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From Integration to Impact: Supply Chain Capabilities as a Key to Operational Success in Kotri's SMEs

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Abstract

This research aims to explore the relationship between the different forms of supply chain integration (supplier, internal, and customer) and operational performance where supply chain capabilities could act as mediating variables in SMEs in Kotri, Pakistan. The survey collected 126 responses from the employees working in the SME sector of Kotri. This study utilized PLS-SEM for data analysis, both the PLS and SEM components will be briefly explained before presenting the results. The findings also reveal that supply chain integration leads to improved operations performance. Moreover, the results indicate that supply chain capabilities partially buffer the relationship between supply chain integration and operational performance. Lastly, this research proves that proper integration of SCM generates greater operational success in SMEs.

Keywords: Supply chain integration, Supply chain capabilities, Operational performance, SME sector, Kotri Sindh, Pakistan

Introduction

When it comes to definitions of Supply chain capabilities, it can be described as a potent tool or solution that enables companies to increase organizational performance and to maintain strategic competitive advantage within the constantly changing environment of the modern world. The growing globalization of supply chains together with advancing technology has put a lot of pressure for changed integrated supply chain tactics (Zhao et al., 2021). Medical evidence shows that closely integrated supply chains considerably improve operational performance, especially among SMEs for which resources and competitive pressures are more pressing (Kim & Chai, 2020; Awan & Memon, 2022). Following the case of SMEs, knowledge of how supply chain integration can be maximized results in enhancement of customer satisfaction, organization effectiveness and organizational performance (Mushtaq & Bhanot, 2024).

Research conducted in the last decade has placed the need for integration into the context of collaborative relationships with suppliers. For instance, Zhao and Huo (2022) established that

direct information-sharing and communication improve performance outcomes in the supply chain. This also points to the need for SMEs and other firms to develop strong relations and proximity with external players to harness resource complementary that helps in improving organizational performance (Kim et al., 2021). Also, the linkage between supply chain processes has a positive impact on organisational commitment and employee engagement that are important factors for enablers in SMEs (Haq et al., 2024; Alfalla-Luque et al., 2021).

Continued innovations in technology, especially in industry have also influenced the changes in the status of supply chain integration. The use of the Internet of Things and big data enable SMEs to access optimisation strategies, enhance their decision-making, and be proactive in responding to market needs (Kamble et al., 2021; Ganbold et al., 2021). Through these technologies, SMEs can enhance their supply chain management systems and enjoy a better position relative to their competitors within the market (Thakkar & Vohra, 2023). Third, the increased IS connectivity enables constant exchange of information and messages that can generate real-time supply chain information, which in turn helps connect the partners more efficiently (Li & Zhao, 2022).

Supply chain resilience has therefore been deemed another crucial aspect of managerial strategies especially to firms especially the SME s in an unpredictable environment. Currently, much attention has been directed towards creating supply chain systems that would be sustainable in view of disruptive events for example an economic recessions or a scarcity of stocks (Bowers et al., 2022; Razmi & Javanmard, 2022). Because most SMEs are more sensitive to external influences, they need to establish sound integration initiatives to help them become more efficient at responding to fluctuations in market conditions (Arif et al., 2023). Resilience as operational continuity loss prevention has been identified as crucial for protecting business and making it sustainable.

In addition to that, this study has found that the relationship between supply chain integration and operational performance depends on factors including firm size and industry type. Some of the factors affecting integration by smaller firms are special and hence the need for approaches that can meet their special context (Mukhtar & Ali, 2021; Hafeez et al., 2022). For the purpose of this paper, these contextual factors are significant since they dictate the changes and improvements that SMEs of the supply chain industry should make to improve the performance of the operation. Such empirical findings bear the gist of the general belief that supply chain integration offers considerable performance improvement across different industry segments arguing that to optimise operational performance SMEs should look at implementing industry-specific integration strategies (Pujari & Dhanaraj, 2021; Ali et al., 2023).

Objectives

1. To assess the impact of supplier integration on the operational performance of SMEs in Kotri.
2. To evaluate the effect of internal integration on the operational performance of SMEs in Kotri.
3. To investigate the influence of customer integration on the operational performance of SMEs in Kotri.
4. To analyze the mediating role of supply chain capabilities in the relationship between supply chain integration and operational performance.

