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Title:	**Impact of Supply Chain Integration on Supply Chain Performance: Moderating Role of Supply Chain Flexibility**
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Impact of Supply Chain Integration on Supply Chain Performance: Moderating Role of Supply Chain Flexibility

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Abstract

Modern world is more uncertain than ever before. Organizations need to identify the capabilities needed to gain competitive advantage under these uncertain conditions. Supply chain integration is such a capability that may help a firm achieve competitive advantage under uncertain market conditions. The current study evaluated the multidimensional role of supply chain integration in supply chain performance. The moderating role of supply chain flexibility between different dimensions of supply chain integration and supply chain performance was also considered. Based on the data gathered from Pakistani manufacturing firms, structural equation modeling (SEM) was used to test the hypothesized model. The results showed that internal integration and supplier integration represented a positive impact on supply chain performance. However, the moderating role of supply chain flexibility was determined to be significant only in the case of customer integration – supply chain performance relationship.

Keywords: customer integration, internal integration, supplier integration, supply chain integration, supply chain flexibility, supply chain performance

Introduction

The modern business environment is more uncertain than ever before. Therefore, firms are required to introduce frequent changes in their product and service offerings in order to sustain their competitive advantage (Fianko et al., 2022). Within supply chain management (SCM), literature supply chain integration (SCI) is considered an essential capability to successfully maneuver during uncertain times. It helps to reduce the lead time and cost while increasing the visibility along with product availability (Abdelilah et al., 2021; Flynn et al., 2010; Kim & Schoenherr, 2018). SCI involves

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aligning the internal processes with the other members of the supply chain to minimize the total cost and optimize customer value (Sharma et al., 2022). Highly integrated firms within the supply chain gain a competitive advantage by being more reactive to the required changes in the environment (Abdelilah et al., 2021).

Literature has highlighted three different dimensions of SCI, that is, supplier integration (SI), internal integration (II), and customer integration (CI) (Cui et al., 2022). The current study evaluated the impact of these dimensions on the SCP. Li et al. (2022) suggested that SCI is one of the most researched areas in the SCM discipline. However, this has not diminished its importance and criticality for the organizations. They pointed out that in the present turbulent environment, its importance has increased tremendously. Furthermore, the mechanisms through which SCI impacts the supply chain performance (SCP) are still vague (Li et al., 2022). Previous studies established inconsistent results to determine the SCI impact on SCP (Huo et al., 2014; Khanuja & Jain, 2021). These studies established that only certain dimensions of SCI displayed a significant impact on the performance (Flynn et al., 2010; Huo et al., 2015). El Mokadem and Khalaf (2022) similarly highlighted that the previous studies did not provide clear evidence between SCI and SCP. Few studies also highlighted the negative results of SCI on SCP, as SCI may result in increased complexity and cost (Hassan & Abbasi, 2021). However, there is no irrefutable evidence that the positive effect of SCI offsets the adverse consequence of SCI on performance. These indifferent empirical results within the SCI literature deteriorated the generalizability between SCI and SCP (Khanuja & Jain, 2021). It has also been observed that in Asian regions, firms tend to focus on a vertical approach, that is, building their own capabilities (Mahadevan et al., 2022). This results in increased costs, making it difficult for a firm to improve its SCP (Caridi et al., 2010). Hence, there is a need to consider the capabilities that help in reducing the costs and adding value at the same time (Kamalahmadi et al., 2021).

Building on the SCI literature in the current study, it has been argued that SCI is the capability that allows supply chain partners to pool their resources, thus enabling supply chain members to benefit from the capabilities of their supply chain partners. It results in lower supply chain costs and improved SCP. SCI is a dynamic capability that helps firms gain early insights from customers, suppliers, and internal stakeholders

(Abdelilah et al., 2021). These early insights help firms to utilize the insights by modifying their processes and resources according to the changes required and help to gain a sustainable competitive advantage (Vanpoucke et al., 2014). Furthermore, the contingency role of supply chain flexibility (SCF) was evaluated in the relationship between SCI and SCP. It was argued that although, SCI helps to gain early information and visibility (Shukor et al., 2020), this would be more useful if the firm has the ability to change the processes and resources according to the changing environment (Srinivasan & Swink, 2018). SCF ensures swift utilization of the information and resources shared through internal and external integration and is thus, the source of competitive advantage (Dubey et al., 2019). SCF has been considered as a dynamic capability that helps firms with adaption ability to the changing environment, which further results to enhance the performance of a firm (Shukor et al., 2020). SCI (II, CI, SI). Moreover, it helps the firm to sense early information and the flexibility allows it to utilize this information. It adjusts the products, processes, and resources as per the requirement, resulting in improved performance (Khanuja & Jain, 2021).

