Does the stakeholder's relationship affect supply chain resilience and organizational performance? Empirical evidence from the supply chain community of Pakistan

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Abstract

Purpose – The aim of this paper is to investigate the role of the stakeholder's relationship with supply chain resilience (SCR) and organizational performance (OP) using the lens of stakeholder theory in the manufacturing and service industry. Investigating the supply chain community in Pakistan, this paper explores the relationship between SCR, OP and the stakeholder's relationship (including customers and suppliers).

Design/methodology/approach – A partial least square (PLS) – structural equation modeling (SEM) technique using SmartPLS 3.3.3 was used to test the hypotheses. Data were collected through a survey (questionnaire) completed by 202 supply chain representatives. All respondents were supply chain professionals working in different organizations in Pakistan.

Findings – The findings of the study revealed that supplier relationship (SR) and customer relationship (CR) have a positive and significant impact on SCR and a positive and significant relationship between SCR and OP. A positive and significant relationship between customer relationship and OP was also noted. The mediating role of SCR is also found positive and significant.

Practical implications – The outcomes of the study will help managers to strengthen SCR through relationship management. The study is also helpful to increase OP through stakeholder management.

Originality/value – This study empirically tests an inclusive model with a PLS-SEM technique where SCR plays a mediating role in the mechanism, which is crucial since the supplier and customer (stakeholder) relationship has been never tested to gauge the OP by positioning SCR as a mediator while using the lens of stakeholder theory.

Keywords Supply chain resilience, Supplier relationship, Customer relationship, Organizational performance, Stakeholder relationship

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1. Introduction

As supply chain (SC) operations are expanding, organizations are facing problems and unanticipated events. The variety of disruptions faced by supply chains includes delayed deliveries, inventory shortages, quality issues, communication problems, machine failures, natural disasters such as floods and earthquakes and man-made disasters such as terrorism, etc., all of which are examples of the turbulence that can affect the supply chain (Chapman *et al.*, 2002; Machalaba and Kim, 2002; Mitroff and Alpaslan, 2003). As organizations are growing and rapidly expanding, as well as having more flexible operational units and advanced technologies, they are experiencing far more risk factors than before (Scholten *et al.*, 2014). There is a need to find different strategies to minimize the negative impact of uncertainties. The supply chain of a firm is related to hundreds of other entities and networks and, therefore, they have more exposure to risk factors. Since the SC involves multiple stakeholders and multiple other firms, the idea that there is a comprehensive list of potential dangers is fallacious (Wieland and Durach, 2021). There are events that cause more harm in the supply chain, which remain overlooked because they were either not included in the list of risks in the initial stage or were initiated by the network firms (Akkermans and Van Wassenhove, 2018).

Hence, this is the gap where the concept of supply chain resilience (SCR) emerged. Gao *et al.* (2016) suggested that resilience can play a remedial role in such situations. SCR has been described in many different ways, as different researchers/authors have differing views on the word "resilience", which is multidimensional and multidisciplinary (Tukamuhabwa *et al.*, 2015). One of the widely accepted definitions of SCR is the capability of a supply chain to return to its original state after being disturbed within a defined timeframe (Brandon-Jones *et al.*, 2014). However, due to its multidimensional and multidisciplinary approach, some of the major characteristics of resilience include the ability, the adaptability, the preparation, the reaction, the recuperation, the time, the original shape and the better shape (Tukamuhabwa *et al.*, 2015).

SCR has already started gaining the interest of research scholars and professionals (Belhadi *et al.*, 2021). There has been a need for enhanced supply chains to deal with all kinds of disruptions and risks (Jacobsen, 2020). While all stakeholders have a pivotal role in enhancing supply chain management and building a resilient supply chain, there has been little empirical evidence available on suppliers' and customers' relationships, in particular with SCR (Mubarik *et al.*, 2022) and organizational performance (OP). Unfortunately, the relationship of different stakeholders and SCR with OP has received scant attention to date. One study conducted by Aslam *et al.* (2020) focuses particularly on both supply chain ambidexterity and agility; whereas Asamoah *et al.* (2020) conclude that firms' external and internal networks can be helpful in building organizational SCR and recommend further research in other geographical contexts. The interplay between suppliers'/customers' relationship and SCR remains mostly unexplored, especially in the context of emerging markets. Since global supply chains are interconnected, supply chain practices are important for global business, not just within one country. Moreover, there is relative scarcity of empirical research in the area of SCR (Ali *et al.*, 2017). Pettit *et al.* (2019) also suggest integrating the outside developments into SCR. Therefore, further investigation is needed to understand the relationships among stakeholders (particularly suppliers and customers), and thus a resilient supply chain and OP is required.

As such, the objective of this study is to explore and understand the impact of stakeholders' (suppliers and customers) relationships on SCR and OP. The study aims to contribute to the literature on SCR in a Pakistani context by focusing on both the manufacturing and services sectors in Pakistan. Keeping in mind the identified gap, the following research issues will be addressed by this study:

RQ1. What are the effects of suppliers' relationships on SCR and OP?

RQ2. What are the effects of customers' relationships on SCR and OP?

RQ3. What is the effect of having a resilient supply chain on OP?

Building on the stakeholder theory, this study aims to bridge the literature gap and provide empirical evidence on the association among suppliers' relationships, customers' relationships and SCR. The present study explores the role of SCR as a mediator between the stakeholder relationship and OP. Moreover, it also provides evidence as to how these three factors are affecting OP. The results shall help supply chain professionals to develop SCR strategies and practices leading to improved OP.

