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Supply Chain Management Practices and Organizational Performance in Manufacturing Industry

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ABSTRACT

The study aims to evaluate the impact of supply chain management practices on the organizational performance in Manufacturing firms. The methodology included a quantitative approach and explanatory type with convenience sampling and linear regression analysis using a sample of 200 respondents working at various manufacturing firms in Karachi-Pakistan. The study found that strategic supplier partnership, knowledge management capability, and customer relationship significantly influence organizational performance. Since there were only limited observations, the revalidation of variables was not done in this study. Secondly, a complex supply chain management concept includes companies' networks to produce and deliver the final output. Thus the overall domain was not studied in this research. Future research could be done on the higher-order model using the same constructs to find the in-depth relationship between independent variables and the dependent variable using a complex statistical technique.

Keywords: *Strategic supplier partnership, Knowledge management capability, Customer relationship, Pakistan*

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1. Introduction

In Supply chain management, the most significant thing can be done to improve performance and maintain a competitive edge in the market. This is because supply chain management is critical and can be employed beneficially. This is how the process goes. They have maintained their position as competitive players in the market since SCM rivalry among the organizations has been enhanced. In the early 1990s, the global market became subject to intense rivalry to deliver the appropriate goods or services at a price comparable to those of competitors at the appropriate time and in the appropriate location (Liu & Atuahene-Gima, 2018). Enterprises must not only restructure themselves to produce higher quality services and products but also reduce waste and respond to the market needs. However, it is used to manage its supply chains effectively due to numerous competing expanding companies both globally and locally. Businesses must overcome a range of challenges in order to compete in today's competitive global marketplaces.

For businesses to continue to be competitive partners, they need to acknowledge the significance of supply chain strategies that improve not just their businesses' performance but also their supply chains' overall performance. Despite significant advances made in research and practice, a great number of companies are still having trouble understanding the notion. The difficulties arise from coordinated planning and supply operations among supply network participants (Baloch & Rashid, 2022; Rashid & Rasheed, 2022). Although companies can obtain common resources, their ability to deploy and configure them can provide differentiation and diversity (Anwar, 2022). Internal and external organizational resources that might assist a company in acquiring a competitive advantage and improving performance are called organizational capabilities (Amjad, 2022). Knowledge is an essential strategic resource for organizational survival, growth, stability and development (Al-Hakim & Hassan, 2016).

Furthermore, knowledge is the foundation for developing critical competencies that will help organizations gain a competitive advantage and increase performance (Hunaid et al., 2022). Organizations would benefit from knowledge management (KM) by information sharing with external partners to gather information about the competitors' services, products, techniques, and best practices (Shaheen, 2022). Organizations must interact and create long-term relationships with downstream and upstream supply chain partners for enhancing their performances and thriving in a competitive climate (Xu et al, 2014). Managing knowledge is seen as a critical strategic advantage that helps organizations achieve their goals in supply chain members' coordination and integration (Rasheed, 2022). Organizational performance was a continual process of several activities, not just an outcome.

Capabilities were the effort to carry out activities and procedures that led to organizational performance. Three standard points and a balance score were criteria to assess the organization's success. The first is the customer, the second is the process of internal business (capabilities), and the third is the organization's growth and learning. By establishing a solid relationship between the company and the customer, thus, customer relationship management was the key to increasing revenue and profit. Customer relationship management also helps to build and maintain customer-company trust. Satisfaction, loyalty, cross- and up-selling, repeat purchases, decreased customer complaints, high market share, lower expenses, and profitability all contributed to this trust (Ogilvie et al., 2018). Thus, it has been hypothesized that supply chain disruptions have an essential and detrimental effect on overall performance and productivity.

The continuous variations also entail that the organizations work with the increased volume and great information diversity. Thus the organizational managers are concerned with the quality improvement in the information they have for decisions and planning purposes. Most firms also have

to goal the changing needs of customers and the instabilities of the environment. However, many disturbances can damage production and its process, just like the changes in demand patterns, breakdowns of machines, fluctuations in finances and many others. Thus the variable of uncertainty should also be focused on (Ali, 2022). Other firms are increasingly adopting the strategic supplier partnership to develop Inter-organizational collaboration in their supply chain. There are some main challenges and successes that all are connected with how they handle and administer the inventory level. It also depends on how it affects the satisfaction of customers since it remains unknown how the collaboration of partners and companies with different Venders and suppliers affects organizational performance and the supply chain (Victory et al., 2022). The study aims to investigate the practices of supply chain management and organizational performance. To achieve this objective, we have some specific objectives required to fulfil the study's primary objective. Based on the study research problem and research objectives, this study will specifically seek answers given below:

R1: Does the strategic supplier partnership influences organizational performance?