The theoretical model of the current study was grounded in the dynamic capabilities view (DCV). Dynamic capabilities as discussed by Teece et al. (1997) are the capabilities that integrate, build, and reconfigure the internal and external resources, to gain a competitive advantage under uncertain situations. These capabilities help the firms with continuous improvement in their product offerings and processing as per changing demand of the customers, which results in the improvement of the performances of firms (Gutierrez-Gutierrez & Antony, 2019; Pusparini & Kusumastuti, 2019; Teece et al., 2016).

This study contributes to the body of knowledge in the following ways. Firstly, it addresses the uncertainty surrounding the SCI – SCP relationship. Secondly, it evaluates the role of SCI as a dynamic capability that helps to improve the performance by reducing cost, eliminating waste, and shortening the product life cycle (Abdelilah et al., 2021; Bentley et al., 2021; Khanuja & Jain, 2021). The current study justifies for the firms to develop closer ties with the supply chain partners as it leads to more responsiveness towards changing market needs (Li et al., 2022). Thirdly, most studies in the area of SCI considered it from the theoretical lens of the resource-based view (RBV) (Li et al., 2022). The RBV assumes a static

environment (Bhandari et al., 2022), while the modern environment is dynamic. The firms in these times need to develop capabilities that allow the dynamic restructuring of the internal and external resource base (Ali et al., 2022; Teece, 2007). Thus, SCI is considered as a dynamic capability that helps to gain competitive advantage in turbulent times (Eslami et al., 2021).

Literature Review

Supply Chain Integration (SCI)

SCI refers to the extent to which intra and inter-organizational collaboration exists between the supply chain partners to improve efficiency in the external and internal flows of product and information (Rizzi et al., 2022; Zhao et al., 2008). Integrated supply chain firms achieve resource efficiency through sharing of tangible and intangible resources with the supply chain partners (Lau et al., 2010). SCI constitutes the alignment of a firm's internal processes with its external partners in the supply chain to optimize costs and improves customer value with overall performance outcomes (Sharma et al., 2022). Therefore, the success of integration depends upon the ability of supply chain partners to build collaborations within the network in order to produce advantages that outperform the competitors (Ramos et al., 2021; Shou et al., 2018; Wiengarten et al., 2019). SCI is a multi-dimensional construct that consists of supplier integration (SI), customer integration (CI), and internal integration (II) (Cui et al., 2022). In the following sections, hypotheses has been developed on how different dimensions of SCI influence an organization's SCP.

Internal Integration (II) and Supply Chain Performance (SCP)

II involves collaboration and alignment of different functions within a firm to increase SCP (Cheng et al., 2016). It facilitates the environment of internal knowledge sharing between different departments that helps to share various expertise, resulting in new knowledge creation and sustainable competitive advantage (Li et al., 2022). II focuses to remove the hurdles among the departments by allowing information sharing and joint problem-solving (Khanuja & Jain, 2021). The cross-functional teams result in creating innovative processes (Zhang et al., 2020). II creates synchronization between functions that results in better dealing with external uncertainty. II helps to gather the information dispersed among different departments and then disseminates the information to the

individual for efficient and effective decision-making (Li et al., 2022). It is considered as an essential capability that ensures the internal process and information must be aligned before collaborating with the external members (Ramos et al., 2021). It helps to gain visibility within a firm that helps in resolving conflicts and improving efficiency through resource sharing (Bentley et al., 2021). II is normally perceived to have a positive impact; however, there may be cases when it may have negative consequences on the performance. The presence of more II may hinder the firm to seek external information (Kakhki et al., 2022). Therefore, II may also limit the firms' ability to sense the changes in the environment.

