



IMPACT OF SUPPLIER RELATIONAL CAPITAL ON SUPPLY CHAIN PERFORMANCE IN PAKISTANI TEXTILE INDUSTRY



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ABSTRACT

Article History

Received: 27 November 2018

Revised: 10 January 2019

Accepted: 13 February 2019

Published: 25 March 2019

Keywords

Supplier relational capital (SRC)
Supply chain performance (SCP)
Organizational culture
Enterprise resource planning (ERP).

JEL Classification:

L29; J24; A12.

This research aims to improve supply chain performance (SCP) through successful usage of supplier relational capital (SRC). This can be through investigating the effect of enterprise resource planning (ERP) system and organizational culture (OC) on the relationship between supplier relational capital and supply chain performance in the context of Pakistani manufacturing firms. The questionnaire survey was posted to the Pakistani manufacturing firms that are using ERP system. A total of hundred (100) usable responses were received and used in the analysis. The findings of this research indicated that there is a strong and significant positive relationship between SRC on SCP. In addition, the results also show a significant and positive influence of organizational culture on the relationship between SRC and SCP. Moreover, a significant but moderate influence of ERP on SCP was observed. The evidences show that textile firms in Pakistan not only have to improve their relationship with suppliers but also promote a conducive organizational culture to reap the benefits of ERP implementation and consequentially supply chain performance.

Contribution/ Originality: This study contributes to the existing literature by introducing organizational culture as well as enterprise resource planning (ERP) a mediating factor on the relationship between supplier relational capital and firm supply chain performance.

1. INTRODUCTION

Business organizations today are facing a more complex and competitive environment than ever before (Chuang *et al.*, 2016). Markets are becoming more transparent, customer driven and, in general, the business dynamics are changing at ever increasing pace (Yi *et al.*, 2016). These developments are profoundly affecting the way in which supply chains of businesses are being managed. Indeed, the relevant entity for analyzing potential business success is no longer the individual firm, but rather the chain of supplying and delivering organizations. Consequently, efficiently and effectively organized supply chains are becoming one of the major source of competitive advantage. Efficiency and effectiveness of a supply chain depend exclusively upon its level of integration. Therefore, it is pivotal for firms to be integrated in supply chains to attain sustainable competitive advantage.

Supplier relational capital (SRC) is an important medium for attaining supply chain integration. [Blonska et al. \(2013\)](#) noted that carefully designed and maintained buyer-supplier relationships (supplier relational capital) are the cornerstone of integrated supply chain management. Despite its practical significance, the scholastic work focusing on SRC and supply chain integration has not evolved much. Further, the available literature has produced mixed results so as to leave it in a state of ambivalence ([Mubarik et al., 2016](#)). Besides, much of the evidences have been found largely in the developed countries. For example, [Burki and Buvik \(2017\)](#) noted that the majority of Pakistan's textile firms maintain arms-length relationship with their suppliers owing to almost zero level of trust and sharing of information. The role of trust in inter-firm coordination was discussed extensively by [Coase \(1937\)](#). As a consequence, these firms face a bullwhip situation in the industry resulting in large supply chain inefficiencies. Hence, it is important to examine ERP implementation, and organizational, and the role they play. As firms interact and align with a diverse network of suppliers and customers as supply chain partners, it could generate and strengthen organizational culture (OC) and ERP capabilities to support firm performance. Against this backdrop, it is then worth examining the influence of SRC on supply chain performance. Furthermore, it is equally important to analyze the impact of OC and ERP implementation in the relationship between SRC and Supplier Chain Performance (SCP).

The rest of the paper follows the conventional sequence. The proceeding section reviews the literature on the topic. Subsequent sections present the methodology, results, conclusion and recommendations.

2. SUPPLIER RELATIONAL CAPITAL (SRC) AND SUPPLY CHAIN PERFORMANCE

SCP refers to the extended supply chain's activities in meeting end-customer requirements, including product availability, and on-time delivery in a responsive and efficient manner. SCP crosses company boundaries since it includes involvement of various organizations to deliver a product or service to end customers. As the world is globalized, strong relationships are acting as the backbone of the socialization process and during the past few years there has been strong emphasis on buyer-supplier relationships.