R2: Does the knowledge management capability influences organizational performance?

R3: Does the customer relationship influences organizational performance?

2. Literature Review

2.1 Strategic Supplier Partnership and Organizational Performance

The strategic supplier partnerships functions and how they impact the supply chain integration, SC performance, and farmer performance. His present research is focused on Indonesia, specifically the province of East Java. He got a final sample of 200 responses, which he utilized to analyze the data. According to the data, SSP was shown to be ineffectively linked with all parameters not studied. SC integration, however, was discovered to be a strong and favourable link between SC and farmer performance. Furthermore, the performance of the farmers was found to be influenced by the performance of the SC. The essential aspects in enhancing their performance and development were improvements in SC integration and management. Further, the researchers examined the extent to which SCM practices are used in Haco Industries Ltd, as well as the relationship between the performance of the organization and SCM practices in the same industries. The supply chain management practices and organizational performance relationship were investigated using four key dimensions of supply chain management practices as independent variables. These key dimensions were "*information sharing, customer relationship, supplier partnership, strategic and training (practices)".* Market/business and operational performance have different approaches to investigating organizational performance. We chose forty workers at random to act as our sample. A questionnaire was used as a study technique, which allowed for the information to be acquired systematically. A handful of critical informants were responsible for collecting both primary and secondary data. Thus, the collected data was analyzed using SPSS XVIII. Frequency and average score, the study's main findings revealed that Haco Industries. In addition, Haco Industries have a higher focus on the practical implementation of SCM practices, and they have been successful in enhancing the organizational performance by reducing lead time; providing higher levels of customer service, lowering operational costs, providing a quality product, responding quickly to market changes, and expanding market share and sales. Thus all four practices had a more substantial influence on the organization's performance than any single practice, illustrating the value of embracing a diverse set of SCM procedures.

H1: Strategic supplier partnership has a significant influence on organizational performance.

2.2 Knowledge Management Capability and Organization Performance

Salama (2017) analyzed Knowledge Management Capability in depth. A company's KM competency is its ability to acquire, develop, and maintain knowledge. The research method used in this study was an empirical assessment of the hypothesized correlations among research variables

utilizing self-administered questionnaires. There are 63 factories with over 100 employees in New Borg Al-Arab industrial city. This study's key findings show that knowledge management skills are essential for predicting organizational learning and supply chain coordination Members of the supply chain have different management practices. Furthermore, it is evaluated that the factories under research have other factors such as knowledge management capabilities and impact supply chain management practices and organizational learning. To continuously develop new knowledge, execute knowledge-related resources integrate, share, transfer, and knowledge transfer (Tseng & Lee, 2014). This brought a long-term competitive advantage to the firms while increasing the organization's effectiveness. According to the firm's knowledge-based and resource-based viewpoint, this research looks at KM infrastructure capability from a socio-technical standpoint. The combination of social infrastructure and technology is viewed as a source of strategic assets in this approach.

H2: Knowledge management capability has a significant effect on organizational performance.

2.3 Customer Relationship and Organization Performance

The concept of customer relationship (CR) is based on a client's level of satisfaction with services and how and to what extent their complaints about products are addressed to keep their loyalty and meet their expectations. Furthermore, businesses have directed their executives to focus on developing CR in order to engage customers in their services and achieve high levels of customer happiness and practice (Wang & Kim, 2017). According to (Yihdego et al., 2019), positive CR helps managers boost their business and develop a firm basis on which to improve organizational performance. It is defined as the prospect of SC in which it develops loyalty, trust and integration to work with collaboration between the partners to have long-term sustainable performance and the customers.

H3: Customer relationship has a significant effect on organizational performance.

2.4 Underpinning and Supporting Theories

The resource-based view tells that the organizations have resources strategists select the strategy or competitive position. A subset allows them to obtain a competitive advantage and leads to superior long-term performance. Valuable and rare resources can be utilized to gain a competitive advantage. In SCM, the resource-based view (RBV) (Hashmi et al., 2021) helps companies create agility, adaptation, and alignment. As a result, we may conclude that the RBV theory promotes strategic supplier partnerships, supply chain practices, and firm performance by allowing us to establish strong norms while also increasing our purchasing power.