II as a dynamic capability is essential to improve the performance in an uncertain situation (Petroni, 1998). It facilitates the continuous sharing of information and knowledge between members and different departments. Moreover, it also helps to build trust and congruence between members in order to make efforts for enhancing the overall performance (Eikelenboom & de Jong, 2019). This collective effort allows reduction in redundant capabilities throughout the supply chain, resulting in better efficiencies. Moreover, II helps to discern the uncertainties and the potential opportunities available with building resilient processes in order to increase the firm performance while responding to those threats and opportunities (Ramos et al., 2021). The information sharing across the function helps to reduce the element of ambiguity and allows reconfiguring resources according to the changing environment (Foerstl et al., 2020).

The above discussion concluded that II as a dynamic capability helps to facilitate the information and knowledge flows within different functions of firms. This results in the reduction of conflicts and helps in joint working towards problem solving and grabbing the available opportunities efficiently and effectively, resulting in enhanced performance. Hence, the following hypothesis was put forwarded:

H1: Internal integration would have a positive impact on the supply chain performance.

Supplier Integration (SI) and Supply Chain Performance (SCP)

SI refers to the degree to which a firm collaborates with its suppliers for strategic decision-making, information, and resource sharing along with process alignment (Madzimure, 2020; Vanpoucke et al., 2014; Zhang et al., 2020). Extensive integration with suppliers helps to reduce cost and lead

time, which adds value by gaining an advantage over competitors (Ramos et al., 2021). The alignment between a firm and its suppliers leads to reduced variability and improved agility, resulting in improved performances (Wong et al., 2013). It also helps with early insights about the shortage of raw material, the quality of the product, or any other problem regarding the raw material. This allows the firms to respond to disruptions in a better way through combined planning and execution (Nguyen, 2022). Suppliers are crucial to improve SCP as their alliance with firms facilitates better planning regarding the capacity and product processes (Khanuja & Jain, 2021). SI also helps to improve the quality of a product, reducing lead time, and process improvement (Ramos et al., 2021). It is considered as a dynamic capability that helps firms with early sensing of threats and opportunities available in the supply market. Therefore, firms may modify their combined resources following the changing environment (Vanpoucke et al., 2014). Moreover, SI helps in the swift response to the changes in the market. It results in increasing visibility and understanding within supply chains, leading to better responsiveness (Li et al., 2022).

The above discussion concluded that integration with suppliers allows firms to gain early information regarding the changes in the supply market. This early information may be used to capitalize on the opportunities or respond to the threats by using the supply chain wide resources and competencies. It may also modify these resources as per the environmental changes. Hence, the following hypothesis has been proposed:

H2: Supplier integration would have a positive impact on supply chain performance.

Customer Integration (CI) and Supply Chain Performance (SCP)

CI refers to the level of coordination between the firm and its customers (Li et al., 2022). CI helps firms with a better understanding of customer needs, preferences, and expectations (Wu, 2013). Information sharing between firms and its customers allows it to add better value to its products and services (Fianko et al., 2022). It also enables the firm to stay abreast of the changes in demand (Cui et al., 2022). Better information and value creation for the customers leads to increased market share and competitive advantage (Dhaigude et al., 2021). CI helps the firms to discern the dynamic demand from customers and this visibility helps them reduce the redundancy by decreasing inventory holding and stock-out costs (Wu et al.,

2021). The information gained via CI is considered to be a special resource that helps a firm to gain competitive advantage through meaningful insights into the product. It also reduces the time required in product design and production planning (Ruzo-Sanmartín et al., 2022). Frequent changes in customer demand make it challenging for the firm to satisfy their customers (Shukor et al., 2020). Therefore, it is important for a firm to be in continuous contact with their customers and keep on adding value as per the customer requirements (Fianko et al., 2022).

CI acts as a dynamic capability to improve the performance under uncertain environment (Ramos et al., 2021). Integration with customers helps to sense the early changes in demand and to respondthose changes efficiently and effectively by modifying their processes along with making changes in their product offerings (Fianko et al., 2022). Integration with customers also helps to build lean processes by reducing wasteful activities that do not add any value (Abdelilah et al., 2021).

The above discussion concluded that CI helps firms to sense the early information regarding the changes in preferences and demands of the customers. This allows process modifications and products to better fulfill customer needs. It also results in improving the overall performance of the supply chain. Hence, the following hypothesis was presented:

H3: Customer integration would have a positive impact on supply chain performance.