The extant literature have argued that firms cannot be confined from the surroundings but rather depend on relationships with their surroundings ([Fayezi et al., 2016](#)). Given that supply chain integration is essential for leveraging performance, relational capital is one of the key intangible assets of organizations. Within relational capital the part which plays apex role is SRC of organizations, which refers to value created by a firm from its relationship with suppliers ([Mubarik et al., 2012](#)). Although SRC can be traced back since to the inception of the first business on earth, it was the Resource Based View (RBV) articulated by [Penrose \(1959\)](#) and [Wernerfelt \(1984\)](#) that comprehensively elaborated its vital role in firm performance. [Wernerfelt \(1984\)](#) had argued that resources should have four characteristics, namely, value, non-substitutability, rareness and inimitability. The RBV has unveiled SRC as a major source of competitive advantage, which can be valuable and inimitable ([Lavie, 2006; Wang, 2014](#)). SRC can enhance knowledge, which ultimately brings firms advantages. Copying SRC is difficult because one cannot identify the specific facet of its advantage to imitate it. It for these reasons SRC is assumed to be the central corporate strategic asset for attaining sustainable business performance ([Sambasivan et al., 2013](#)). Social capital theory suggests that firms investing in relationships with other firms have more resilient supply chains ([Lin et al., 2001](#)). However, while firms with too weak ties hardly the benefits of information integration, firms with excessive ties are forced to allocate too much of resources to manage relationships.

Although SRC has been influenced by many factors, three components, namely, trust, commitment, and identification, have repeatedly captivated the attention of researchers ([Cousins et al., 2006; Wang, 2014](#)). Trust has been enunciated as the significant ingredient of buyer-supplier relationship. It is as an expectation from other parties to keep shared information secure and to fulfill the agreed promises through thick and thin ([Kale et al., 2000; Poppo et al., 2016](#)).

With commitment, firms actively seek conformance and compliance of agreement from suppliers and buyers. Higher compliance and conformance refer to greater commitment (De Clercq and Sapienza, 2006). Commitment also denotes to what extent firms aim to preserve a sustainable relationship with other firms (Krause *et al.*, 2007). Commitment plays a vital role in business to business relationships as it influences positive attitudes among business partners, thus raising SRC. Identification treats individuals as a group to whom the one is associated with or the process in which the individual identifies himself in the group (Nahapiet and Ghoshal, 1998). Trier and Molka (2013) argued that the interest to participate in collective activity of an individual increased when integrated in groups. Consequently, the potential to identify with socially connected members increases the stronger that bond so as to improve the firm's SRC (Nahapiet and Ghoshal, 1998; Khalique *et al.*, 2015a).

In short, the extant is filled with evidence that SRC can be a major source of sustainable competitive advantage (Campbell *et al.*, 2012). Epitomizing the same point, Khalique *et al.* (2015a) argued that the ability of a firm to learn improves with the longevity of its relationship with key suppliers. Thus, a feedback effect exists in the relationship between SRC and SCP, while performance in turn strengthens relationship. From discussion above, we draw the first proposition as follows:

Proposition-1. SRC significantly improves supply chain performance (SCP)

A. ERP, Organizational Culture (OC) and Supply Chain Performance

Arzu and Erman (2010) pointed to information system fragmentation as the primary culprit for information delays and distortions in the supply chain, which happens due to a lack of effective intra-organizational links. ERP is a comprehensive transaction management system that integrates and subsumes multiple business processes into a single seamless system. It is well-known that information sharing schemes can effectively fight challenges, such as the Bullwhip Effect in supply chains. To enhance information sharing and to capitalize on strong relational ties, many textile companies worldwide have deployed company-wide centralized ERP systems as a solution (Karlsson and Flink, 2014).

The main purpose for implementing ERP systems is to achieve both integration and coordination within the company and across the industry. This will in turn lead to cost reduction, and hence, profitability improvement (Su and Yang, 2010). It is worth-mentioning that implementation of the ERP system and supplier relational capital often have bi-directional relationship. Where having strong relational ties make it easy to implement ERP having ERP systems make flow of information making relationship stronger. Strong SRC with the suppliers persuades companies to implement ERP and provide a feasible environment for ERP implementation. Communication of firms with stakeholders improves during the post-ERP implementation phase, which helps raise relational capital. Also, Saleh and Mohamed (2012) argue that ERP implementation strengthens relationship with suppliers so as to help reduce inventory holding, procurement and logistics costs.

