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The Impact of the Firms' Relationship Commitment and Customer Integration on Supply Chain Performance

STRUCTURED ABSTRACT

Purpose: The study shows how to improve supply chain performance through the relationship between firms and their customers. In doing so, this study examines the impact of a firm's relationship commitment and customer integration on supply chain performance. The aim is to detail a way to increase supply chain performance through the relationship between companies and their customers.

Design/methodology/approach: The empirical analysis was based on a survey on 205 corporate-Egypt multi-industry businesses including manufacturing, retailing, wholesaling and shipping services firms. Data collection was through a questionnaire survey distributed to 1,264 senior managers with responsibilities in the field of supply chain, logistics, purchasing, marketing, and operations, and with a 16% response rate. A conceptual model was designed, and hypotheses analyzed with covariance-based structural equation modelling.

Findings: This study makes a significant contribution to the SCM literature by examining the influence of firms' relationship commitment on supply chain performance in the supply chain management context by means of the disaggregation of customer integration into two dimensions: integration *with* customer (IWC) and integration *by* customer (IBC). The findings indicate that firms' relationship commitment does not relate directly to supply chain performance, but rather indirectly through integration both with and by customers.

Research limitations/implications: The paper outlines a conceptual model in which firms' relationship commitment relates indirectly to supply chain performance. The model also sheds light on the fact that integration with customers precedes integration by customers in supply chains. This finding suggests that firms should focus on customer integration to improve supply chain performance.

Practical implications: This study offers a particularly refined understanding of the reasons behind and situations in which supply chain integration (SCI) enables firms to gain superior supply chain performance. In fact, firms focusing on customer integration may improve their supply chain performance, thus enhancing the value of the supply chain.

Originality: This study contributes to the literature by considering a relational view of the SCI-Performance path. In particular, by disaggregating customer integration into integration with customers and integration by customers, this paper verifies customer integration acting as a mediator between relationship commitment and supply chain performance in supply chains.

KEYWORDS (6)

Supply Chain Integration, Customer Integration, Relationship Commitment, Supply Chain Performance, Egypt.

1. INTRODUCTION

There is a common pattern in current business management of and marketing by firms operating in complex networks of supply chain partners (Sutton-Brady, 2008), commonly referred as supply chain integration (SCI) (Zailani and Rajagopal, 2005). SCI denotes the integration of firms along the supply chain, by means of which a firm collaborates with its upstream and downstream partners, i.e. supplier and customer integration (Frohlich and Westbrook, 2001; Turkulainen *et al.*, 2017). This constitutes a company´s "*strategic activity"* (Loury-Okoumba and Mafini, 2021, p. 3) that helps supply chain partners to achieve competitive advantages (Frank *et al.*, 2019; Mia *et al.*, 2019) and better performance (Frank *et al.*, 2019; Frohlich and Westbrook, 2001; Zailani and Rajagopal, 2005). SCI has three dimensions: supplier integration, internal integration, and customer integration. Supplier integration refers to the extent to which a firm works together with its main suppliers in decision-making preparations, plans, procedures, and tasks, mutually to meet customer requirements. Internal integration is the level to which a firm cooperatively establishes its own managerial plans, procedures, and tasks. And customer integration refers to the level of firm usage of client contributions in the service delivery process (Aunyawong *et al.*, 2020).

Certainly, supply chain performance (SCP) refers to the chain´s capability to provide worth and valuable products and services in the correct quantities and at correct time, but at minimum total cost to the final customer of the supply chain (Green Jr. *et al.*, 2012; Vanpoucke et al., 2017). In so, Gunasekaran *et al.* (2001) considered this as entailing overall efficiency and effectiveness involving flexibility, integration, and customer responsiveness (Qrunfleh and Tarafdar, 2014).

Accordingly, the area of SCP has gained considerable research attention and, indeed, within the supply chain arena specifically, has recently been considered "*one of the prominent research streams*" (Ataseven and Nair, 2017, p. 252), whereas, at the same time, it has also been recognized that the SCI-SCP path still needs to be studied and understood better (Zhao et al., 2015; Wiengarten, et al., 2019). In such a research arena, one of the main questions raised is why some companies have higher financial performance than others. In this regard, it is argued that the profitability of a firm may well depend on the efficiency and effectiveness of the firm's supply chain, by coordinating the activities of each member to facilitate an efficient flow of goods and services, and by matching of supply with demand.

