability to differentiate an entity from its rivals and, as a result, to take important management decisions. The competitive edge usually means that a company may provide one or more of its rivals' following competencies: lower rates, greater quality, high efficiency, and a shorter time of production. Such functions, in turn, would increase the overall execution of the company (Mentzer et al., 2000; Rashid et al., 2022a). Increased cooperation globally, vertical disintegration, and focus on fundamental activities lead to the perception that companies are connected within an interconnected supply chain. This point of view strategically produced the challenges of effectively coordinating the whole supply chain, from top to bottom. However, competitiveness based on time has become a significant strategic concern in recent studies. A short-term company with fast, innovative products can be the first on the market, therefore having a high share market and a higher volume of sales (Rashid et al., 2022b).

The competitive advantage can result in high economic performance, customer satisfaction and retention, and the effectiveness of relationships. Lower customer satisfaction products have less competitive changes to their product markets, increasing their revenue and productivity. A study found that time is the next important source for gaining a competitive edge. For high-quality goods, the company may pay premium prices and therefore raise its profitability in terms of revenue and rate of return. SCM practices have an influence not only on the overall OP but also on its competitive edge. It is anticipated that the competitive edge of a company will increase through price and costs, efficiency, production speed, selling time, and consumer creativity.

Earlier research demonstrated different elements of supply chain management (e.g., SSP) that affect several CA factors, like cost and price. The strategic relationship between vendors could boost product quality minimize selling time (Rashid et al., 2021a) and increase the response and level of satisfaction of the customer (Power et al., 2001). Sharing of information contributes to a high degree of combination of the SC by allowing businesses to access a reliable supply and rapidly market products. Sharing of information and information quality lead to customer satisfaction (Spekman et al., 1998) and quality of partnership. The approach of postponement also increases supply chain efficiency and manages worldwide productivity and consumer response (Van Hoek et al., 1999; Rashid et al., 2021b). Hence, the hypothesis is proposed as follows:

Hypothesis 2: organizations with a higher level of supply chain management practices have a high level of CA.

2.6 Literature Review Summary

You can see the literature review summary in below table 1.

Table 1: Summary of Literature Review

Construct	Definition	Source
SCM Practices	The amount of tasks performed by a company to facilitate effective SCM.	(Li et al., 2006)
SSP(Strategic Supplier Partnership)	The enduring partnership among the client and their suppliers. This seeks to use specific member organizations ' strategic and organizational resources help them to accomplish major benefits.	(Johnston, 2004)
Customer Relationship	Customer complaints control, long-term consumer communications, and maximising customer satisfaction are the full range of activities.	(Noble, 1997)
Level of Information Sharing	To what extent acute and confidential information is communicated to the supply chain partner?	(Monczka et al., 1998)
Quality of Information Sharing	Refer to information sharing's accuracy, timely delivery, suitability and integrity.	(Moberg, et al., 2002)

Postponement	The process of moving more than one activity and operation (manufacturing, sourcing and delivery) in the supply chain stage much later.	(Beamon, 1998)
Competitive Advantage	The competitive edge is how much an organization can position itself in defence of its rivals.	(McGinnis & Vallopra, 1999)
	Competitive advantage is in which a company can defend its rivals, comprising the capability to distinguish an entity from its competitors and as a result to make important management decisions.	(Li et al., 2006)
Organizational Performance	Organizational success is a firm's ability to carry out its position through effective planning, strong leadership and consistent attention to results.	

Source: Literature

Below figure 1 represents the framework of research.