The Moderating Role of Supply Chain Flexibility (SCF)

Integration within the supply chain improves performance. However, the mechanism and conditions under which the integration would contribute to add value has been less understood (Fianko et al., 2022). Supply chain flexibility (SCF) is considered an ability to transform the processes and resources following the changing environment (Pfeiffer et al., 2012). SCI is essential; however, it is not entirely useful unless the information gained through integration is used to create value (Jafari et al., 2022). The implementation of those insights needs flexibility within a supply chain (Srinivasan & Swink, 2018). Flexibility in the processes within the supply chains ensures swift and efficient utilization of the resources and information in order to respond to uncertain situations (Dubey et al., 2019). SCF helps to facilitate the internal and external integration throughout the supply chain (Tiwari et al., 2015). SCF, considered as a dynamic capability,

facilitates to sense threats and opportunitie and allows a response by reconfiguring the existing resources throughout the supply chain (Sandberg, 2021). It facilitates the firms with a transforming capability that would help to reconfigure the products and processes as per the shared information throughout the supply chain and results to enhance the performance (Khanuja & Jain, 2021). Jafari et al. (2022) considered SCF as a dynamic capability that helps firms to gain a competitive advantage by allowing internal and external changes.

Hence, the above discussion concluded that the presence of SCF would allow the firms to adapt to the required changes and strengthen the relationship between different dimensions of SCI and SCP.

H4: Supply chain flexibility moderates the relationship between internal integration and supply chain performance such that the relationship is stronger at higher levels of supply chain flexibility.

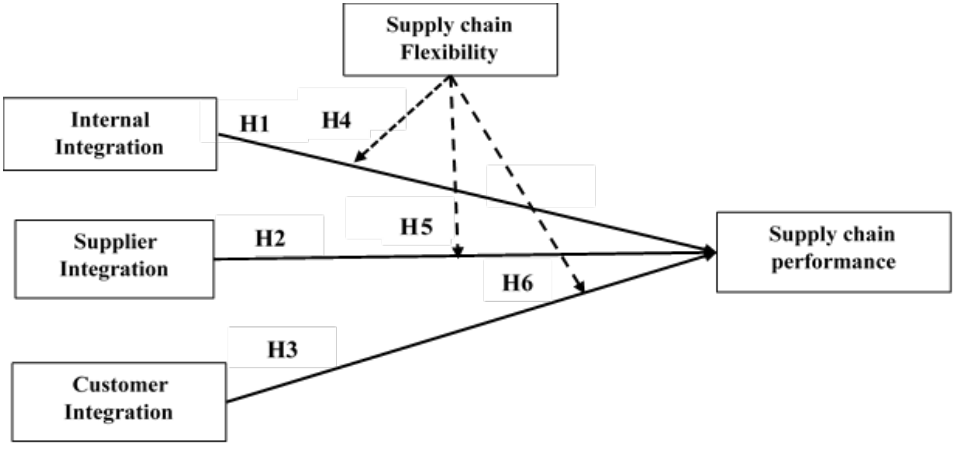
H5: Supply chain flexibility moderates the relationship between supplier integration and supply chain performance such that the relationship is stronger at higher levels of supply chain flexibility.

H6: Supply chain flexibility moderates the relationship between customer integration and supply chain performance such that the relationship is stronger at higher levels of supply chain flexibility.

The research model is shown in Figure 1.

Figure 1

Hypothesized Model



Method

Research Design

A post-positivist paradigm was adopted for the current study. This paradigm purports that rationality is bound to capture the reality (Scotland, 2012). A deductive approach was adopted for the current study as the hypothesis was tested (Reyes, 2004). As this study is based on quantitative research, therefore, a survey approach was opted, that was used extensively while testing the theory (Bowling & Ebrahim, 2005).