Problem Statement

However, it has been seen that even after understanding the fact that SC integration is a necessity for the growth of any business, majority of SMEs in Kotri are lacking proper integration. This paper seeks to fill the known gaps regarding the impact of various dimensions of supply chain integration on the operation performance as well as the function of supply chain capabilities in this chain of the relationship.

Literature Review

Supply chain management has changed considerably in recent the last few years, meaning that the concept of integration is even more crucial in improving the operational effectiveness of an organisation's supply chains. Current research review success and supply chain integration demonstrate a direct association and relationship to organizational performance. According to Kim and Chai (2020), supplier integration is also important for enhancing the operational performance and its significance increases in the manufacturing industry sector as does that of customer integration. These conclusions show the significance of managing relationships with both suppliers and customers to achieve the production of complementary effects that would help to improve the business outcomes (Kim & Chai, 2020; Chae, 2021). In addition, Zhao et al. (2021) investigated the impacts of supply chain integration and based on their study, they pointed out that information sharing facilitate improved communication and thus improved operation (Zhao et al., 2021). In the same vein, Awan and Memon (2022) found that the extent of strategic partnering of supply chain partners determines performance returns, agreeing with integration (Awan & Memon, 2022). Further, Li and Zhao, (2022) also established that there exists a partial mediation process of process innovation between supply chain integration and operational performance hence companies should not only concentrate on integration but also on innovation process that supports effective supply chain functioning (Li & Zhao, 2022).

It is important to recognize certain features of supply chain, especially in emergent countries. Agha et al., 2021 synthesised the existing literature on customer loyalty and identified that communication influence customer loyalty in the telecommunications industry (Agha et al., 2021). This indicates that there is a need to enhance compatibility of systems of supply chain for good customers relations hence the performance of the organizations (Rahman & Bano, 2021). In addition, Baloch & Rashid (2022) presented a systematic literature review in the effect of supply chain networks and optimization on the development of developing economy. Based on the literature, it was revealed that complexities can be reduced and the operational performance can be improved with the help of effective supply chain integration to gain competitive benefits (Baloch & Rashid, 2022; Wu et al., 2021). Mushtaq and Bhanot (2024) continued the line of thought by examining how supply chain strategies can be integrated to enhance the economic performance of emerging market firms, or the significance of the effective supply chain integration (Mushtaq & Bhanot, 2024). The literature focusing on the application of supply chain integration (SCI) in improving the overall operational performance has attracted much interest in recent works and particularly in relation to SMEs. Zhao et al., (2021) points out that integration ensures proper coordination of the chain so that all partners can work together as they strive to cut through the competitive markets. Recent research works state that SCI can result in better operational performances, cost efficiencies, and greater customer satisfaction for SMEs, making it as a strategic tool, in the current business setting (Kim & Chai, 2020; Mushtaq & Bhanot, 2024). Within

this regard, supply chain management is considered as an even more crucial factor for SMEs due to such factors as; dearth of resources and stand vertically to counter large firms. Zhao and Huo (2022) stress that effective communication between SMEs and their supply and customers is highly beneficial for both because SMEs can use information from those sources to evaluate risks and opportunities. This concurred with Kim et al. (2021), who propose that to reap operational synergies that are essential for the functionality of an SME, collaborative relationships must be established. Integration and operational performance in SMEs are equally another critical factor that is influences through organizational commitment of the employees to produce engagement and other related performance results as cited by Haq et al. 2024; Alfalla-Luque et al. 2021.

Technological developments are central to supply chain integration, especially for small and medium enterprises. The application of technologies under Industry 4.0, including IoT and big data analytics, puts within the grasp of SMEs tools required to drive the optimisation of their supply chains (Kamble et al., 2021; Ganbold et al., 2021). That it becomes possible to leverage these technologies provides SMEs with the operational agility and acuity required to effectively respond to evolving customer needs (Thakkar & Vohra, 2023). Also, greater integration of information systems by various supply chain partners enhances the real-time sharing of information and consequently enhances the efficiency of communication flows (Li & Zhao, 2022).