In addition, contemporary relationship marketing and the business to business literature have also recognized the need for coordination and collaboration among partners for the integration to succeed (Day, 2000; Gulati *et al.*, 2012; Høgevold *et al.*, 2019), which leads to the issue of relationship commitment (Zhao *et al.*, 2011). Indeed, collaboration and business relationships in the supply chain will only be effective when there is relationship commitment among partners (Morgan and Hunt, 1999) or at least the desire of the partner firms to maintain the relationship (Gounaris, 2005). Even more so, this relational view accords a critical role to the customer within supply chain integration, that is, customer integration (Martinelli and Tunisini, 2019). Explicitly, in the current hypercompetitive markets, business within a supply chain needs to be relationship-oriented and requires mutual commitment in order to succeed (Gil-Saura *et al.*, 2009; Høgevold *et al.*, 2020; Viio and Grönroos, 2014). This topic turns out to be a new issue in the SCI literature, but does firms' relationship commitment really influence the firm's supply chain performance?

Integrating the relationship marketing approach into the SCI literature can be a sound way to respond to such an open question. Therefore, the main aim of this paper is to increase the understanding of supply chain performance in integrated firms by means of their relationship commitment, as this issue relates to customer integration and hence to business performance

by opening up a new line of research considering these indirect effects. Accordingly, in this paper, we apply the relationship commitment of firms (Morgan and Hunt, 1994) to the SCI context.

The general view in the business and marketing literature is that SCI represents a basis for competitive advantages (Chen *et al.*, 2009; Mia *et al.*, 2019) and for effectiveness and efficiency (Kim, 2017; Loury-Okoumba and Mafini, 2021; Seiler *et al.*, 2020) for firms integrated along the supply chain (Seiler *et al.*, 2020). SCI enables firms to potentially enhance their performance and achieve benefits both at the strategic and operational levels (Frank *et al.*, 2019; Frohlich and Westbrook, 2001; Zailani and Rajagopal, 2005) by establishing and maintaining relationships among the integrated firms (Zhu *et al.*, 2018). Nonetheless, on this issue, the reality is that the "*empirical findings are inconsistent*" (Frank *et al.*, 2019, p. 540). For example, some studies argue that SCI may impair financial performance (Cuijpers *et al.*, 2011; Das *et al.*, 2006) while others have confirmed that SCI has a positive effect on financial performance (Flynn *et al.*, 2010; Kim, 2009). In this direction, papers such as the meta-analytical of Mackelprang *et al.* (2014) indicate that there might be other aspects to consider, given that this mixed relationship, and the need to improve research-based knowledge on the SCI-SCP path (Chen *et al.*, 2009; Frank *et al.*, 2019; Mackelprang *et al.*, 2014; Zhao *et al.*, 2015).

Accordingly, grounded in the relational view (Dyer and Singh, 1998) and in commitment-trust theory (Morgan and Hunt, 1994), establishing and maintaining collaborative relationships helps firms to maximize customer value and gain competitive advantages (Autry *et al.*, 2014; Esper *et al.*, 2010; Kumar *et al.*, 2017; Zhu *et al.*, 2018) as the integration generates relational rent (Flynn et al., 2010). Certainly, the firm´s engagement with supplier and customers implies partner collaboration and coordination in the long term (Autry *et al.*, 2014; Leuschner Rudolf *et al.*, 2013; Yuan *et al.*, 2020), which lead to firm´s relationship commitment (Zhao *et al.*, 2011, 2008).

The relational approach (Cao and Zhang, 2011) also recognizes the proactive and highly relevant role of the customer within supply chain integration (Martinelli and Tunisini, 2019; Stank, Keller and Closs, 2001; Zhao *et al.*, 2015). Specifically, customer integration includes managing intra- and inter-organisational processes in a collaboratively way which implies that in order provide maximum value to the customers, there is a need for the flows of products, services, information, and money to be managed effectively and efficiently (Ben Naylor *et al.*, 1999; Zhao *et al.*, 2015, 2008). Moreover, authors such as Schoenherr and Swink (2012) and Zhang and Huo (2013) have specified that when customer integration is high, firms increase their likelihood to attain relational rents and, thereby their long term competitive advantages.

In particular, Yu *et al.* (2013) have indicated that future research needs to consider the link between firms' relationship commitment and firms' external integration, and hence customer integration. Indeed, the customer is a proactive part of the relationship (Prahalad and Ramaswamy, 2004), but the customer perspective "*has still not been deeply analyzed among academics*" (Martinelli and Tunisini, 2019, p. 25).

In line with this emerging approach and recent research calls (Autry *et al.*, 2014; Martinelli and Tunisini, 2019; Yu *et al.*, 2013), in this work we emphasize customer integration. Moreover, the research question raised is whether firms' relationship commitment influences the firms' supply chain performance. The purpose of this study is therefore to examine the role of firms' relationship commitment and customer integration on supply chain performance. The aim is to explain how supply chain performance can be improved throughout better relationships between the company and its customers. In so, we propose a model in which firms' relationship commitment indirectly contributes to a firm's supply chain performance. In addition, we

decompose customer integration into two dimensions: (1) integration with customer (IWC) and (2) integration by customer (IBC) and investigate the relation between the two. Through these dimensions, supply chain members can plan, organize, and capitalize on the supply chain`s value.