Sample and Data Collection

The manufacturing industries in Pakistan were surveyed to get meaningful insights, as most of the supply chain studies were conducted in manufacturing settings (Meng et al., 2011). The data was collected from different cities, such as Karachi, Lahore, and Faislabad, etc. It was difficult to make a sampling frame, as there was no comprehensive associated frame to identify manufacturing firms in Pakistan (Ahmad et al., 2022; Bulut et al., 2022). The data was collected from different industries, such as FMCG, chemical, and pharmaceutical, etc to increase the generalizability of the results. A sampling frame was developed using a private university linkage office, personal contacts, and the All Pakistan Textile Association (APTMA). The questionnaire was distributed to 500 respondents and 248 responses were received in total, resulting in a 49.6 % response rate. The early responses were being compared with the late responses in order to ensure that non-response bias is not an issue (Armstrong & Overton, 1977). The results of paired sample t-test showed $p > 0.05$ for the total number of employees and firm revenue, confirming that non-response bias is not an issue in the current study. In order to avoid common method bias, the anonymity of respondents was ensured by allowing them to submit the responses anonymously. Secondly, the Harman's one-factor test was performed to ensure that the common method bias was not an issue in this study (Harman, 1976). The results showed that the cumulative variance explained in a single factor was less than 50 percent. Therefore, it was concluded that common method bias was not an issue in this study.

Sample descriptive are mentioned in the following Table 1 and Table 2.

Table 1

Organizational Descriptives

	Frequency	Percentage (%)
Industry		
Textile	69	29.1
FMCG	51	21.5
Automobile	32	13.5
Chemical	33	13.9
Pharmaceutical	17	7.2
Other	35	14.8
Number of employees		
less than 100	79	33.3
100-500	76	32.1
more than 500	82	34.6
Revenue in (PKR)		
less than 10 million	47	19.8
10 million - 50 million	58	24.5
51 million - 100 million	43	18.1
101 million - 200 million	31	13.1
greater than 200 million	58	24.5
Organizational history		
less than 5 years	40	16.9
5 - 10 years	56	23.6
11 - 20 years	44	18.6
more than 20 years	97	40.9

Table 2

Respondents Descriptives

Designation	Frequency	Percent
Deputy manager	27	11.4
Senior manager	162	68.4
Director	8	3.4
Executive	15	6.3
Owner	25	10.5
Experience		
1-10 years	204	86.1
11-20 years	25	10.5
More than 20 years	8	2.9

Measures

The scales for the variables were adopted from well-established studies. The scale was adopted for II, SI, and CI from Wang and Zhang (2020). The items of II and CI were measured on a 7-point Likert scale 1 (strongly disagree) and 7 (strongly agree). The items of SI were measured on a 7-point Likert scale from 1 (not at all) to 7(at every available opportunity). The seven-item scale for supply chain performance was adopted by Huo et al. (2014). The items were measured on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Seven item scale for supply chain flexibility was adopted from Swafford et al. (2008). The items were measured on a 7-point Likert scale of 1 (minute) to 7 (considerable).

Results

Structural equation modeling (SEM) was used to test the hypothesis of the current study. SPSS AMOS was used to perform SEM. Firstly, he measurement model evaluation was performed followed by the structural equation modeling.

Table 3

Convergent and discriminant validity

	CR	AVE	MSV	1	2	3	4	5
1-Internal integration	0.90	0.70	0.51	**0.83**				
2-Customer integration	0.89	0.68	0.51	0.72***	**0.82**			
3-Supplier integration	0.96	0.86	0.23	0.46***	0.48***	**0.92**		
4-SC performance	0.98	0.87	0.19	0.37***	0.32***	0.44***	**0.93**	
5-SC flexibility	0.90	0.56	0.12	0.30***	0.30***	0.21**	0.34***	**0.74**

Note. * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$

* Bold values on diagonals are square roots of AVE.

SC performance = Supply chain performance, SC flexibility = Supply chain flexibility

Measurement Model Evaluation

In the measurement model, the confirmatory factor analysis (CFA) was performed which is used to test the convergent and discriminant validity of a model. Convergent validity is measured, based on the average variance

extracted (AVE). Table 3 shows the values of AVE for all constructs which are greater than 0.5. Therefore, convergent validity was not an issue in this research (Xiong et al., 2015). Discriminant validity requires that the AVE should be greater than the maximum shared variance (MSV) (Hair et al., 2010). Table 3 also shows that the AVEs are greater than the respective MSV values. Therefore, the discriminant validity was established. The composite reliability (CR) is used to check the reliability of a scale with a threshold value of 0.7 (Avkiran, 2018). Table 3 shows that the values of CR coefficients exceed this threshold for old constructs. Hence, the realiability was also established.