This study has also revealed that supply chain responsiveness is another parameter in relation to SMEs especially when there is disruption. According to Bowers et al. (2022), mPLS supply chains can enable organisations to manage risks, including economic fluctuation or supply chain disruption. The impacts of this necessity in SMEs stem from their structural weakness; thus, integration strategies expected of them must strengthen the organization's capacity to overcome emerging issues (Razmi & Javanmard, 2022). According to Arif et al. (2023), it is crucial to incorporate resilience-centered activities to protect business's functioning and improve its long-term stability for SMEs.

In addition, H3 positted that supply chain integration have positively affected operation performance but is moderated by firm size and industry context. Mukhtar and Ali (2021) observed that there are challenges particular to small firms that need distinct integration approach, and Hafeez et al. (2022) emphasise the importance of recognising these scenarios to improve operations. Hence, the study affirms the premise that the benefits accrued in the integration of supply chain vary by industry and that best suited practices should be employed in an industry basis by the SMEs in efforts to optimise operative efficiency (Pujari & Dhanaraj, 2021; Ali et al., 2023).

Hypothesis

H1: Supplier integration positively impacts operational performance in SMEs in Kotri.
H2: Internal integration positively impacts operational performance in SMEs in Kotri.
H3: Customer integration positively impacts operational performance in SMEs in Kotri.
H4abc: Supply chain capabilities mediate the relationship between supply chain integration ((supplier, internal, and customer) and operational performance.

Conceptual Model

The provided figure demonstrates how the dimensions of new supply chain integration are connected with supply chain capabilities and operational performance. It forms the basis for empirical research, which is undertaken in this study.

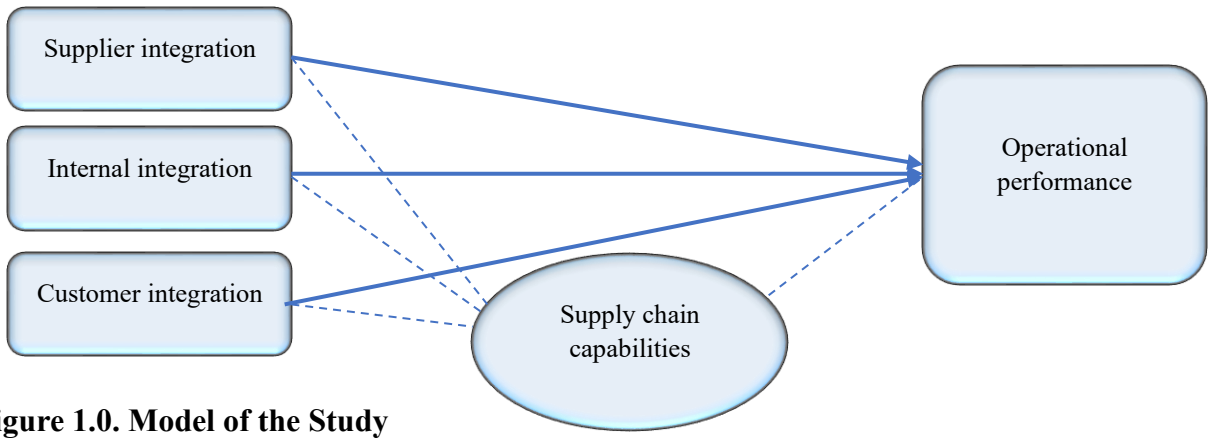

Figure 1.0. Model of the Study

Source: The Conceptual Model of the study has been adopted from the study of Khan M.S. (2024) to test same model in the specific areas of this research.

Research Methodology

The methodological approach used in this study to examine supplier integration, customer integration, internal integration, supply chain capabilities, and operational performance among the selected SMEs in Kotri, Sindh, Pakistan is quantitative. It incorporates the strength of empirical methods and quantitative data which helps set relationships between variables and anticipate future consequences, which is especially valuable in the fluid landscape of the SMEs (Agha et al., 2021; Khan et al., 2022). The research method is descriptive, which allows researchers to fix their eyes on many variables simultaneously and see how they relate, for example, cross-sectionally (Rashid & Rasheed, 2024; Hashmi et al., 2021b). Convenience sampling technique, which is a type of non-probability sampling was used in this study to obtain samples from 126 employees across different SMEs in Kotri in order to increase the generalisability of the sample demographic data so that the results can be more meaningful for data analysis (Brus & Gruijter, 2003; Das et al., 2021).