Further, from the knowledge-based perspective of the business, knowledge is considered the resource with the most significant strategic significance for a company. Its proponents say that diverse knowledge bases and abilities across firms are the most significant predictors of long-term competitive advantage and better corporate performance since knowledge-based resources are challenging to copy and socially complex. This information is entrenched in and carried by several different entities, including corporate culture and identity, rules, procedures, documents, and systems and personnel. The knowledge-based theory of the firm's basic tenet is that organizations can handle knowledge more effectively than feasible using other organizational structures. This is the principle that underpins the existence of organizations. However, organizations are social entities that use and preserve internal knowledge, skills, and capacities that are essential to the company's continued existence, expansion, and success. The idea emphasizes the significance of exceptional organizational coordination and the integration of employee learning.

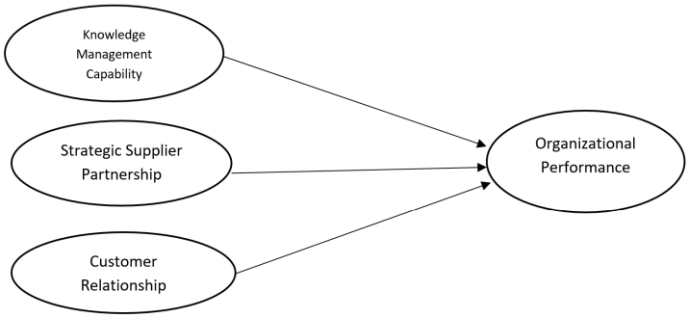

Figure 1: A research framework

3. Research Methodology

There are quantitative and qualitative research approaches. With the quantitative research technique, data gathering and analysis are conducted with the use of statistics (Rashid, 2016; Rashid & Amirah, 2017; Rashid et al., 2019). Quantitative data does not gather exhaustive information from participants but utilizes many of them to generalize the findings. The objective of data evaluation is to establish a relationship between variables and the acceptance or rejection of the study hypothesis. The quantitative technique gathers data objectively, enabling the data to be minimized (Agha et al., 2021; Haque et al., 2021; Khan et al., 2021; Khan et al., 2022). Explanatory research facilitates the discovery of comprehensive findings and the presentation of a thorough explanation of the research topic. The explanatory research assesses the variables representing people's behaviour and their actions and provides details regarding the conditions where they can be impacted (Alrazehi et al., 2021; Das et al., 2021; Rashid et al., 2021). Since the study is confirming a theory, the study applies explanatory research as the research type. There are two types of research designs: correlation research and causal study. In theory, the correlation research design assesses the association between the investigation variables. However, the cause-and-effect relationship is explored by the causal research design between the study's variables.

3.1 Sampling Design and Target Population

One of the contributing manufacturing industries of Pakistan is the textile and other Steel structures and automobile sector company's industry. While it has massive supply chain practices and mechanisms, it was somewhat less efficient in its processes. Henceforth, the study is undertaken its importance and taken as a research population to understand the position of supply chain management practices on the operational performance of manufacturing companies in Pakistan. However, the data was collected from the supply chain professionals of different firms in Karachi, Pakistan. Therefore, the population for this study was the Pakistani manufacturing sector which is expanded to over 2000 manufacturing firms as of 2015. (Khan et al., 2016). Respondents from the manufacturing firms belonged to managerial positions. They were chosen because managerial-level respondents would actually possess more knowledge and know-how of the firm's supply chain. One of the manufacturing industries that offer Pakistan is the textile industry while it has a big supply chain and practices but has found that it does not work well in its processes. Thus, the data was collected from the logistics specialists of Karachi, Pakistan's textile, Steel structure, and automobile sector companies.

3.2 Sampling Technique and Sample Size

For the objective of the present study, a sample of manufacturing businesses was selected. The author of this study decided to use a method that was not based on probability in order to obtain data from a substantial number of internet users for their study. Because of the large size of the population, the limited amount of available time, and the available resources, the author used the convenience sampling method (Uyanık et al., 2015). This method is regarded as an appropriate sample approach in such situations.

For the purpose of data collection, the study has used the "50+8*k* formula" (Tabachnick &

Fidell, 2007), where "*k"* denotes the total number of variables in the model. Thus, there were four variables in the model and a minimum of 82 respondents were required. Whereas, this study collected data from 200 respondents to facilitate the generalizability of research findings. Respondents from the manufacturing firms belonged to managerial positions. They were chosen because managerial-level respondents would possess more knowledge and know-how of the firm's supply chain.

3.3 Data Collection

For a collection of data purpose, the study used an interactive questionnaire to collect data from sample people using a five-point Likert questionnaire. The use of variables is presented in the table above; the primary data sources were intended for data collection according to preliminary responses from the different manufacturing industry specialists in Karachi, Pakistan.