All in all, to achieve this aim, this paper is structured as follows: firstly, we present our research model and its relevance. Next, we offer a theoretical framework and develop our research hypothesis. We then explain the methodology for the empirical analysis, present our results and a discussion section. Afterwards, research and practical implications are considered. Lastly, we offer some conclusions and future research suggestions.

2. RESEARCH RELEVANCE AND PROPOSED CONCEPTUAL MODEL

The study presented here responds to several research calls in the field of supply chain management to clarify the SCI-SCP path (e.g. Chen *et al.*, 2009; Frank *et al.*, 2019) by considering the relational marketing perspective regarding firms' relationship commitment, as suggested by (Zhao *et al.*, 2008).

While investigating SCI, many studies split the issue into three individual constructs (i.e., internal, supplier, and customer integration (Jajja *et al.*, 2018; Piprani *et al.*, 2020). However, the opposite opinion, namely treating SCI as a single construct, has been considered in many empirical works (Huang *et al.*, 2014; Tseng and Liao, 2015).

In particular, our study increases the level of knowledge on the issue of supply chain integration in the following ways:

Firstly, in considering a relational view by which integration facilitates strategic partnerships for acquiring valuable resources (Kumar *et al.*, 2017; Martinelli and Tunisini, 2019; Zhao *et al.*, 2015), we analyze the indirect link between firms' relationship commitment and supply chain performance through customer integration. These associations have not previously been tested.

Secondly, while some studies (e.g. Beamon, 1999; Green Jr. *et al.*, 2012; Gunasekaran *et al.*, 2001; Gunasekaran and Kobu, 2007; Martin and Patterson, 2009; McCormack *et al.*, 2008; Qrunfleh and Tarafdar, 2014) have used measures of supply chain performance, the most researchers have analyzed measures of operational performance (e.g., (Devaraj *et al.*, 2007; Frohlich and Westbrook, 2001)) and consumer satisfaction (e.g., (Homburg and Stock, 2004) In this work, we follow Qrunfleh and Tarafdar (2014) who included flexibility, integration, and customer responsiveness in order to measure sales performance.

Thirdly, scales measuring customer integration include two types of dimension (Flynn *et al.*, 2010), but for this work we decompose consumer integration into the two dimensions (IWC and IBC). We do so because, for example, a firm can share its production plan with its largest customer, but this customer may not share its points of sale and demand information with the firm. A customer who shares accurate demand information will help firms to improve their response, being more flexible to market demand, and enhancing forecasting accuracy.

Integration by customers can be achieved through providing new and innovative ideas to develop new products (Piprani *et al.*, 2020) and by sharing the new product specifications and characteristics (Jajja *et al.*, 2018). Thus, integration by customers allow firms to truly comprehend their products, culture, and market, thereby allowing firms to respond correctly to the market needs (Piprani *et al.*, 2020).

Fourthly, we argue that the indirect effect of firms' relationship commitment on supply chain performance occurs through the above two dimensions, and finally, we suggest that IWC influences IBC, but that IBC does not influence IWC. By decomposing the customer integration construct into two dimensions and examining its link with supply chain performance, this study opens up new avenues of investigation.

In this framework, we propose a model in which firms' relationship commitment indirectly contributes to a firm's supply chain performance through the two dimensions of consumer integration - IWC and IBC -. Collectively, the relationships among constructs in our conceptual model are summarised in Figure 1.

Insert Figure 1 about here.

Figure 1: Conceptual model: graphical description

3. THEORETICAL FRAMEWORK

3.1. Customer Integration in the Supply Chain

The supply chain reflects those upstream and downstream connections of different firms throughout their processes and activities, which create an organized network in order to develop valuable products and services for the final consumer (Christopher, 2016). This means that a supply chain can consist of multiple firms, such as upstream suppliers, downstream distributers and ultimately the consumer (Frohlich and Westbrook, 2001; Zailani and Rajagopal, 2005).

While some studies have investigated supply chain integration as an unidimensional or single construct (Armistead and Mapes, 1993; Crespo Marquez *et al.*, 2004; Eve D Rosenzweig, 2003), most researchers have considered firms' supply chain integration as a multi-dimensional construct, separating supply chain integration into internal and external aspects (Morash and Clinton, 1998; O'Leary-Kelly and Flores, 2002; Pagell, 2004; Petersen *et al.*, 2005; Ragatz *et al.*, 2002; Stank, Keller and Daugherty, 2001; Stanley and Wisner, 2001). At the same time, external integration consists of supplier and customer integration (Droge *et al.*, 2012). At present, an increasing attention is being paid to the strategic importance of the term of integration among firms and customers (Martinelli and Tunisini, 2019), as customers are being acknowledged as a proactive component within the supply chain (Prahalad and Ramaswamy, 2004; Zhao *et al.*, 2015) and thus, customer integration has been seen as one of the most relevant dimension that influences competitive performance (Stank, Keller and Closs, 2001).