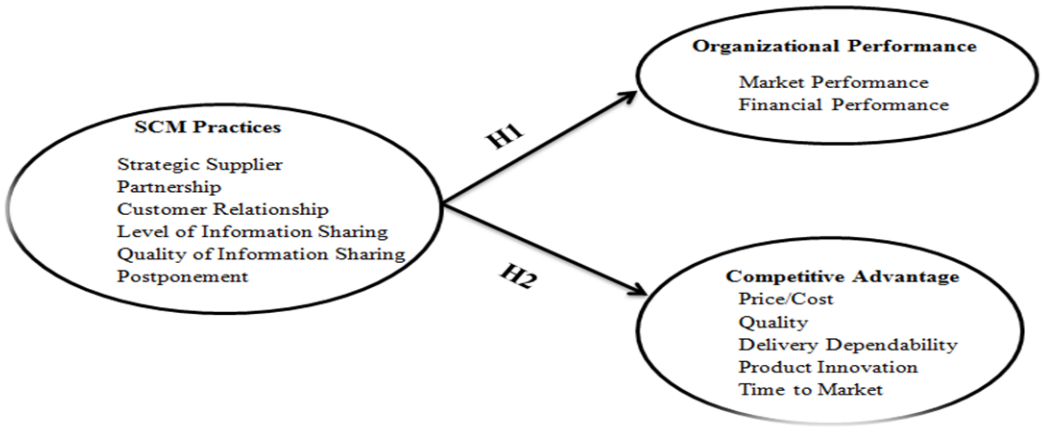

Figure 1 Conceptual framework (author's work with the support of literature)

The hypotheses of the study are as follows:

H1: Organizations with higher levels of SCM Practices have higher levels of OP.

H2: Organizations with higher levels of SCM Practices have a high level of CA.

Independent Variables: SCM Practices

Dependent Variables: Organizational Performance, Competitive Advantage

3. Research Methodology

A research method is a systematic plan for conducting research. Everything beneficial to goal achievement is part of the research methodology (Rashid et al., 2021; Khan et al., 2022; Amirah et al., 2024). This chapter presents all research methodologies: research approach, research type, sample size, sampling technique, research instruments, research design, the process of data collection and static data analysis techniques. The research approach is a process to elaborate ways and means of data collection, analysis, and perception. Two methods are used mainly in the research approach including the Deductive and Inductive methods. The "deductive approach" is used to justify the theories or hypotheses. On the other hand, the "inductive approach" is used to publish new theories and detail a process where theory is developed by observation (Hashmi et al., 2021a; Khan et al., 2021). The approach of this study is deductive because the intention to test is already an established concept. It initiates with a hypothesis statement and thus observes the prospects to reach a defined consistent deduction. Whereas a qualitative method poses a threat to trustworthiness. Therefore, a deductive leading to quantitative research is deemed adequate (Haq et al., 2023).

There are two natures of business research i.e., Quantitative and Qualitative research. This research is quantitative in nature. The reason is that this research will test the hypothesis and the

problem is known. It concentrates on the measurement and analysis of impact or relationships between variables through statistical techniques. The collection of data is collected only with the help of a questionnaire. The impact of independent variables is discussed over dependent variables; therefore, this may help to comprehend the nature and strength of SCM practices, Organizational Performance and Competitive edge of Karachi's manufacturing sector. It helps to decide the SCM Practices' impact on CA and OP in a particular sector.

The research design is a basis of methods and skills which is chosen by the investigator to combine not the same essentials logically to solve the problems while exploring to achieve the objective of the study. The research design is known as the structure of research. Three main types of research designs that are mainly used in the study are explanatory, exploratory, and descriptive research design. In this study, the explanatory method is used to study the issue in-depth. The research study is causal and a close-ended structured questionnaire is used for data collection to identify the extent and nature of the cause-and-effect relationship (Alrazehi et al., 2021).

3.3 Sampling Design

Sampling is described as the method of choosing certain associates or a subset of the population to make statistical interpretations from them and to evaluate the characteristics of the whole population (Agha et al., 2021; Hashmi et al., 2021b). As per Saunders, 2007 measuring table, the least sample required for a population of 100,000 and beyond at a 5% margin of error is 384. 95 per cent level of confidence implies 95 out of 100 samples. Therefore, the sample size taken for this research is 100, which is reliable. There are two types of sampling techniques: probability and non-probability sampling. When the population size is known and every element has the same chance of being chosen, a probability sample is used; however, when the population size is unknown and the elements do not have an equal or predetermined chance of being chosen, a non-probability sample is used (Hashmi et al., 2020a; Haque et al., 2021). The sampling technique of the present study is probability sampling and further simple random sampling because the population size is known. A basic random sample is supposed to reflect a group in an unbiased way. Because every member of the population has an equal chance of being selected, it is considered a fair technique to select a sample from a larger population (Brown, 1947; Das et al., 2021; Hashmi et al., 2020b). In addition, it provides a good sample size to support the goal of the current research. This amplifies the fact that all people in the target population have the same opportunity to be our respondents. This type of sample has been used to achieve our desired target population.