Data collection was conducted using a self-administered survey questionnaire, divided into two sections: basic demographic questions and items that relate to the measure of the study variables. The questionnaire adopted a 7- point Likert scale to capture twenty-four supplier integration, customer integration, internal integration, supply chain capabilities and operational performance items. Smart PLS was used for conducting the statistical analysis as this software performs PLS-SEM technique that helped in employing the research data for assessing the potential hypothesis of the prediction models and is also useful in case of non-normal data and small sample size data (Hair et al., 2014; Rashid et al., 2022a). This methodological framework allowed the researchers to assess the applicants' analysis of the operational performance of SMEs in Kotri with data gathered.

Data Analysis and Results

Factor Loadings, and Internal consistency reliability analyses

Table 1 presents the results of factor analysis and internal consistency reliability analyses for five constructs: Strategic: relationship with supplier as a key supplier, internal relationship as key internal link, relationship with customer as strategic customer, supply chain capabilities, operational performance. The data of factor loadings for each item and the composite reliability (CR) values for each construct is presented. Consequently, related to the recommendations of Hair et al. (2022) and Kibria et al. (2021) the value 0.7 or more can be considered valuable as a measure of factor loadings and internal consistency reliability. For all the constructs, the composite reliability (CR) is above this level of threshold, implying high internal consistency. More specifically, the obtained CR values are as follows: for SI: 0.711; for II: 0.821; for CI: 0.714; for SCC: 0.772; and for OP: 0.781 These results indicate that each item fits its respective construct well, and therefore the constructs themselves are also reliable.

Table 1. Factor analysis and Internal consistency reliability analyses.

Sr No.	Item Code	SI	II	CI	SCC	OP
Composite Reliability (CR)		0.711	0.821	0.714	0.772	0.781
1	SI1	0.813				
2	SI2	0.755				
3	SI3	0.801				
4	SI4	0.704				
5	II1		0.723			
6	II2		0.812			
7	II3		0.811			
8	II4		0.791			
9	CI2			0.702		
10	CI3			0.743		
11	CI4			0.728		
12	SCC1				0.826	
13	SCC2				0.739	
14	SCC3				0.817	
15	SCC4				0.773	
16	OP1					0.802
17	OP3					0.732
18	OP4					0.793

Individual item constructs also get acceptable, significant factor loadings for the constructs and items thus conforming to the criterion of greater than 0.7. The item-construct loadings for SI is between 0.704 and 0.813, thus it could be concluded that all the items (SI1 to SI4) have got this construct loadings and are therefore significant. Similarly, the ex- construct has acceptable estimates of its alpha ranging from 0.723 to 0.812 for the items formed under this construct including, II 1 to II 4. For CI, Cronbach's alpha values of the items (CI2 to CI4) are estimated to be between 0.702 and 0.743; for SCC, Cronbach's alpha coefficients of the items (SCC1 to SCC4) are estimated to be between 0.739 and 0.826. The OP construct also has high factor loading from the items among the studied variables as range from 0.732 to 0.802 for the following items; OP1, OP3 and OP4. These results validate the internal consistency of each construct and the overall model and with SCC as the mediator of all relationships and OP as the dependent variable.

AVE and Discriminate Validity Analysis

The findings for AVE and DV are indicated in Table 2 for Supplier Integrations (SI), Internal Integrations (II), Customer Integrations (CI), Supply Chain Capabilities (SCC), and Operational Performance (OP). All the AVE values are greater than 0.5, the benchmark of Hair et al. (2022) and Kibria et al. (2021) suggesting fairly good convergence between the constructs and the measures used in this study. More particularly, the calculated AVE values amount to 0.700 for SI, 0.617 for II, 0.703 for CI and 0.659 for SCC, as well as amounting to 0.696 for OP showing that all the presumed constructs possess good levels of convergent validity.