Structural Model Evaluation

After assessing the adequacy of the measurement model, the structural model was tested. The results of the hypothesized model are summarized in Table 4 and Figure 2. Model fit was adequate (CMIN/df = 1.856, $p > 0.05$, CFI =0.962, RMSEA = 0.060). The results for hypothesis 1 showed that the internal integration has a positive impact on the supply chain performance ($\beta = 0.141$, $p < 0.05$) (see table 4), resulting in the support of hypothesis 1. Furthermore, it was hypothesized that SI would positively impact the SCP, this hypothesis was also supported ($\beta = 0.221$, $p < 0.01$). Hypothesis 3 (H3) proposed that CI has a positive impact on SCP. This hypothesis was not supported ($\beta = -0.017$, $p > 0.05$). Furthermore, outcomes of the moderating hypotheses show that the hypotheses of the current study, regarding the moderating role of SCF between II (H4) and SI (H5) was not significant. However, support was established for this moderation between CI and SCP ($\beta = 0.135$, $p < 0.05$), in support of H6. Interaction plots for the moderation hypotheses are provided in Figures 3, 4, and 5.

Table 4

Direct and Moderating Effects Estimates

			Estimate	*S.E.*	*p*
SC_performance	<---	Internal integration	.141	.072	.049
SC_performance	<---	Customer integration	-.017	.068	.801
SC_performance	<---	Supplier integration	.221	.052	.000
SC_performance	<---	Supply chain flexibility	.175	.047	.000
SC_performance	<---	II x SCF	-.074	.067	.268

		Estimate	*S.E.*	*p*
SC_performance	<--- CI x SCF	.135	.067	.045
SC_performance	<--- SI x SCF	-.078	.047	.100