Adoption of ERP systems can be motivated by pressure from competitors, requests from partners or customers. Several studies show a positive influence of ERP implementation on firm's supply chain management competence (e.g. (Larson and Rogers, 1998; Chen *et al.*, 2008; Acar *et al.*, 2017)). However, there are also evidence that show that poor relationship management is behind ERP failures. For example, Khalique *et al.* (2015a) and Chen *et al.* (2008) refute any significant role by ERP implementation in relationship management and supply chain performance. These studies argue that ERP implementation sometimes influence buyer-supplier relationships negatively, thus, decreasing supply chain performance. Also, they argue that ERP implementation needs radical business process re-engineering (BPR), which often puts pressure on suppliers thereby creating rifts in relationships (Khalique *et al.*, 2015b). These contradictory results has caused ambivalence in the literature, and therefore calls for the use of more robust analytical techniques to revisit the management-performance paradox. Hence, we hypothesize following:

Proposition-2. ERP mediates the relationship between supplier relational capital (SRC) and supply chain performance (SCP)

The concept of organizational culture (OC) is normally conceived as a way of doing business. In this context, OC ascribes to how different organizations go about resolving tasks at hand in different ways. Generally, organizational sociologists deem culture as shared understandings that, through subtle and complex expression, regulate social life in organizations (e.g. Hoy (1990)). A handful of scholastic work has applied cultural models to study supply chain management (refs), which claim that organization culture provides a conducive platform to extend the relationship between clients and suppliers. They argue that OC not only supports supplier relationship management activities but also remains instrumental in maintaining better customer relationship management (Mubarik *et al.*, 2016).

Much of the extant literature have mentioned trust, commitment, cooperative norms, organizational compatibility, and top management support as five cultural elements of shared values among supply chain organizations (e.g. (Brown and Humphreys, 2006; Brown, 2015)). For example, taking commitment, cooperative norm and organizational compatibility as threads of OC, Brown and Humphreys (2006) conclude that OC plays an indispensable role in diverting the benefits of attaining and sustaining supply chain integration. They argue that OC helps to maintain and improve relationship between key suppliers so as to increase the flexibility, and integrity of supply chains. On the same note, Chen *et al.* (2009) argue that supply chain integration strategies cannot work without a conducive and aligned organizational culture. Besides, in urging OC concomitant in relationship management and competitive advantage juxtaposition (Varsei *et al.*, 2014) put forward organizational networks and communal values as two highly influential threads of OC. They found significant influence of SRC on SCP in firms having strong OC (networked, communal as opposed to fragmented and mercenary). In contrast, Heckmann *et al.* (2015) found negligible influence of OC on SC performance, arguing that looking outward is more appropriate for firms to improve their inward process for elevating SCP. Taking cooperative norms as a major thread of OC, Heckmann *et al.* (2015) showed that collectivist OC momentarily facilitate long-term supplier relationships compared to individualistic OC. However, Durach and Wiengarten (2017) criticized the findings of Heckmann *et al.* (2015) by contending that without proper OC integrated supply chains becomes an onerous concept. Similarly, using a competing values framework to represent OC, Kim (2017) claimed a profound impact of OC on supply chain integration. One can also argue that such OC slows down evaluation and promotion exercises and may be reliable only in long-term supply chain relationships. Hence, we hypothesize that:

Proposition-3. Organization culture (OC) mediates the relationship between supplier relational capital (SRC) and supply chain performance (SCP)

The conceptual framework of the three hypotheses are presented in the Figure 1 below:

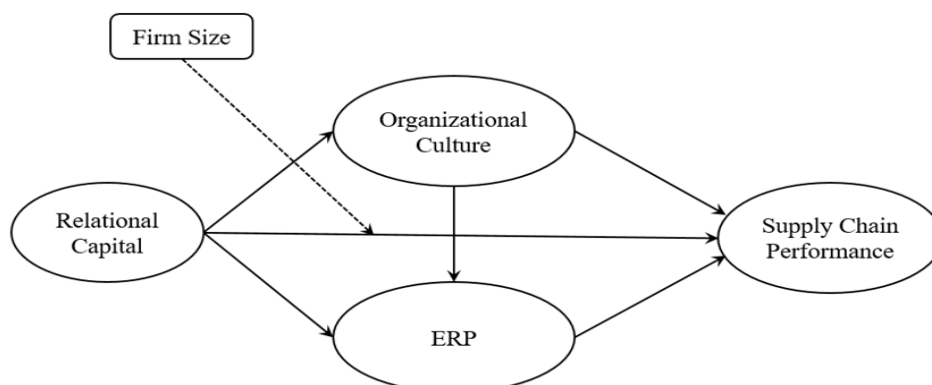


Figure-1. Conceptual Framework

Source:: Authors developed framework

3. METHODOLOGY AND DATA

Using the conceptual framework developed in the previous section, we discuss the questionnaire design and sampling framework used in the study and finally the analytic techniques in this section. Given the lack of secondary data involving the critical variables, primary research became the basis of the study.

a. Questionnaire Design

The study used a close ended questionnaire as a tool for data collection, which comprises two sections. The first section raises seven questions aimed at background information of respondents and the firms surveyed. Section 2 includes questions to measure the latent variable of relational quality, supply chain performance, organizational culture and ERP implementation. Relational quality was measured by second order constructs and three first order constructs, namely, trust, commitment and satisfaction. All items were measured using Likert scale scores ranging from from 1 (strongly disagree) to 5 (strongly agree). Table 1 illustrates the constructs and the source from where they were drawn.