3.4 Instrument of Data Collection

A research instrument is used for gathering data to answer the research question; it produces a data form suitable for the testing of hypotheses or research questions. Common types of research instruments are questionnaires, interviews, records, observation etc. During the current research, the questionnaire was selected as a data collection instrument to obtain the answers from respondents. Research tools used for this research are measured on a five-point scale between 1 strongly agreed to 5 strongly disagreed. In this context, it was important to consider that the structure of the questionnaire meets the requirements of the current study. The questionnaire language has made it easy for the respondent to understand and answer based on their level of understanding.

3.5 Procedure of Data Collection

There are two sources of data collection: primary data and secondary data (Rashid et al., 2020). Data which are not already available and are collected for any study by the researcher are termed primary data. Whereas secondary data are records that are already collected or obtained by others. This data may be published or unpublished. In this research, the questionnaires were distributed through Facebook, e-mail and personal references have been used to gather answers to the desired number of respondents in the manufacturing industry. Some names of companies are as follows from where the data is being collected, like (Atlas Battery, Shah Murad Sugar Mill, Getz

Pharma Artistic Milliners etc.).

3.6 Statistical Technique

The completed questionnaires will be checked for completeness and consistency. In this study, quantitative techniques will be used, in which descriptive and inferential statistical techniques will be in data analysis. The quantitative data will be coded and transferred into Statistical Packages for Social Scientists (SPSS) and analyzed using descriptive statistics, like Mean, Median, Standard deviation and variance described in the data. Quantitative data will be presented in tables and graphs. In addition, the hypothesis will be tested to achieve the research objectives, including Cronbach's Alpha test, Descriptive Statistics, Correlation Analysis and Regression Analysis. A multiple regression analysis will be conducted, which will provide the generalization of the findings to find the SCM practice's impact on OA and CA. Correlation is used to measure the variable's relationship and strength. Whereas reliability analysis is applied to check the internal uniformity of each variable.

4. Results

An extensive and detailed result of the primary data that has been collected from 100 supply chain personnel has been provided in this chapter. On the gathered primary data, a statistical technique is applied by using SPSS software. Then the results were extracted and interpretation was made regarding the developed hypothesis of this study and findings were revealed.

4.1 Respondent Profile

The respondents were supply chain personnel from the manufacturing sector of Karachi. Both males and females were included in this research investigation, aged between 18 and 46. Section one of the questionnaire includes the respondent's gender, age, academic qualification, work experience, and designation. Table 3 shows the frequency and percentage of the respondent's demographic.

Table 3: Respondent Profile

		Frequency	Percentage
Age	18 to 25	30	30%.
	26 to 35	32	32%
	36 to 45	30	30%
	46 or above	8	8%
Gender	Female	27	27%
	Male	73	73%
Education	Undergraduate	7	7%
	Graduate	70	70%
	Post Graduate	23	23%
Work Experience (In Years)	0 – 5	62	62%
	6–10	25	25%
	11 – 15	5	5%
	16 or above	8	8%
Designation	Finance Officer	7	7%
	IT Manager	3	3%
	Supply chain manager	26	26%
	Supply chain officer	30	30%
	Others	34	34%

Source: SPSS output

4.2 Reliability Analyses

To check the accuracy of primary data, the Cronbach alpha method is used. It measures the consistency and validity of the primary data collected through questionnaires. It will identify that the data is reliable and authentic for further analysis. It is also said that the result of Cronbach's alpha test must be greater than 0.6 (Khan et al., 2023a; 2023b). This signifies that the primary data is trustworthy enough to move forward with further investigation. The following table 4 is a description of the individual-variable reliability test:

Table 4: Summary Of Reliability Analyses

Construct Or Variable	Cronbach's Alpha	No. Of Items
SCM Practices	0.911	24
Organizational Performance	0.897	7
Competitive Advantage	0.814	16

Source: SPSS output

4.3 Hypothesis Testing

To test the hypotheses, Regression analysis is used.