Figure 2

Hypothesized model

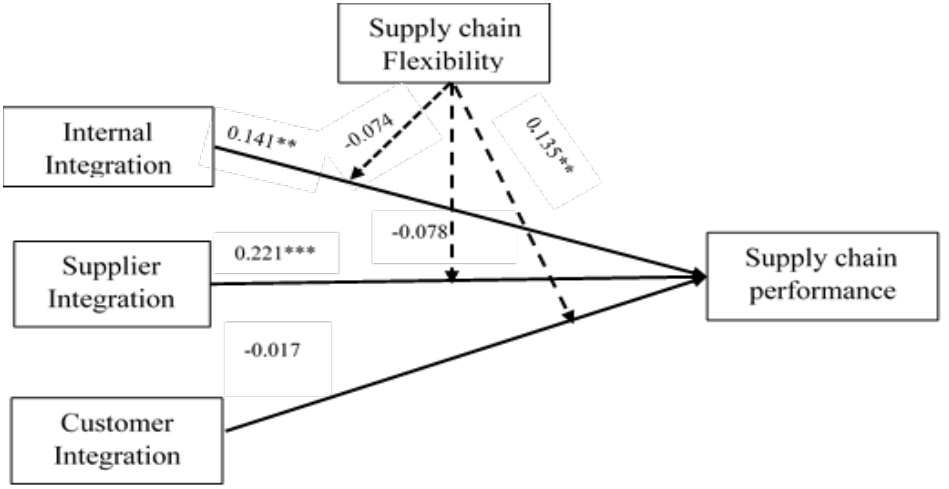


Figure 3

Moderation

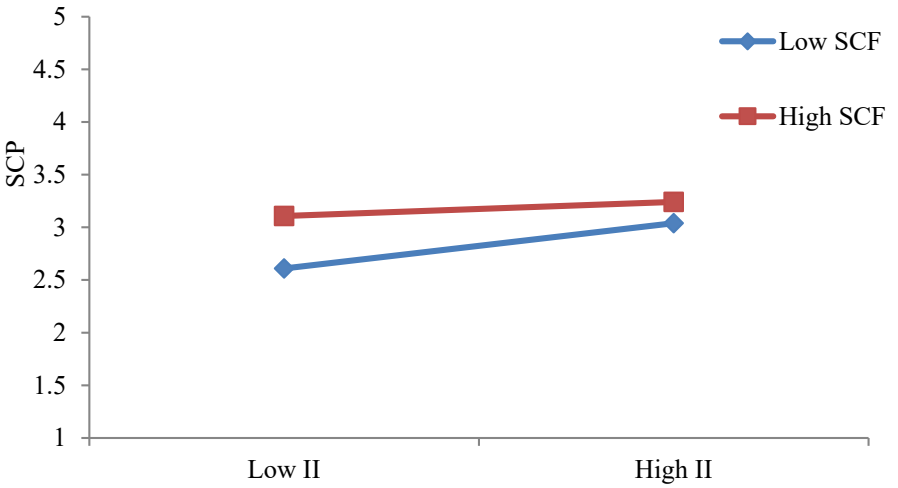


Figure 4
Modertation

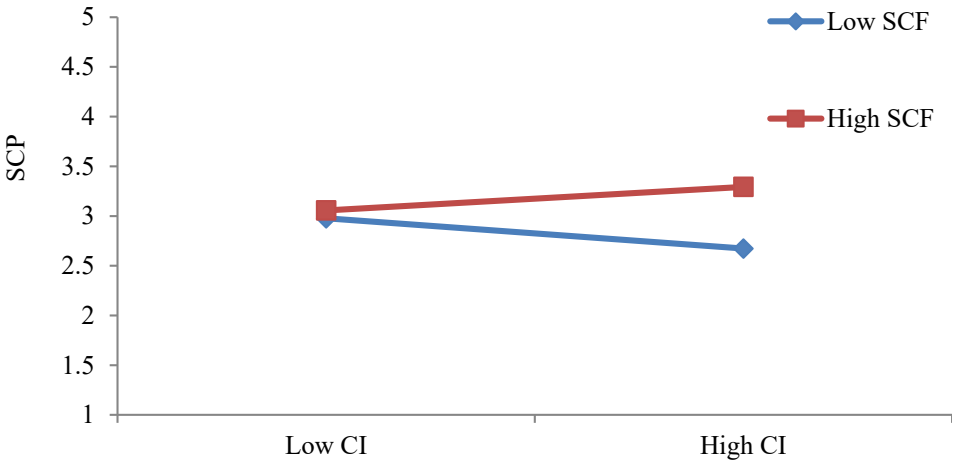
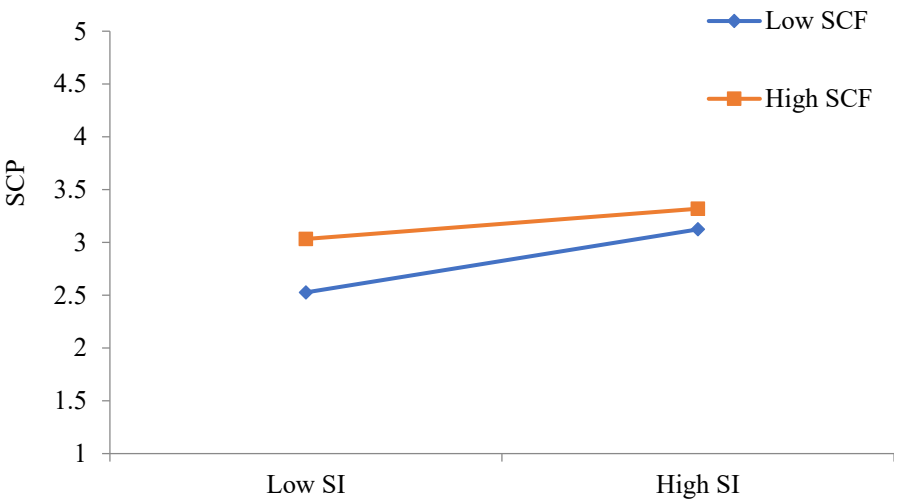