The rest of the paper is organized as follows. In Section 2, a theoretical background to suppliers' and customers' relationships, SCR and OP is provided along with the development of hypotheses. Section 3 proposes the methodology. Section 4 provides an overview of the analysis. Section 5 presents an overview of the results obtained. The paper concludes with Section 6, presenting the discussion, conclusions and future research directions along with the limitations and theoretical implications.

2. Theoretical background and hypotheses development

The section provides an overview of the existing literature on stakeholder theory and its application. It is supported by an overview of supplier relationship (SR), customer relationship (CR), SCR and OP. This review has led to the identification of different proposed hypotheses.

2.1 Theoretical background

The framework for this study is based on stakeholder theory. The term "stakeholder" has various definitions and, therefore, receives both positive and negative connotations from different scholars and researchers (Phillips *et al.*, 2003). Stakeholders include not only business owners but also customers, employees, investors and vendors/suppliers (Clarkson, 1995). Having different definitions and a profusion of different attributes, the stakeholder theory has resulted in multi-contextual applications and theorists have realized it is a problematic area (Miles, 2017). Freeman (1984) and Donaldson and Preston (1995) suggest that stakeholder theory explains the relationship and connection between the businesses and groups that have stakes in a business. This theory suggests that managers must take into consideration all the stakeholders who are affected by or can affect the business (Freeman, 1994; Phillips *et al.*, 2003). It is businesses' responsibility to understand these relationships and create a greater value for the overall benefit of stakeholders (Freeman, 1994; Freeman and McVea, 2001). Stakeholder theory is considered to be a framework or a set of ideas that can give birth to several other theories and, therefore, it is often termed as a genre for management theory (Parmar *et al.*, 2010). The rationale to use this theory is its supply chain perspectives. The theory stresses a supply chain's collaboration between stakeholders who have a mutual interest and desire to obtain win–win outcomes over time (Hörisch *et al.*, 2014; Freeman *et al.*, 2004). For example, customers want the firm to deliver products/services on time, in good quality and at reasonable costs, while the firm needs profit and loyalty. The firm thus needs to integrate customers into its chain, namely, customer integration.

Stakeholders can create pressure for businesses to take certain decisions, ultimately affecting the OP (Phillips *et al.*, 2003). Rajesh (2021) also recommends that organizations need to understand their stakeholders' choices and make decisions, keeping in view the sustainability and firms' resilience to their supply chain. In this study, we focus on suppliers and customers and how they affect the OP and resilience of supply chains, i.e. the fundamental concepts of

stakeholder theory. Various scholars (e.g. Mubarik *et al.*, 2022; Zhang *et al.*, 2018) have demonstrated that learning about a firm's suppliers and customers can enhance an organization's SCR capabilities. Considering the importance of these two major stakeholders in supply chain management, this study focuses on the interlinkages of both suppliers' and customers' relationships with SCR.

2.2 Supply chain resilience

Every supply chain activity, including customer requirements, manufacturing, distribution and global reach, has inherent disruptions and risk that can cause a halt in supply chain operations (Ponomarov and Holcomb, 2009). Wieland and Durach (2021) provide the definition of SCR as follows: "Supply chain resilience is the capacity of a supply chain to persist, adapt, or transform in the face of change". Disruptions are unplanned and unanticipated events (Kleindorfer and Saad, 2005), which can be actual or potential risks to the flow of goods, information or services (Craighead *et al.*, 2007), exposing firms to operational and financial losses (Stauffer, 2003). Supply chains today are facing increased chances of risk occurrence and higher competition from industry (Cantor *et al.*, 2014). Thus, it would be conceivable to state that the ever increasing competitive environment and the uniqueness of challenges being faced by organizations has raised several challenges and disruptions in their supply chain, which can be termed as inevitable events (Skipper and Hanna, 2009). Therefore, a holistic approach is required that can cope with the change in order to bring organizations back from an unstable to a stable state (Wieland and Wallenburg, 2013). Building organizational capabilities to deal with such disruptions (Pettit *et al.*, 2019; Scholten and Schilder, 2015) is of utmost importance for practitioners. SCR is the ability of organizations to mitigate the risk of these disruptions in order to continue their normal operations. It is still debatable whether or not SCR has an influence on financial success, despite all of the studies that have been undertaken on the topic. Researchers contend that the implementation of SC resilience serves as a buffer for the maintenance of unnecessary capacity, which casts doubt on the relationship; for instance, engaging multiple supply sources raises the logistics cost and having back-ups leads to increased capital consumption and occupation (e.g. Chunsheng *et al.*, 2020; Ghaderi *et al.*, 2018).

From an organization's perspective, resilience has been defined in many ways. Some researchers argue that resilience is the ability of the organization to continue its operations and functions in a desired manner despite having challenges and binding situations (Bunderson and Sutcliffe, 2002; Edmondson, 1999; Weick and Quinn, 1999); others define it as the organizational capability to mitigate the risk and recover from disruptive events (Sutcliffe and Vogus, 2003). Organizations with higher flexibility are characterized as being more successful in managing risk and unexpected events when compared with their counterparts that have lesser flexibility (Fredericks, 2005; Goldsby and Stank, 2000; Swafford *et al.*, 2006).