4.4 Regression Analysis

To describe the association between the predictor variable and a response variable, a regression test is used. This test is used for the analysis of the strength of the effect the predictor variable has on the response variable. In the regression table, the "p" values tell whether the association is statistically significant or insignificant and if the hypothesis is accepted or rejected. If the "p" value is greater than 0.05 then the hypothesis will be rejected otherwise it will be accepted.

4.4.1 Hypothesis 1

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Standard Error Of The Estimate
1	.398[a]	.603	.602	.4944

A. Predictors: Constants, Scm Practices

Source: SPSS output

Table 6: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.503	1	4.503	18.425	.000[b]
	Residual	23.951	98	.244		
	Total	28.454	99			

a. Dependent Variable: OP

b. Predictors: Constants, SCM Practices

Source: SPSS output

Table 7: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.189	.374		5.847	.000
	SCM-Practices	.422	.098	.398	4.292	.000

a. Dependent Variable: OP

Source: SPSS output

In this model, the value of R square, also known as the coefficient of determination, displays the variance proportion in DV that is described by IV. The R square value in the regression table 5 is 0.603, which shows that IV, which is SCM Practices, depicts 60.3% variability of DV, which is OP. The equation of multiple linear regression in Table 6 is ($F = 18.425$, $p < 0.000$) with an R square of 60.3% (Rashid & Rasheed, 2022). The coefficient value of SCM practices in Table 7 is 0.422, which means one unit change in SCM practices results in a positive change in organizational performance of about 0.422. Here, IV is SCM Practices, and DV is OP. The sig. value of both SCM practices and OP is less than 0.05, so there is a significant association among both variables. Hence, hypothesis 1, which is the impact of SCM practices on OP, failed to be rejected. The ANOVA table 6 aids in determining whether the entire model is accepted or not. The level of significance used to determine this information is a 5% level of significance. It is obvious from Table 7 that the sig value is 0.000, which is less than 5%; hence, this model is accepted and can be used for further interpretation

(Hashmi & Mohd, 2020; Rashid et al., 2019).

4.4.2 Hypothesis 2

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.672[a]	.837	.836	.4173

a. Predictors: Constants, SCM Practices

Source: SPSS output

Table 9: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.085	1	14.085	80.868	.000[b]
	Residual	17.069	98	.174		
	Total	31.154	99			

a. Dependent Variable: CA

b. Predictors: Constants, SCM Practices

Source: SPSS output

Table 10: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.965	.316		3.053	.003
	SCM-Practices	.746	.083	.672	8.993	.000

a. Dependent Variable: CA

Source: SPSS output

In the model, the value of R square, also known as the coefficient of determination, shows the variance proportion in DV that is described by IV. The R square value in the regression table 8 is 0.837, which shows that IV, which is SCM practices, depicts 83.7% variability of DV, which is CA. The equation of multiple linear regression in Table 9 is ($F = 80.868$, $p < 0.000$) with an R square of 83.7%. The coefficient value of SCM practices in Table 10 is 0.746, which means one unit change in SCM practices results in a positive change in the competitive advantage of about 0.746 (Rashid & Amirah, 2017). Here, IV is SCM Practices, and DV is CA. The sig. value of both SCM practices and CA is less than 0.05, so there is a significant association among both variables, so hypothesis 2, which is the impact of SCM practices on CA, is accepted. The ANOVA Table 9 helps to conclude whether the whole model is accepted or not. The level of significance used to determine this information is a 5% level of significance. It is obvious from Table 10 that the sig value is 0.000, which is less than 5%; hence, this model is accepted and can be used for further interpretation (Rashid, 2016).

4.5 Summary of Hypotheses Testing

Below table 11 represents the summary of the hypothesis.