Table-1. Construct development

Construct	Lower-order variable	Literature source	Number of items
Supplier relational capital	Commitment	Varsei <i>et al.</i> (2014)	06
	Satisfaction	Mitchell (2013)	05
	Trust	Eisenberger <i>et al.</i> (2010)	05
Supply Chain Performance		Tarafdar and Qrunfleh (2017)	08
Organizational Culture		Dubey <i>et al.</i> (2017)	06
ERP implementation		Acar <i>et al.</i> (2017); Huang and Handfield (2015)	07

Source: Authors' self-development of construct

b. Sampling Method

The study focused on the textile sector of Pakistan. According to *All Pakistan Textile Manufacturing Association* (PPA), there are approximately 1500 registered textile firms in Pakistan. The firms were selected randomly using a slide rule of every 15th firm by alphabetical order. In total 100 Karachi based textile firms responded and by respondents we collected 200 completed questionnaires, i.e 2 respondents from each of the 100 firms. The respondents include the following personnel: General Managers, Managers and Deputy/Assistant Managers from various departments. Table 2 shows the profile of the respondents.

Table-2. Profile of respondents

A. Designation	Number
General Manager	9
Deputy General Manager	24
Manager	39
Deputy Manager	27
B. Function	
Procurement	22
ERP	9
Sourcing	21
Transportation	19
Inventory Management	23
Operation and Planning	16

Source: Authors' survey (2017)

c. Analytical Technique

We applied the Partial Least Squares (PLS) method for estimation purposes. The advantage of this technique is that it can handle small samples. The PLS is also not restrictive on distribution constraints (Kaufmann and Gaeckler, 2015). Moreover, this method simultaneously allows for the examination of the model and appraisal of the

properties underlying the model. The PLS is popular due to its capacity to model latent constructs in conditions of non-normality and to examine partial links without requiring a complete structured model (Ullman and Bentler, 2012). The PLS is therefore appropriate for assessing initial phases of theory building.

4. FINDINGS

Of the 100 firms surveyed, approximately 40 percent of them are large in size, with over 500 employees. A majority of the firms are well established in their business, having been in operation for more than 6 years. A majority of the firms, also have medium term relationship and are engaged in long term contracts with suppliers. The characteristics of the firms surveyed mirror that of the entire population of firms in the textile industry in Pakistan

Table-3. Profile of the firms

	Number of firms	Percentage
Number of employees		
≤ 250	17	17%
250-500	53	53%
500-750	16	16%
>750	14	14%
Years in operation		
< 1 year	3	3%
1-3 years	12	12%
4-6 years	21	21%
>6 years	64	64%

Source: Authors' survey (2017).

The PLS was applied in two steps. In the first step, the responses in the questionnaire were assessed for reliability and validity by assessing factor loading, average variance extracted and composite reliability (CR) values. These results are presented in Table-4. The values of all factor loadings are above 0.70, which shows that all the items load well in their respective constructs. Similarly the values of AVE and CR are greater than 0.50 and 0.60 respectively, confirming the discriminant validity of the instrument. The value of Cronbach alpha is also greater than 0.70 in both the individual constructs and on the model. From these results we can infer that the questionnaire used for data collection is valid. We subsequently checked for normality of the individual and grouped data. The results of Shiparo test shows that data is normal both at the individual and group levels.

Table-4. Validity Statistics

Variables	Variables /Items	Factor Loading	AVE	CR	Cronbach alpha
Relational Capital	Satisfaction	.71	.75	.79	.91
	Commitment	.75			
	Trust	.80			
Supply Chain performance	Lead Time	.84	.76	.81	.88
	Time to Market	.84			
	Back orders	.71			
	Inventory Cost	.72			
	Late deliveries	.75			
	Defected Deliveries	.71			
ERP Implementation	ERP1	.70	.77	.83	.79
	ERP2	.88			
	ERP3	.78			
	ERP4	.74			
	ERP5	.74			
Organization Culture	OC1	.77	.76	.79	.74
	OC2	.71			
	OC3	.82			
	OC4	.72			
	OC5	.79			

Source: Computed from data collected from authors' survey (2017).

The results of direct and indirect effect of supplier relational capital of all sampled firms have been portrayed in Table 5. The result show that supplier relational capital have positive significant influence on supply chain performance. The coefficient value of .45 depicts that a substantive improvement in supply chain performance can be made with the help of relational capital.