2.3 Organizational performance

An ample quantity of literature is available related to OP that performs an important role in academia and industry as a dependent variable (Khalil *et al.*, 2019). OP is described as the result of collective efforts in an organization or how well it is achieving its organizational goals (Carmeli and Tishler, 2004; Gunasekaran *et al.*, 2017). The literature recognizes multiple dimensions of OP such as market share financial outcomes (Li *et al.*, 2006). Market share is the total sales volume percentage within the total sales of the market in a said product/commodity. Every organization strives for maximum market share because the maximum number of customers will lead to maximum revenue and if market share is increasing, then it means customers prefer your product to others' products (Forrester *et al.*, 2010). One of the core objectives of every organization is to achieve financial goals. The literature provides several financial goals, such as return on

investment, return on assets and sales growth (Whitten *et al.*, 2012). Previous studies have been conducted to identify supply chain or lean factors that are or are not affecting OP (Kumar *et al.*, 2020; Nimeh *et al.*, 2018; Kaliani Sundram *et al.*, 2016).

2.4 Supplier relationship

Supplier relationship (SR) is an approach to evaluating and managing the vendors that supply goods or materials to an organization. Organizations need to focus on the supplier relationship to maintain a healthy and successful relationship with suppliers to sustain its functioning in difficult times. The SR is a significant pillar of stakeholder management and the researcher identified that it is listed as one of the most significant practices of supply chain management (Zahraee, 2016). Studies have been conducted on the importance of supplier and buyer relationships in the supply chain (e.g. Frazzon *et al.*, 2017; Nimeh *et al.*, 2018; Teller *et al.*, 2016). Researchers have demonstrated the direct impact of SR on the lead time and inventory levels of the whole supply chain. The optimum levels of inventory and lead time are key components to reduce cost and improve services (Gandhi *et al.*, 2017). Moreover, Forslund (2014) proved the direct effect of SR on overall supply chain/logistics performance; however, the quality of buyer–supplier relationships still matters greatly. It is the collaboration between buyers and suppliers that gains competitive advantage in the market through collective efforts (Lii and Kuo, 2016). This relationship helps to deal with uncertain demand and changes in the market due to the dynamic environment (Amoako-Gyampah *et al.*, 2019). The commitment within a relationship is developed when both parties have competencies/skills, willingness and coercive power (Chae *et al.*, 2017). These relationships may sometimes not succeed due to a lack of fairness in relationships and psychological effects in transactions (Blessley *et al.*, 2018). Early supplier involvement and supplier development reduce the effects of the risk, and operational level collaborations with suppliers are a means to share supply chain risks (Jüttner and Maklan, 2011). Shukor *et al.* (2021) and Kalyar *et al.* (2020) find supplier integration as a key enabler for organizational flexibility and overall supply chain performance, which encourages further investigation. Similarly, Silva *et al.* (2021) reveal supplier (backward vertical integration) as an important mitigation strategy to ameliorate the effects of supply chain risks. Therefore, the following hypotheses are proposed:

H1. Supplier relationship has a significantly positive relationship with SCR.

H2. Supplier relationship has a significant positive impact on OP.

2.5 Customer relationship

Customer relationship (CR) is an approach used by organizations to engage with their customers and enhance their customers' experiences. This includes all the interaction with customers, which can be pre-purchase or post–purchase. Customers' demands, queries, complaints and concerns play a vital role for a long-term relationship between organizations and customers (Li *et al.*, 2006). Studies have proved that good quality CRs help to retain customers despite unfavorable conditions (Chavez *et al.*, 2015; Nimeh *et al.*, 2018). In the twenty-first century, customers are more concerned about customization, prompt support and personalized services. Close coordination with customers can also help to predict the right demand in different seasons (Wahab *et al.*, 2013). The "customer-driven demand" approach has helped to reduce cost and increase customer satisfaction (Zeppetella *et al.*, 2017). The CR needs effort beyond just the transactions; for example: after-sales support, guidance or customer education that leads to developing a competitive edge (Alipour and Hallaj Mohammadi, 2011). The literature has proved that good quality relationships create a significant impact on a new product launch (Kou *et al.*, 2015). Despite any sector or industry, the significance of the CR has been proved. However, those organizations working in more

than one sector need to pay more attention to customers, such as the typical manufacturing sector. The supply chain team works closely with customers in the airline industry to provide the best services (Al Shurideh *et al.*, 2019). These services demand more time and concentration on individual customers (Radnor and Johnston, 2013). For sustainable CRs, technology and resources play a vital role and directly affect OP (Keramati *et al.*, 2010; Tracey *et al.*, 2005). SCR also places emphasis on better CRs. Ahmed *et al.* (2020) have discovered the critical role of customers to increase OP. Moreover, Liu and Lee (2018) have found that SCR can be improved by involving customers, which encourages examining the influence of CRs on SCR and OP. Therefore, the following hypotheses are proposed:

H3. Customer relationship is positively related to SCR.

H4. Customer relationship has a significant positive impact on OP.

2.6 Direct and mediating effect

Studies also prove that the result of OP could be varied after adding any mediating or moderating variables (Shanker *et al.*, 2017). Moreover, Asamoah *et al.* (2020) and Liu and Lee (2018) have unearthed the significant mediating role of SCR between networks and performance. Thus, the literature encourages further examination of SCR. Therefore, the following hypotheses are proposed (see Figure 1):

H5. SCR has a significantly positive impact on OP.