Table 11: Summary of Hypotheses Testing

Hypothesis	Results
H1: Organizations with a higher level of SCM practices have a higher level of OP.	Accept H_1
H2: Organizations with a higher level of SCM practices have a higher level of CA.	Accept H_2

Source: Based on the results of SPSS output

5. Discussion

5.1 Discussion, Recommendations, Limitations and Conclusion

5.1.1 Supply chain management practice and organizational performance

The findings of this study back up the idea that organizations with a high level of SCM practices also have a high level of OP. The effectiveness of an organization's SCM practices is

critical. With the help of good SCM practices, firms can perform well. This research showed that with the help of five independent variables (SSP, relationship with customer, quality of information sharing, information sharing level, and postponement), there was a positive impact on the OP. Effective SCM is becoming a key way to achieve organizational performance. The outcomes indicated that the strong association between SCM practices and OP is confirmed so that greater execution of SCM practices would lead to higher levels of organizational efficiency. However, the study shows a link between the practices of SCM and firm performance. To achieve high performance, organizations need to maintain their relationships with customers and increase the level of quality information to maximize organizational performance. It is shown that SCM practices directly affect the OP. The result of this study shows the significance of SCM practices. This also supports the studies of some previous researchers. The results are aligned with Li et al. (2006). Click or tap here to enter text (Hashim et al., 2020).

5.1.2 SCM practices and competitive advantage

This study points out the association between SCM practices and CA. The outcome of this hypothesis shows a positive association between SCM practices and CA. This also supports the studies of some previous researchers. The results are aligned with those (Li et al., 2006; Tukamuhabwa et al., 2021; Khaddam et al., 2020).

The increasing competitiveness of an organization may permit a firm to execute a high level of SCM because of the need to continually advance its rivals and, in today's dynamic corporate world, maintain its competitive position. The result of a high level of SCM practices can increase CA. The more SCM practices are followed by organizations, the easier it is for them to achieve CA and improve OP. Effective SCM is becoming a key way to secure a CA.

5.2 Recommendations

This research examined the fact that SCM practices play an important role in achieving organizational performance, so organizations need to implement these practices into their businesses so that they can perform well and achieve a competitive advantage. Organizations need to build a good relationship with their customers and a good strategic partnership with their suppliers because these are the most effective SCM practices and they need to emphasize the delivery of goods or services to clients without sacrificing quality at the lowest possible cost.

5.3 Limitations of the Research

The limitations of this research are as follows:

a. This research study has been conducted over a limited time frame with a specified sample size. Hence, it is difficult to generalize the overall findings.
b. The sampling technique was chosen for convenience, due to which the generalizability of this study is limited.
c. This study is specific to the manufacturing sector of Karachi; therefore, all the analyses and outcomes are limited to a chosen sector.

5.4 Future Research

This research used some specific controllable variables like gender, age, qualification, and monthly income to observe the influence of SCM practices on CA and OP. Researchers can add some more controllable variables to their future research. This research is specific to the manufacturing sector, but other researchers can test this relationship with a specific organization or a different sector and increase or decrease the sample size. This research study shows a positive influence of SCM practices on OP and CA. Future research can add a competitive advantage as a mediator to test the association between SCM and OP.

5.5 Conclusion

This study observed the association between IV and DV and the impact of SCM practices on CA and OP.

This study's main purpose is to analyze the influence of SCM practices on the performance of the organization and its competitive edge in the manufacturing sector of Karachi. This research includes independent variables of SCM practices (SSP, level of information sharing, postponement, CR, and quality of information sharing). DV, which is organizational performance (financial performance, market performance), and CA (quality/cost, delivery dependability, quality, time to market, and product innovation). This research includes 48 questions that were asked of respondents. The main purpose of these questions was to test the significant association between SCM practices and OP and CA. The technique used for the collection of data in this research was convenience sampling, which gathered data from 100 respondents. Cronbach's alpha is used to check the questionnaire's reliability. The Pearson correlation test is also used to find out the relationship between DV and IV. The result of this study shows that SCM practices have a positive impact on OP and CA. Research indicates that SCM practices play an important part in the OP. With the help of good SCM practices, firms can perform well. To build and sustain competition in organizational products and services, successful SCM practices are important. The more SCM practices are followed by organizations, the easier it is for them to achieve CA and improve organizational performance. Effective management of the SCM is becoming a key way to secure a CA.

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