Table 2. AVE and Discriminate Validity (DV) Analysis

Latent Variables	SI	II	CI	SCC	OP
AVE	**0.700**	**0.617**	**0.703**	**0.659**	**0.696**
SI	**0.836**	0.431	0.342	0.451	0.209
II	0.413	**0.785**	0.397	0.432	0.385
CI	0.491	0.591	**0.838**	0.356	0.321
SCC	0.463	0.433	0.520	**0.811**	0.439
OP	0.433	0.552	0.481	0.435	**0.834**

Discriminant validity is verified by comparing the square root of AVE values (diagonal elements of the table) with the correlation values between the constructs (off-diagonal elements of the table). For adequate discriminant validity, the values of the diagonal elements, which are the average variance extracted (AVE), should be higher than the off diagonal elements for each construct. The diagonal elements in this table square root of the AVE values of 0.836 for SI, 0.785 for II, 0.838 for CI, 0.811 for SCC and 0.834 for OP. It should be noted that the results are all above the off-

diagonal correlations, suggesting good discriminant validity. For example, the AVE for SI is greater than its correlations with other constructs, namely, II (0.431), CI (0.342), SCC (0.451), and OP (0.209) = 0.836. This pattern was observed with the current result showing that all the chosen constructs are indeed different and measures different aspect of the overall model.

Model Test (F-Square and R-Square analysis)

Table 3 shows the R-Square (R^2) and F-Square (f^2) values for the constructs of the model to measure the criterion validity and the size of the impact. The R^2 values for Supply Chain Capabilities (SCC) and Operational Performance (OP) are 0.572 and 0.606 respectively which explain the proportion of endogenous latent variables variation that is accounted for by the model. Chin (1998) classified such R^2 values as substantial (0.67), moderate (0.33), or weak (0.19). Cohen (1988) defined R^2 of 0.26 as Substantial, an R^2 of 0.13 as Moderate and an R^2 of 0.02 as Weak. Hair et al. (2011) and Hair et al. (2013) offer one more reference point at which an R^2 coefficient of 0.75, 0.50, and 0.25 are considered significant, moderate, and low, respectively. In this context the, $R^2 = 0.572$ for SCC is moderate and $R^2 = 0.606$ for OP is moderate again demonstrate the fact that the total amount of variance for these constructs is to some extent explained by the model.

Table 3. Model Test (F-Square and R-Square analysis)

Latent Variables	*R Square*	*F Square*
SI	--	0.461
II	--	0.381
CI	--	0.470
SCC*	0.572	0.471
OP	0.606	--

The F-Square (f^2) estimate reflect the degree of influence of the predictor construct on the endogenous latent variables. The significance of f^2 is determined by Cohen (1988) that established the breakdown of small $f^2 \geq 0.02$, medium $f^2 \geq 0.15$ and large $f^2 \geq 0.35$. The f^2 values for the predictor constructs are as follows: 0.461 for SI, 0.381 for II, and 0.470 for CI, it can be said that the effect size is high. For SCC, the value of $f^2 = 0.471$ which also denotes a large effect size for the current study. The findings of this research indicate that Supplier Integrations (SI), Internal Integrations (II), and Customer Integrations (CI) have large and meaningful impacts on Supply Chain Capabilities (SCC) to support the applicability of these constructs in the model. Taken all together, the high f^2 values indicate meaningful proportions of variance in the endogenous latent variables predicted by the constructs, emphasizing their importance in defining various aspects of supply chain capability and operations performance.