H6. Supplier relationship has a significantly positive relationship with OP via mediation of SCR.

H7. Customer relationship has a significantly positive impact on OP via mediation of SCR.

3. Research methodology

3.1 Data collection

The target population of the study was supply chain professionals, i.e. those dealing with the decision making related to supply chain management, since they are responsible for maintaining the relationship with stakeholders and creating a resilient supply chain. Professionals working in supply chains provided the data for this study during the period from Aug-2019 to Nov-2019. In the pilot study, face-to-face discussions about the questionnaire took place with two senior academicians and two supply chain managers. Their feedback and suggestions were amalgamated to enhance the readability and understanding of the final questionnaire. This subjective appraisal assisted us to further

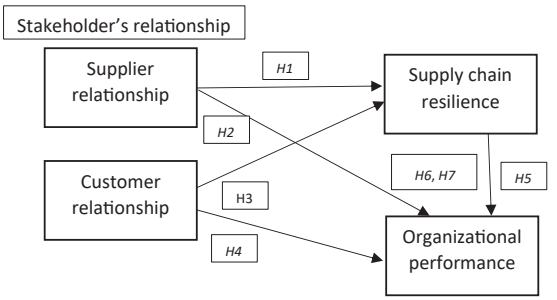

Figure 1.
Proposed theoretical framework

develop the overview instrument to guarantee lucidity and content legitimacy and to decrease the probability of misinterpretations. We used a common measurement scale (five-point Likert scale) and, in addition, Harman's single factor test was performed to test the problems of social desirability. Haman's single factor test is one of the most widely used techniques that have been used by researchers to curb the common method bias (CMB) issue (Podsakoff *et al.*, 2003). We performed unrotated maximum likelihood and principal component analysis using the 23 items loading on one latent factor. Average variance, as explained by the single factor, was only 34% (far from the recommended cut-off of 50%). It indicates that CMB is not a problem in this study.

The researcher chose a multi-industry in Pakistan and using a questionnaire to collect the data, 750 supply chain professionals from different Pakistani organizations were approached. 50% of the sample was approached via LinkedIn and direct emails and the remaining 50% was approached through snowball sampling; in this case, a hard copy of the questionnaire was posted to organizations. The list of organizations was obtained from the Chamber of Commerce website. Keeping in mind the varying cultures in different cities in Pakistan, this approach was found justifiable. Supply chain managers were identified on LinkedIn (restricted to Pakistan only) and invited via direct message to take part in the survey process. Direct emails were sent to managers that showed their official email address on their LinkedIn profile and managers who had asked for the questionnaire via their official email address. The search on LinkedIn was not restricted to the first connection.

3.2 Measurement

Data were collected using a five-point Likert scale ranging from the lowest "1 = Strongly disagree" to the highest "5 = Strongly agree". The SR construct had five items adapted from Lee *et al.* (2007), Elwan Ibrahim and Ogunyemi (2012) and Seo *et al.* (2014). The CR construct included five items adapted from Kaliani Sundram *et al.* (2016) and Seo *et al.* (2014). The SCR construct included six items adapted from the studies of Ali *et al.* (2017), Liu and Lee (2018) and Mandal (2017). The current study adopted the latest scale of SCR, which is slightly modified from the scale of SCR used in Golgeci and Ponomarov (2013). The OP construct included seven items as adapted from Li *et al.* (2006). The questionnaire can be seen in Appendix 1.

4. Analysis

4.1 Demographic profile

A total of 216 responses were received, which was around 29% of the approached sample. 14 responses were incomplete so the total useable sample size for this study was $n = 202$. Around 61% responses were received from the manufacturing sector, 28% from services and 11% were working in both sectors. Data were received from 22 industries/sectors, such as textiles, food, FMCG, automotive, pharmaceutical, etc.

4.2 Test of reliability and validity

Partial least square (PLS) – Structural equation modeling (SEM) – was applied using SmartPLS 3.3.3. PLS-SEM is deemed as variance-based SEM because it uses the total variance to estimate the model. Also, it is a widely used method to analyze the complex models in the field of supply chain management (Kaufmann and Gaeckler, 2015). The present study employed PLS-SEM because it does not make distributional assumptions and performs a high degree of statistical power with small samples of data, unlike covariance-based SEM (CB-SEM). As this study explains and predicts (EP) the existing theory, PLS was found to be the best fit for the purpose of the research. PLS offers a lot of flexibility in the interaction between theory and data, therefore, it is found useful for SCR research. All the assumption and robustness checks were applied. Prior

to structural model evaluation, assessment of the measurement model was performed. Because the constructs were reflective, evaluating each construct requires considering its indicator loadings in addition to the construct's internal consistency reliability as well as its convergent and discriminant validity. The statistical qualities of the following three parameters were used: (1) Average variance extracted (AVE) > 0.5); (2) Composite reliability (CR) > 0.7); (3) Loading > 0.7; (4) Heterotrait–Monotrait ratio (HTMT) < 0.85 and (5) Number of items per construct > 3 (Fornell and Larcker, 1981; Chin, 1998; Peng and Lai, 2012; Hair *et al.*, 2014; Henseler *et al.*, 2015; Shah and Goldstein, 2006). CR is a measure of internal consistency reliability. AVE is a measure of convergent validity where a construct explains the variance of its measures. HTMT ratio is a measure of discriminant validity. The results are shown in Tables 1 and 2. To meet the loading criteria, one item from SR and one item from CR were dropped. The dropped items had loading values less than 0.5 (Hair *et al.*, 2010). However, two items with loadings between 0.7 and 0.5 were retained to ensure convergent validity of the SR construct (Hair *et al.*, 2017). All items contained the higher value of loadings, which indicate that the items are well correlated with the constructs (see Figure 2). The mean scores of the manifest variables