Figure 5
Moderation



Discussion

The current study was conducted to test the effect of SCI on SCP. The moderating role of SCF was also considered in the relationship between various dimensions of SCI and SCP. The results provided a general support for the model with a few exceptions. Support was found for the relationship between II and SI on SCP. The results aligned with studies, such as Sharma et al. (2022) and Dhaigude et al. (2021) who also determined similar results. The direct relationship between CI and SCP was not established. Although, it was acknowledged that different researchers discussed the positive role of CI to predict SCP (Dhaigude et al., 2021; Fianko et al., 2022; Li et al., 2022). Moreover, there are some studies, such as Piprani et al. (2020), Lau et al. (2010), and Danese and Romano (2013) who could not establish a direct relation between CI with SCP. One of the reasons for the non-support of hypothesis could be that when firms integrate with customers, they show reluctance towards making changes in the product (Lau et al., 2010). This limits the firm's ability to innovate and hurts them in the competitive environment. Secondly, most of the time firms integrate with their existing customers, losing an opportunity to gain new insights from new customers that may help to increas their performance (Medhi et al., 2019). Integration with customers may sometimes enormously increase investment, which may result in decreased profits and overall market share (Swink et al., 2007). This research provides future directions to discern the path through which CI could impact SCP.

The contingency role of SCF was also evaluated between SCI – SCP relationship. Interestingly, the findings suggested that the SCF only moderates the CI – SCP relationship significantly, a relationship which otherwise was determined insignificant. Possible reasons could be the costs associated with developing flexibility within the supply chain and its difficulty to determine the immediate effect of SCF (Sreedevi & Saranga, 2017). Secondly, the reason could be the nature of the products that the selected firms were dealing with. Flexibility would have a greater and more substantial role in the innovative product that requires frequent changes. However, functional products don't require much flexibility, they require efficiency as they have relatively certain demands (Fisher, 1997). Thirdly, the integration allows early sharing of information, which acknowledges additional time for a firm to arrange its resources accordingly (Dhaigude et al., 2021) and might not need flexibility in the processes.

Theoretical Implications

The current study theoretically contributes to the SCM literature by studying the multidimensional role of SCI (II, CI, SI) on SCP. Most previous researches studied SCI as a single dimension. This study contributes to the theoretical enrichment and validation (in the developing country conditions) of SCI construct by considering II, CI, and SI as dynamic capabilities. It helps the firms with early sensing of opportunities and threats through the sharing of information and resources leading to improved SCP. Dynamic capabilities are essential to gain a competitive advantage under rapidly changing markets (Teece et al., 1997). Firms, to have a sustainable competitive advantage under such markets, must build capabilities that are dynamic in nature (Eisenhardt & Martin, 2000). This study also enriches the SCF construct by considering its contingency role in the research model. The construct was developed by providing explanation about why it did not moderate relationship between two of the dimensions of SCI and SCP. The importance of functional and innovative products was highlighted while opting to invest in flexibility capability. SCF is more useful while dealing in innovative products rather than functional products (Fisher, 1997). The current study also contributes to the SCI literature by explaining the non-supporting role of CI towards SCP. It highlights that when the customers do not support the change and hinder a firm to make changes, this may negatively impact the firm performance. It was also suggested that SI is the most significant element of SCI that contributes the most to variance in SCP.

Practical Implications

The current study also provides insights for practice. It was suggested that for firms to improve supply chain performance, they need to focus on multiple aspects of SCI, such as internal integration, customer integration, and supplier integration. Special attention must be placed on SI, as the results showed that SI has the most significant impact on the SCP. Managers need to invest in building relationships with suppliers in order to facilitate the flow of information and resources which would eventually improve the overall performance. The managers should focus to build a culture of inter-functional collaboration within a firm. This would help to build internal consensus that may facilitate in achieving aligned goals. Secondly, firms should invest to make a mechanism that facilitates internal and external integration. This internal and external integration helps to get novel insights

which enables in building lean processes, facilitating waste reduction leading to better efficiencies. The current study also indicated that it is more appropriate for firms to develop flexibility and capability while operating innovative products as the dividents on the investment are much larger that way.

Limitations and Future Research Directions

The current study was limited due to various issues. It was conducted in the manufacturing industry, therefore, future researchers could replicate the study for the service sector and increase the generalizability. Furthermore, the study was conducted on the direct relation with SCP. Future research needs to investigate the (mediating) paths through which the SCI influenes SCP. A cross-sectional research design was used. Although, the measures were taken to mitigate the common method bias, such as applying Harman's one-factor test. Future researchers must collect time series data to further mitigate the chances of common method bias. Furthermore, the researchers need to study the presence of different types of flexibility in order to determine supply chain performance.

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