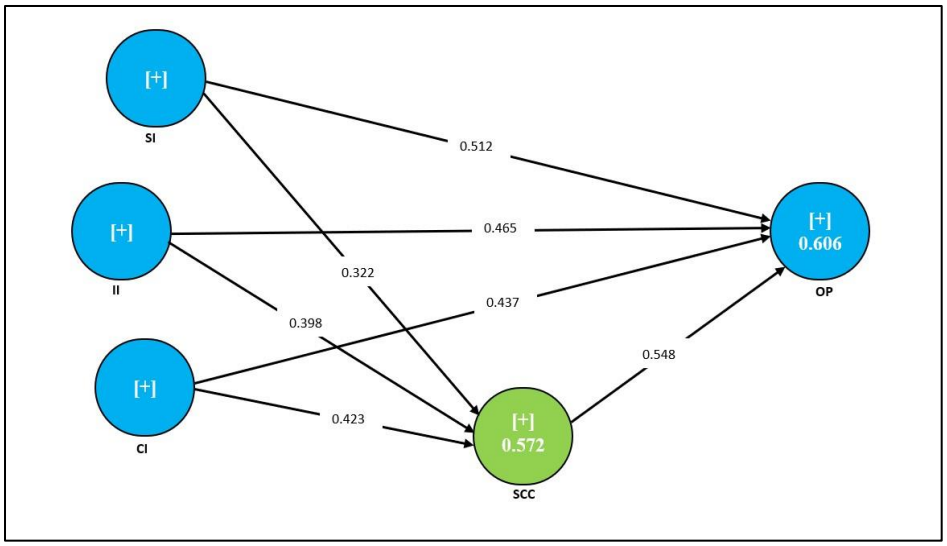

Figure 2. Measurement Model of the Study

Path Coefficient Analysis (Hypotheses testing)

Path coefficient analysis was conducted for hypothesis testing, and Table 4 provides the measurement of constructs' relationships in the proposed model. The table provides the results that are sample path coefficient (O), sample mean (M), standard deviation (STDEV), T-statistics (|O/STDEV|) and the corresponding P values for all the hypothesized relationships. The number beside the arrows represents the path coefficients, which reflect the relative strength and direction of the relationship between two variables while T-statistics and P values are used in order to judge the statistical significance of the relationships. Whenever comparing a variable to a constant, the usual standard of measurement is that the P value should be less than 0.05 for the relationship to be considered significant.

Table 4. Path Coefficient Analysis (Hypotheses testing)

Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
SI -> OP	0.512	0.213	0.034	15.05	0.003
II -> OP	0.465	0.143	0.041	11.34	0.004
CI -> OP	0.437	0.181	0.034	12.85	0.000
SI -> SCC-> OP	0.322	0.223	0.044	7.31	0.004
II -> SCC-> OP	0.398	0.217	0.036	11.05	0.001
CI -> SCC-> OP	0.423	0.130	0.042	10.07	0.003
SCC-> OP	0.548	0.224	0.037	14.81	0.001

Thus, Supplier Integrations (SI), Internal Integrations (II) and Customer Integrations (CI) have strong and positive impacts on Operational Performance (OP) with path coefficients equal to 0.512, 0.465 and 0.437 respectively. Likewise, the noted T-statistic differs significantly (15.05, 11.34, 12.85) and the P values recorded are insignificant (0.003, 0.004, 0.000). This goes further

to show that OP is positively and significantly affected by SI, II and CI. Also, the moderating role of Supply Chain Capabilities (SCC) is also supported as hypothesized. The indicators of the indirect relationships of SI, II and CI on OP through SCC pathways are significant and positive and are equal to 0.322, 0.398 and 0.423respectively and have high T-statistics of 7.31, 11.05 and 10.07respectively with low P values of 0.004; 0.001 and 0.003respectively. This has shown that SCC moderate the interactions of SI, II, CI, and OP to a very big extent.

More importantly, there is an obvious and positive students' direct effect of SCC on OP where its path coefficient is 0.548, T-statistic=14.81 and its P value is 0.001. This suggests that the self-compassion of SCC positively forecast the level of OP of the people under study. All the results subtotally support the hypothesized model and so, it was tested that Supplier Integrations, Internal Integrations, and Customer Integrations positively and significantly affect Operational Performance and also positively and significantly influence Supply Chain Capabilities which in turn influence Operational Performance. Such results provide more evidence about the importance of linking different supply chain activities to attain better performance in operations.

Discussion

This study justifies the importance of linking all supply chain components and examines the effects of linkages on operations performance. The research identified that Supplier Integration (SI), Internal Integration (II), and Customer Integration (CI) have significant direct relationships with Operational Performance (OP) and an indirect relationship through the availability of Supply Chain Capabilities (SCC). These findings agree with the findings of earlier literature emphasizing the role of Supply Chain Integration as crucial for improving manufacturing performance and innovative competencies in fast-developing economies (Adebanjo et al., 2018). The path coefficients are considerable and the p-values are small enough to imply that tight integration of suppliers, operational processes and customers enhances operating performances, which shares molecular evidence with Flynn, Huo and Zhao (2010) in that supply chain integration is crucial to performance improvements.