Table 1.
Reliability and validity of the constructs

Construct	Detail of items	Factor loadings	Composite reliability	Average variance extracted (AVE)
Supplier relationship			0.81	0.52
	SR-1	0.661		
	SR-3	0.597		
	SR-4	0.787		
	SR-5	0.817		
Customer relationship			0.897	0.685
	CR-1	0.757		
	CR-2	0.833		
	CR-3	0.867		
	CR-4	0.848		
Supply chain resilience			0.875	0.539
	SCR-1	0.757		
	SCR-2	0.753		
	SCR-3	0.718		
	SCR-4	0.767		
	SCR-5	0.705		
	SCR-6	0.701		
Organizational performance			0.941	0.697
	OP-1	0.846		
	OP-2	0.838		
	OP-3	0.854		
	OP-4	0.824		
	OP-5	0.878		
	OP-6	0.819		
	OP-7	0.781		

Table 2.
Discriminant validity by the heterotrait–monotrait ratio of correlations (HTMT)

	CR	OP	SCR	SR
CR				
OP	0.533			
SCR	0.736	0.501		
SR	0.652	0.382	0.806	

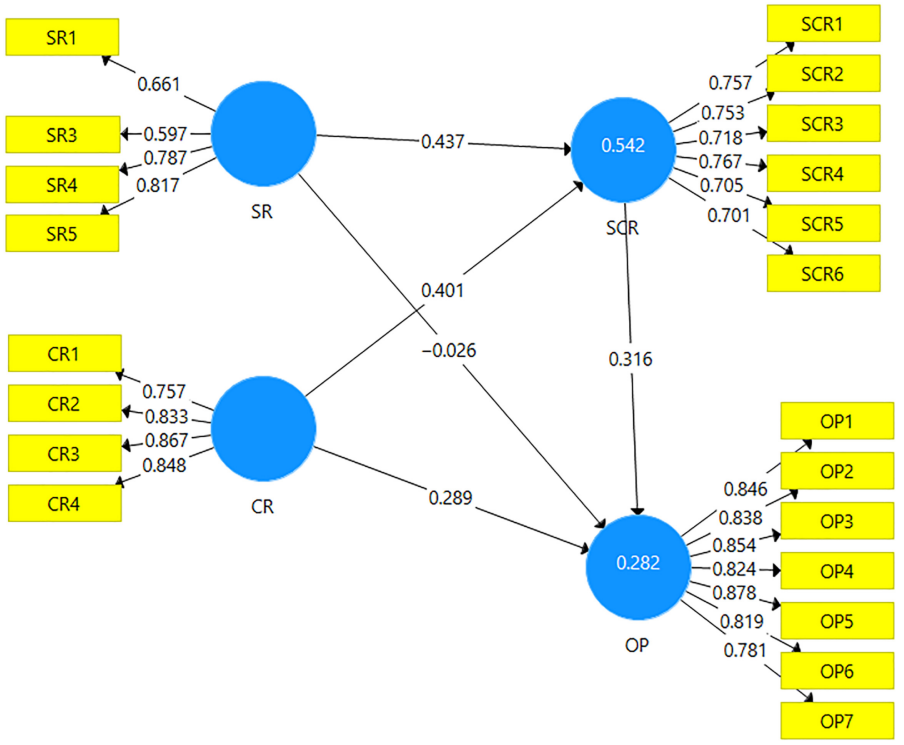

Figure 2.
Statistical model

(MV) are mentioned under the heading of Appendix 2. The value of average variance extracted (AVE) of each construct was above 0.5 and the CR values of all constructs were greater than 0.7, which justify the convergent validity. Discriminant validity was tested through HTMT and all construct relations were less than 0.8, which is within acceptable limits. However, cross loading and the Fornell–Larcker criterion were also evaluated and found satisfactory results, providing additional support to discriminant validity.

As far as the goodness of fit is concerned, it is not established in PLS-SEM typically; however, the indices fitted the data well. SRMR value was 0.80 and $X^2 = 515.142$; d.f. = 202; X^2/d.f. = 2.55. The normed chi-square value is less than the maximum value of 3.0.

5. Results

The proposed hypotheses were evaluated through PLS-SEM by using the same SmartPLS 3.3.3. The output proved that supplier and customer relationships have a positive and significant impact on SCR. H1, H3 and H4 are therefore accepted. However, H2 is rejected as it indicates that the SR does not have a positive and significant impact on OP. The *t*-value of H2 is low and the *p*-value is greater than the threshold. Therefore, H2 is not supported statistically. Finally, the effect of SCR on OP is positive and significant, which is why H5 is accepted; the *R*-square value of SCR is 0.508 and OP is 0.266 and both values are significant. The variance inflation factor (VIF) values of all items were less than 3 except two items of OP that have greater than 3, but less than 3.5 (ideally, VIF < 3, as recommended by Hair *et al.*,

2019). VIF results confirmed the absence of collinearity in the structural model. Table 3 provides a summary of hypotheses' evaluation.