In regards to data analysis, the study has employed KMO and Bartlett's Test from reliability analysis and multiple linear regression analysis. The goal of linear regression analysis is to test a hypothesis between two or more independent variables and one dependent variable. Herein, these assumptions were met in the model and therefore, multiple regression analysis has been used for primary data analysis for inferential statistics.

4. Data Analysis

Two hundred fifty questionnaires were distributed to individuals working in manufacturing companies in Karachi, Pakistan. A total of 200 responses were collected, which is an 80.6% response rate. The descriptive statistics were carried out to check the univariate normality of the data. It contains mean, standard deviation, skewness and kurtosis. The acceptable range of skewness and kurtosis is +2.5 (Awang, 2015). The consolidated outcomes for descriptive statistics are presented in given Table 1:

Table 1: Descriptive statistics

Construct	Mean	Std. Dev.	Skewness	Kurtosis
Knowledge management capability	3.56	0.71	-.543	.688
Customer relationship	3.59	0.60	-.470	.916
Organizational performance	3.52	0.77	-.924	.982

Source: SPSS output

According to results presented in given above table, the maximum skewness value (sk=0.924) is for construct Organizational performance (OP) (Mean = 3.52, S.D=0.77) while the minimum skewness value (sk= 0.470) is for construct Customer relationship (CR) (Mean=3.59, S.D=0.60). On the other hand, the maximum value of kurtosis (k=0.982) is for construct Organizational performance (OP) (Mean = 3.52, S.D=0.77) while the smallest value of kurtosis (k=0.448) is for construct Strategic supplier partnership (SSP) (Mean = 3.34, S.D=0.71). Since these outcomes indicate that the skewness and kurtosis value for all constructs are not greater than +2.5, the univariate normality was established.

Reliability analysis was ascertained to eliminate the data-related error and examine the internal consistency of data. The acceptable value of reliability is at least 0.70 or greater (Hult et al., 2018; Hashmi & Mohd, 2020; Hashmi et al., 2020a, b). The given above shows that the maximum reliability value (Alpha=0.765) is for construct Organizational performance (OP) (Mean = 3.52, S.D=0.77) whereas the minimum value of reliability (Alpha = 0.701) is for construct Knowledge management capability (KMC) (Mean = 3.56, S.D=0.754). Therefore, all reliability values are no less than 0.70, so all adapted constructs are reliable for this study. Table 2 illustrates the summarized results for reliability analysis.

Table 2: Reliability analysis

Construct	Standardized Cronbach's Alpha s	Mean	Standard Deviation
Knowledge management capability	.701	3.56	0.71
Customer relationship	.713	3.59	0.60
Organizational performance	.765	3.52	0.77

Source: SPSS output

The correlation analysis was applied to check the inter-construct relationship's strength, highlighting the construct's uniqueness and multicollinearity issue. The acceptable value of correlation should be in the range of +0.30 to +0.90 (O'Brien & Sharkey Scott, 2012). The summarized calculated outcomes for correlation analysis are presented in given below Table 4:

Table 3 Bivariate correlation

Construct	T_SSP	T_KMC	T_CR	T_OP
Strategic supplier partnership	1			
Knowledge management capability	.573**	1		
Customer relationship	.452**	.542**	1	
Organizational performance	.304**	.494**	.402**	1

*Source: SPSS output; ** Correlation is significant at the 0.01 level (2-tailed).*

The calculated results presented in given above table indicate that the strongest association (r=0.573) is among Knowledge management capability (KMC) (Mean = 3.56, S.D=0.754) and Strategic supplier partnership (SSP) (Mean = 3.34, S.D=0.71). On the other hand the weakest association (r=0.304) is among organizational performance (OP) (Mean = 3.52, S.D=0.77) and Strategic supplier partnership (SSP) (Mean = 3.34, S.D=0.71). These results show that all correlation values are in the acceptable range, so it was assumed that all constructs measure distinct concepts.

4.1 Hypothesis Testing

The hypotheses *H1, H2, and H3* were tested by simple regression analysis. The results for hypothesis *H1* suggested that the predictor "strategic supplier partnership" predicted 8.8% of the variance in "organizational performance". While, for hypothesis *H2,* the predictor "knowledge management capability" predicted 24.4% of the variance in "organizational performance". Besides, for hypothesis *H3,* the predictor "customer relationship" predicted a 15.7% of the variance in "organizational performance".