The mediation analysis also increases the focus on the central place SCC in reflecting the positive impact of SI, II and CI upon operational success. The large coefficient for the path from SCC to OP for first-order dominant over existing theories and significant T-statistic underscores the importance of first-order capability development in the context of competitive advantage (Allred et al., 2011). This mediating effect corresponds with the belief that dynamic supply chain capabilities can reduce risks and improve resistance to vulnerability in order to improve operational performance (Brusset & Teller, 2017). Combined with the first-order effects, these indirect effects of SI, II, and CI on SCC also demonstrate that the elements of the supply chain are not isolated and that workflows affect performance collectively. Such findings are supported by Ataseven and Nair (2017) who showed that integrated supply chain business practices where positive drivers of performance outcomes.

Altogether, the findings of this research highlight the significance of supply chain integration together with the creation of different supply chain capabilities in improving certain operational performance. Through formally testing these relationships using statistical analysis, the study enhances the understanding of how integrated supply chain can enhance performance outcomes, in line with prior work in the field (Chavez et al., 2015; Danese & Bortolotti, 2014). These ideas

will benefit organizations mostly those settled in developing economy, in their bid to compete effectively and optimally manage their supply chain functions (Baloch & Rashid, 2022).

Implications of the Study

As a result, the following are the important implications of the study for practitioners and policy makers in supply chain management. To the practitioners, the study findings underscore the necessity and need for developing and strengthening links between supplier, internal and customer processes aimed at improving operational performance. Managers should build capabilities for supply chain flexibility to serve a relay between integration initiatives and operations. Such strategies might include sophisticated real time information exchange tools, skills development initiatives for the firm's workforce, or strategic partnering with important supply chain stakeholders. In this way, the goal is to enhance the responsiveness of organizational structures and layouts as well as protect them from disruptions, which in turn creates a foundation of a competitive edge in the market.

From a policy maker's perspective, the research points to the role that policy and infrastructure plays in enabling supply chain integration and capability. Governments and industry bodies should identify strategies that promote the interaction of participants within the supply chain. Possible activities could include promoting collaboration between organizations through the provision of incentives for joint ventures, offering development monies for technological transfer, and designing avenues to distribute information on best practice across the industry. In addition, the educational institutions should be encouraged to integrate the supply chain management and integration issues in to their curriculum in order to produce future leaders with sufficient knowledge. Given these dynamics, the appropriate environment for supply chain excellence will have positive impacts on the growth and competitiveness of the national and regional economy.

Limitations and future Directions

The following limitations were noted. Nonetheless, there are some limitations to this study that should be highlighted as with any research work there are some limitations that should be noted. First, because the study focuses only on a single geographic area and a particular industry, the results of the study cannot be generalized easily. The study could be further extended to different industries and across multiple regions to ensure generalizability of the result. Second, the study used cross-sectional data, this method shows the relationships between the variables at a certain time. It would be useful for future works to focus on Longitudinal research designs to understand the changes of supply chain integration and its effect on the operations' performance, over time.

Future research should also investigate other variables that can affect the patterns that were analyzed in the study. For example, from the analysis, it is evident that whether or not technological application like artificial intelligence as well as block chain boosts supply chain integration and its capabilities remains an interesting area of study. Moreover, it is suggested that, while analyzing the effects of culture on the management of supply chain relationships, it might be possible to explore the effects of culture on the implementation of integration strategies in global organizations in greater detail. Finally, qualitative research by conducting sample interviews with supply chain managers could extend the enumerative results which will offer more complexity focused on the measures and issues of supply chain integration.

Conclusion

In conclusion, this study reveals the positive relationship between supply chain integration and operational performance through supply chain capabilities. Since the extend of supplier integration, internal integration, and customer integration has been established alongside the establishment of adequate supply chain capabilities, the study holds implications for the improvement of organizational operational performance for organizations. The presented research implications call for increased attention and resources on ISCM strategies and capabilities among both the practicing professionals and policy makers, in order to foster sustainable competitive advantage and supply chain effectiveness.

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