5.1 Mediation analysis

Mediation analysis was performed to analyze the role of SCR as a mediator on the linkage among SR, CR and OP. The results (see Table 4) reveal that the total effect of CR and OP were found to be significant. With the inclusion of the mediator (SCR), the effect of CR on OP via mediation of SCR is also found to be noteworthy. The outcomes show that the relationship between CR and OP is partially mediated by SCR. As far as the supplier relationship is concerned, it has no direct impact on OP, however, the mediation effect via SCR is found to be significant. The results provide a full mediating relationship between SR and OP.

5.2 Control variables

Furthermore, the other two models (Table 5) were estimated with the control variables. The effects of sector, organization origin and number of employees were tested. Out of three, two were categorical variables and one was continuous. Sector and organization origin were categorical and had three categories, as mentioned in Table 6. Categorical variables were assessed with reference to formula $n-1$. Therefore, the influence of manufacturing and services was estimated on SCR and OP with reference to the third category "both sectors". Similarly, the influence of Pakistani firms (those working in Pakistan only) and MNC was examined on SCR and OP with reference to the third category Pakistani firms (who have international business). Results and comparisons of the models can be seen in Table 5. The manufacturing and services sectors have significant impact on SCR but have less impact as compared to the organization who has worked in both sectors. However, the impact of sectors on OP was not found statistically significant. Likewise, the influence of organization origin and number of employees on SCR and OP was not found statistically significant.

Table 3. Results of hypotheses testing

Hypothesis	Path	Coefficient	*p*-value	*t*-value	Outcome
H1	SR → SCR	0.437	0.000	6.869	Supported
H2	SR → OP	−0.026	0.771	0.291	Not supported
H3	CR → SCR	0.401	0.000	6.027	Supported
H4	CR → OP	0.289	0.003	3.008	Supported
H5	SCR → OP	0.316	0.001	3.253	Supported

Table 4. Mediation analysis

Mediation analysis Total effect	Coefficient	Standard deviation	*T* statistics	*p* values
CR → OP	0.416	0.085	4.899	0.000
SR → OP	0.112	0.079	1.419	0.156
Direct effect				
CR → OP	0.289	0.096	3.008	0.003
SR → OP	−0.026	0.089	0.291	0.771
Indirect effect				
CR → SCR → OP	0.127	0.046	2.752	0.006
SR → SCR → OP	0.138	0.047	2.917	0.004

Path	Model-1 Standardized coefficient	Model-2 Standardized coefficient	Model-3 Standardized coefficient
SR → SCR	0.44 (0.06) ***	0.45 (0.06) ***	0.46 (0.06) ***
SR → OP	−0.03 (0.09)	−0.03 (0.09)	−0.03 (0.09)
CR → SCR	0.40 (0.07) ***	0.39 (0.06) ***	0.36 (0.07) ***
CR → OP	0.29 (0.10) **	0.28 (0.10) **	0.28 (0.10) **
SCR → OP	0.32 (0.10) **	0.33 (0.10) **	0.35 (0.10) **
Control variables			
Manufacturing → SCR		−0.18 (0.06) **	−0.15 (0.06) **
Manufacturing → OP		0.04 (0.07)	0.04 (0.07)
Services → SCR		−0.17 (0.06) **	−0.14 (0.06) *
Services → OP		0.08 (0.08)	0.09 (0.08)
Pakistani firms → SCR			−0.08 (0.06)
Pakistani firms → OP			−0.04 (0.07)
MNC → SCR			0.02 (0.06)
MNC → OP			−0.14 (0.07) +
Employees → SCR			0.05 (0.03)
Employees → OP			−0.04 (0.03)

Note(s): Standard error in parenthesis. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, +$p < 0.10$

Table 5. Control variable analysis and comparison of models

Categories	Items	%
Sector	Manufacturing	60.80
	Services	27.20
	Both	12.00
Organization origin	Pakistani and working in Pakistan only	48.60
	Pakistani but having an export (international) business	29.70
	MNC (Multi-national companies)	21.70
Number of employees in organization	Less than 100	14.80
	101 to 300	16.20
	301 to 700	22.00
	701 to 1,000	10.90
	More than 1,000	36.10

Table 6. Profile of survey respondents

6. Discussion

6.1 Role of supplier relationship on supply chain resilience and organizational performance

The findings of the study discover that supplier relationship has positive and significant effect on SCR, which is in line with the findings (Kamalahmadi and Parast, 2016; Scholten and Schilder, 2015; Tukamuhabwa *et al.*, 2017; Um and Han, 2021). Therefore, the firm with a high level of supplier relationship is more likely to exhibit a more resilient supply chain to deal unwanted disturbance. An excellent collaborator can improve the ability to persist, adapt or transform in the face of change for all interconnected partners. For example, Shukor *et al.* (2021) have explored the significant impact of supply chain uncertainties on supplier and customer integration in the emerging market context. The findings of this study correspond that SR has positive and significant influence on SCR. Moreover, Silva *et al.* (2021) discovered backward vertical integration as a key mitigation strategy to minimize the effects of supply chain risks in emerging markets. The results of Silva *et al.* (2021) endorse the positive and significant relationship between SR and SCR.