These results coincide with the previous studies like Arzu and Erman (2010); Karlsson and Flink (2014); Karlsson and Flink (2014) and Krause *et al.* (2007). Furthermore, the results also illustrate that ERP implementation plays a significant mediating role in the relationship between SRC and SCP. These results confirm that ERP implementation can be instrumental in translating SRC of a company into SCP, which is consistent with the findings of Kim (2017). The results also show a positive and significant role of OC on the relationship between SRC and SCP. Therefore, managing SRC properly can improve OC, which can have positive impact on the SCP of a firm.

Table-5. Analysis (with total sample)

Hypothesis	Value	Decision
Supplier relational capital → Supply Chain Performance	.45*	Supported
Supplier relational capital → ERP → Supply Chain Performance	.11*	Supported
Supplier relational capital → Org Culture → Supply Chain Performance	.14*	Supported

Note: * and ** show the level of significance at 5 percent and 1 percent respectively
Source: Computed from data collected from authors' survey (2017).

In order to see whether the impact of SRC differs by size of firm, we have analyzed separately data of SMEs and larger firms. The results of SMEs and larger firms appear in Table 6 and Table 7 respectively. Interestingly, the overall impact of SRC is significant in both cases.

However, the magnitude of the impact is considerably different between the two. While SRC has a positive impact on SCP of SMEs, the magnitude of its impact is quite low vis-a-vis large firms. Moreover, ERP implementation and OC appear to be instrumental in the relationship between SRC and SCP in both sets of firms. These results concur with the findings on SMEs of and Khalique *et al.* (2015a).

Table-6. Analysis by size, Small Firms

Hypothesis	Value	Decision
Supplier relational capital → Supply Chain Performance	.15*	Supported
Supplier relational capital → ERP Imp → Supply Chain Performance	.08**	Supported
Supplier relational capital → Org Culture → Supply Chain Performance	.05	Not Supported

Note: * and ** show the level of significance at 5percent and 1 percent respectively
Source: Computed from data collected from authors' survey (2017).

Table 7 presents the results of large firms. It is worth mentioning that the impact of SRC is not only significant in large firms its coefficient value is also high, which shows an effective role of SRC in supporting SCP. In addition, the influential role of ERP implementation and OC is also evident from the results. The high coefficient values of these variables depict their positive influence on the relationship between SRC and SCP, which concur with the findings of Dowty and Wallace (2010) However, Dowty and Wallace (2010) refute the influential role of OC in the relationship between SRC and SCP.

Table-7. Analysis by size, Large Firms

Hypothesis	Value	Decision
Supplier relational capital → Supply Chain Performance	.21*	Supported
Supplier relational capital → ERP → Supply Chain Performance	.12*	Supported
Supplier relational capital → Org Culture → Supply Chain Performance	.11*	Supported

Note: * and ** show the level of significance at 5percent and 1 percent respectively
Source: Computed from data collected from authors' survey (2017)

5. CONCLUSIONS

The study tested three major propositions about SRC. First it tested the direct influence of SRC on SCP. Second, it analysed the influence of ERP implementation on the relationship between SRC and SCP. Third, it evaluated the influence of OC on the relationship between SRC and SCP.

These propositions were tested by taking a comprehensive sample of all textile firms that responded to our survey. In order to examine the impact of SRC by size, PLS was run separately on SMEs and large firms. The findings of this study not only concur with extant findings, they also provide empirical evidence to augment the performance of textile companies in Pakistan.

The results show that SRC has a significant direct influence on SCP in both SMEs and large firms. The results also show that OC and ERP implementation have instrumental roles in positively strengthening SRC and SCP. From these results it can be safely deduced that SRC can play a pivotal role in stimulating SCP in the textile industry of Pakistan specifically and industries generally.

This study suggests that OC influences suppliers and distributors in the supply chain. However, the dynamic interactions between OC and supplier organizations might not be so straightforward, and therefore, deserve further examination. In a nutshell, we present that SRC is significantly and directly linked with SCP. In doing so, this study contributes significantly to the literature on SRC and SCP.

The results also demonstrate that the relationship between SRC and SCP are fully mediated by ERP implementation and OC. Furthermore, the results also suggest that maintaining SRC with suppliers can raise supply chain agility. These findings reinforce the extended viewpoint of resource-based view, which argues that resources can promote competitive advantage through building organizational capability.

Funding: This study received no specific financial support.

Competing Interests: The authors declare that they have no competing interests.

Contributors/Acknowledgement: All authors contributed equally to the conception and design of the study.

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