The ANOVA results illustrated a significant value of 0.000 < 0.05, indicating that "strategic supplier partnership", "knowledge management capability", and "customer relationship" have a statistically significant relationship with "organizational performance". Moreover, the beta coefficients presented a significant value (> 0.05) which indicates that "strategic supplier partnership" has a significant influence on "organizational performance". Moreover, the beta value for *H1* is 0.304, which illustrates that if the "strategic supplier partnership" increases by a single unit, then the "organizational performance" will be significantly enhanced by 0.304 units. Thus, hypothesis *H1* was supported. However, the beta value for *H2* is 0.494 which illustrates that if the "knowledge management capability" increases by a single unit, then the "organizational performance" will be significantly enhanced by 0.494 units. Thus, hypothesis *H3* was supported. Lastly, the beta value for *H3* is 0.402, which illustrates that if the "customer relationship" increases by a single unit, then the "organizational performance" will be significantly enhanced by 0.402 units. Hence, hypothesis *H3* was supported.

5. Summary and Conclusion

This particular research aimed to investigate the impact of supply chain management on the performance of manufacturing firms in Karachi, Pakistan. The study was mainly supported by the existing research studies such as Resource-based view theory, Knowledge-based theory & goal-setting theory. The research framework of this study was applied to the manufacturing firms of Karachi. The target population of the research are the individuals working in managerial positions in the supply chain department. A population sample size was calculated using the 50 + 8k formula (Tabachnick & Fidell, 2007), wherein denotes the total number of variables in the model. Thus, on the basis of no. of a variables sample size of a minimum of 100 respondents is calculated to collect the data from respondents. A structured questionnaire was developed that was circulated among respondents. After receiving data from respondents, data were analyzed by using SPSS software. After analyzing the data,

it was found that all proposed hypothesis was retained. The following literature showed that all the variables were significantly associated with and positively influenced firm performance. However, according to the data analysis, it was confirmed that Strategic supplier partnerships & Customer relationships have a positive and significant influence on firm performance.

All the proposed hypotheses were tested, and it was found that two hypotheses were retained. The recent results and outcomes of the research study are further discussed in given below section. Hypothesis one, "Strategic supplier partnership has significant & positive impact on organizational performance." was rejected and had insignificant results. Hypothesis two, "Knowledge management capability has significant & positive impact on organizational performance." was retained and answered to research question two: Does the Knowledge management capability impact organizational performance? Was it match with existing literature? For instance, knowledge management capabilities, have an impact on organizational learning and supply chain management practices. To continuously develop new knowledge, transfer, integrate, share, and apply knowledge-related resources and activities across functional boundaries (Chuang, 2004). This would enable the firm to achieve a long-term competitive advantage while increasing organizational effectiveness (Tseng & Lee, 2014). Hypothesis three, "Customer relationship has significant & positive impact on organizational performance", was retained and answer to research question three: Does Customer relationship impact organizational performance? Was it match with existing literature? According to Yihdego et al. (2019), positive CR helps managers boost their business and develop a firm basis on which to improve organizational performance.

6. Research Implications, Limitations, and Recommendations

On the basis of empirical findings implication for managers of the firm is that it provides the direction of increasing and enhancing the performance of an organization through adopting SCM practice and making strategies on the basis of these factors to enhance its performance. It would also provide rationale points for implementing or initiating a reliable supply chain practice in manufacturing firms by providing specific supply chain practices and their discrete impact on firm performance. There are certain limitations which were not considered in this study, and these limitations are required to be considered in future research to fill these gaps. This study also brings some recommendations to minimize the limitations of the research. Thus few limitations and recommendations are as follows; First, this study focus on the influence of supply chain management practices on organization performance. Future studies suggest extending this research model by adding quality dimensions for supply chain practices and examining their influence on organization performance. Moreover, this study is limited to the direct impact of SCM practices on organization performance, so in future studies, it can also be extended by delving into the indirect impact of SCM practices by adding a mediator or moderator (i.e. competitive advantage as a moderator). Furthermore, this model can be more refined if the structural equation model (SEM) is done on it; through the SEM model, it can be found whether SCM practice effects are more or more substantial and which factors require more concentration. Second, this study only considers the manufacturing sector in Karachi. To make this model more generalized, it should have applied to other industries and cities in the country. Due to the limitation of the time framework, the data was collected from a smaller sample size. The sample size should also increase in future studies to get more accuracy in results. Third, this research finds a direct relationship between SCM practices and organizational performance, but the level of quality performance of an organization was not considered. So it is suggested that researchers incorporate the quality performance dimension besides the organization performance and also determine a comparative analysis of both performance dimensions.

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