However, the impact of SR on OP is not supported statistically. A possible explanation for this result is due to the measures regarding OP, which are mostly focused on market-related

aspects (i.e. sales, shares, growth and profits), rather than supply chain performances (e.g. inventory level and lead time). This might also be observed from the significant mediation effect between SR-SCR-OP where SCR has captured the degree of supplier integration. Lack of SR could be affected by the availability of information technology through which they exchange information, especially in cases of emerging markets (Pratono, 2020).

6.2 Influence of customer relationship on supply chain resilience and organizational performance

The results of the study reveal that customer relationship has positive and significant impact on both SCR and OP. This result is consistent with a previous finding (Chunsheng *et al.*, 2020; Jain *et al.*, 2017; Juan *et al.*, 2022) that frequent interaction between the firm and customers can improve the capability of the supply chain to deal with disruptions. Collaboration with customers through various activities can also enable firms to perform well in a competitive market. The organization perceives customers as important stakeholders and gives significant weightage. This result is like previous studies (Kalyar *et al.*, 2020; Keramati *et al.*, 2010; Liu *et al.*, 2018; Siagian *et al.*, 2022). For example, Liu and Lee (2018) discovered that customer collaboration is an important enabler to strengthen SCR. Accordingly, a firm cannot ignore customer involvement if it aims to improve overall market performance and SCR.

6.3 Direct and mediating influence of supply chain resilience

As a result, SCR has a positive and significant influence on OP (Chunsheng *et al.*, 2020; Siagian *et al.*, 2021). For example, Piprani *et al.* (2020) discovered that SCR has the greatest impact on the performance of the organization in terms of cost efficiency, flexibility, and customer services. Moreover, the present study finds a positive and significant mediating effect between SR/CR and OP. Complementary mediation is observed (CR > SCR > OP; CR > OP); situations in which the direct and indirect impacts are both important and heading in the same direction. Nevertheless, indirect-only mediation also noted (SR > SCR > OP); situations in which the indirect influence is large and the direct effect is insignificant. Here, the indirect impacts that were brought to light in our research shed light on the mediating effects of SCR, which help businesses to restore supply chain operations, bring disruptions under control, regain their projected performance and do well in the market. Indeed, as the results indicate, positive direct and indirect effects emerge (CR > SCR > OP; CR > OP) when firms initiate efficient collaboration with their customers. It will support firms and supply chains to compete well in the market, especially in unwanted situations. Despite the fact that the direct influence of SR on OP is minimal, favorable indirect effects imply that companies are obliged to work with their important suppliers as a result of being presented with problems that have never been seen before. Consequently, our study provides further support to the stakeholder theory. It reveals that close coordination with suppliers and customers helps to build a resilient supply chain against any future uncertainties and enhances market performance. The coefficient value of indirect effect (CR > SCR > OP) is low, as compared to the direct effect (CR > OP). A possible reason for this result is the multi-dimensional aspect of customer relationship. The study examines market performance based on sales, market growth, etc. that are more interconnected with customer preferences. Additionally, the direct impact of CR on performance is high, as compared to SCR direct impact on OP that also leads to low indirect effect.

Finally, the findings of the study prove that collaboration with stakeholders is a key enabler for transformative SCR (Gebhardt *et al.*, 2022; Poberschnigg *et al.*, 2020) in emerging markets (Yeoman and Mueller Santos, 2020). The results are also aligned with Ahmed *et al.*'s (2020) study, which was conducted on a sample from Pakistan.

7. Conclusions, implications and limitations

This study has established a conceptual model to understand the relationship and effect of suppliers' relationship, customers' relationship and SCR on OP in a Pakistani context. The study examined the influence of suppliers' relationship and customers' relationship on SCR. Besides, this study also investigates the impact of mediation analysis of SCR between SR/CR and OP. Furthermore, it empirically investigates the impact of having a resilient supply chain in OP.

The results revealed that two factors, i.e. customers' relationship and SCR, positively affected the OP. Organizations should focus more on customers' relationship and SCR practices to increase their overall OP. CRs can be strengthened by frequent interaction with customers. Information can be exchanged on the demand, satisfaction levels and future preferences. The findings also demonstrated that suppliers' relationship has no direct effect on OP; however, it does have a direct and positive impact on SCR. This suggests that organizations should focus on their SR to improve their SCR, which in turn shall then have a positive and direct effect on OP. Outcomes also advocate the capacity and capability of firms to bounce back after facing any disturbance. Firms were found to be ready to deal with any potential supply chain disturbance by working with a multi-skilled workforce and multiple supply sources. Although SCR uses more organizational resources, it does create a positive impact on the financial statements of organizations. Thus, this study rejects the view that SCR negatively affect the financial resources.

The outcomes of the study stress the need for practitioners to create strategic relationships with their key suppliers. Relationships can be strengthened by exchanging live and frequent data and involving each other in decision making. The study revealed that a close working relationship with suppliers may help to build SCR. The results also pushed managers to involve customers in the early stage of product development, which can be facilitated by sharing information. This close coordination and collaboration will then develop a resilient supply chain and help to obtain the positive performance of firms in the short- and long-term.

7.1 Theoretical and managerial implications

Several important theoretical advances were made by this work. To begin, this research contributes to the advancement of stakeholder theory in SCR by offering fresh perspectives on the dynamic that exists between stakeholders (suppliers and consumers) and OP. The stakeholder theory offers fresh perspectives on the use of SCR as a tactic for proactively satisfying the expectations of stakeholders. Our research is the first to include stakeholder theory in the field of SCR research and its findings lead us to the conclusion that both stakeholder research and community research have good benefits. Second, this work contributes to the body of research on the connection between stakeholder relationship and OP by conducting an empirical test of the mediating influence of SCR, which had not been discovered before. In conclusion, it validates the stakeholder theory by applying the rising market setting to industrial empirical data and analyzing the results. It incorporates the idea of relationship management among stakeholders, which promotes theoretical implications in a variety of diverse situations, and SCR. The findings provide fresh perspectives for academics to consider the role that SCR plays in mediating relationships between other variables. The findings of the study will provide researchers with information that will assist them in investigating the roles played by various stakeholders in the process of constructing a resilient global supply chain. It offers students a path ahead in order to deal with the uncertainty of the future supply chain.

The findings will help managers to strengthen their SCR. The results of this study will help practitioners to develop SCR by creating a strong relationship with suppliers and

customers. Since the results of the current study are derived from the data of an emerging economy, this will also support top managers in financial decision making for SCR. Resulting from Covid-19, organizations are investing heavily in developing SCR; therefore, the outcomes of this study will help the industry and stakeholders. Managers will also be able to understand the importance of relationships among stakeholders, especially suppliers and customers. Moreover, the present study is beneficial for the global supply chain because it helps to minimize the ripple effect of disturbances along the chain. The findings of the research are helpful to develop SCR, especially from the emerging markets context. Since the global supply chain is interconnected with several direct and indirect partners, SCR minimizes the potential disturbance that emerges from the ripple effect.

7.2 Limitations and future research directions

This study has several limitations. First, it is based on the regional context of Pakistan, so the results may not be generalizable to the developed world; however, the results can be generalized to developing countries like Pakistan. Second, the data were collected from multiple industries and do not focus on any specific industry, focusing on two main stakeholders, the suppliers, and customers.

Future research should be industry-specific and test the role of various stakeholders. It is also suggested that it tests different mediators and moderators in supply chain integration and information systems. Moreover, other dimensions of OP, including supply chain, operational, service, and market performances, need to be investigated with similar and modified constructs. Research scholars are encouraged to test similar models in differing contexts.

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Appendices

Appendix 1

		Tick the appropriate option to indicate the extent to which you agree or disagree with each statement.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	SR-1	My organization has strategic linkages with a few important suppliers in our supply chain.	☹	☹	😐	😐	😐
	SR-2	My organization involves suppliers during the design stage for our new products.	☹	☹	😐	😐	😐
	SR-3	My organization involves suppliers in production planning and inventory management.	☹	☹	😐	😐	😐
	SR-4	My organization has a supplier network that assures reliable delivery.	☹	☹	😐	😐	😐
	SR-5	My organization uses information technology well to exchange information with suppliers.	☹	☹	😐	😐	😐
	CR-1	My organization frequently interacts with customers to set its reliability, responsiveness and other standards.	☹	☹	😐	😐	😐
	CR-2	My organization frequently measures and evaluates customer satisfaction.	☹	☹	😐	😐	😐
	CR-3	My organization frequently determines future customer expectations.	☹	☹	😐	😐	😐
	CR-4	My organization facilitates customers' ability to seek assistance from it.	☹	☹	😐	😐	😐
	CR-5	My organization involves customers in the product development processes.	☹	☹	😐	😐	😐
	SCR-1	My organization has the ability to bounce back quickly after facing any trouble in supply chain disturbance.	☹	☹	😐	😐	😐
	SCR-2	My organization maintains high situational awareness at all times for any supply chain potential problem.	☹	☹	😐	😐	😐
	SCR-3	My organization use multiple supply sources to ensure smooth availability of material.	☹	☹	😐	😐	😐
	SCR-4	My organization has a multi-skilled workforce to cope with changes in supply chain disturbance.	☹	☹	😐	😐	😐
	SCR-5	My organization has a strong collaboration mechanism with stakeholders such as Govt. regulatory authorities and Trade/Industry associations.	☹	☹	😐	😐	😐
	SCR-6	My organization is adept financially to proactively meet contingencies.	☹	☹	😐	😐	😐

Kindly circle/tick/mark the number which best indicates your firm's overall performance. 1 = Significant decrease, 2 = Decrease, 3 = Same as before, 4 = Increase, 5 = Significant increase

(*continued*)

Table A1. Questionnaire

How well an organization achieves its market-oriented and financial goals						
OP1	Market share	1	2	3	4	5
OP2	Return on investment	1	2	3	4	5
OP3	The growth of market share	1	2	3	4	5
OP4	The growth of sales	1	2	3	4	5
OP5	Growth in return on investment	1	2	3	4	5
OP6	Profit margin on investment	1	2	3	4	5
OP7	Overall competitive position	1	2	3	4	5

Table A1.

Appendix 2

Manifest variables	MV mean
SR1	0.654
SR3	0.591
SR4	0.786
SR5	0.813
CR1	0.757
CR2	0.831
CR3	0.867
CR4	0.846
SCR1	0.753
SCR2	0.750
SCR3	0.709
SCR4	0.763
SCR5	0.706
SCR6	0.702
OP1	0.841
OP2	0.837
OP3	0.851
OP4	0.824
OP5	0.878
OP6	0.817
OP7	0.780

Table A2.
Mean of the manifest variables

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