Customer integration refers to "*the degree to which a firm can collaborate with its major customers to structure its inter-organizational strategies, practices, procedures and behaviors into collaborative, synchronized and manageable processes to fulfill customer demands*" (Zhao *et al.*, 2015, p. 163). Certainly, this includes different types of flows such us information, service and materials; the services and materials flows going forward from firm to customer and the information flow back from customer to firm (Frohlich and Westbrook, 2001; Narasimhan and Carter, 1998). Also, it is about the level of coordination between firms and their customers in making decisions related to activities such as demand forecasting and production planning (Piprani *et al.*, 2020). Therefore, customer integration is a dimension of the main and broader construct of supply chain integration, and refers to the level of collaboration and integration of customers and manufactures. In achieving this, both parties

work together and coordinate different aspects regarding inventory, production, demand estimation, tracking or product delivery (Wong *et al.*, 2011).

Thus, this study focuses on customer integration or the degree to which a firm join forces with its key customers, to frame its inter-organisational plans, strategies, activities, processes and behaviours into cooperative, coinciding and controllable processes for responding to customer requests (Huo, 2012; Zhao *et al.*, 2011). Customer integration includes sharing information, as well as the planning, coordination and control of any material, part or finished goods at the operational and strategic levels (Stevens, 1989). Process synchronisation is a critical activity in customer integration (Zhao *et al.*, 2008).

Since customer integration requires a clear understanding of all interactions between a customer's business and the firm's products and processes (Wisner *et al.*, 2008), the firm is obligated to devote attention and resources to these activities, in order to help the customer improve its competitive standing (Yu *et al.*, 2013). Also, it requires involving customers in decisions related to the products sold by the firm (Pagh *et al.*, 1998), and includes the methods and strategies applied achieve to better coordination between the trading partners (Frohlich and Westbrook, 2001). In this paper, we posit that customer integration is composed of two dimensions: integration *with* customer and integration *by* customer. The first dimension refers to different links comprising the degree of connection of the firm with its main customers by means of information networks, the automation of customer orders or the rate of recurrence of contacts with major customers. The second dimension refers to the level to which major customers share Point of Sales (POS) information and demand forecast with the firm.

Customer integration increases by sharing information between customers and organization, and improves the relationship and organization efficiency (Hamilton-Ibama and Ogonu, 2021). Integration with customers using an integration system enables customers to check the status of their orders at any time, whereby customer feedback can be collected to improve efficiency and reduce errors. Meanwhile, integration by customers through clear processes and procedures allows firms to understand customers' needs quickly, so that they can establish an optimized corresponding design and production to reduce waste time in product repair and improve customer satisfaction (Yu *et al.*, 2021).

Lau, Yam, *et al.* (2010) explained integration by customer through information sharing with organization and mentioned the importance of customer feedback to organizations. Customer feedback, with all the information associated with operations such as inventory, will strengthen the relationship and enhance supply chain performance.

Integration with customer and integration by customer help in reducing inventory costs for companies, accelerating the design and production of products through shortening the cycle of new product launches, and lead to lower transactional costs for the firm (Yu *et al.*, 2021).

3.2. Firms' Relationship Commitment in the Supply Chain

The study of those aspects that affect the relationships among firms has been conducted under the relationship commitment perspective. Scholars such as Morgan and Hunt (1994) have revealed that firms' relationship commitment has positive effects on integrative cooperation. Relationship commitment has been defined as "*an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is, the committed party believes the relationship is worth working on to ensure that it endures indefinitely*" (Morgan and Hunt, 1994, p. 23) and as "*an implicit or explicit pledge of relational continuity between exchange partners*'' (Dwyer *et al.*, 1987, p. 19). Nevertheless, in considering the supply chain management perspective, the effect of relationship commitment

on customer integration is scarcely dealt with (Zhao *et al.*, 2008) and the literature recognizes that more reseach is needed (Martinelli and Tunisini, 2019; Yu *et al.*, 2013).

Relationship commitment relates to the willingness of a firm to sustain a long-term relationship (Shukla *et al.*, 2016) and thus invest its resources physically and financially as well as achieve association, loyalty and mutual obligation with the partners (Morgan and Hunt, 1994; Padin *et al.*, 2017). In doing so, committed firms in supply chain settings make efforts to establish, preserve and develop a stable, long-term reciprocal relationship (Anderson and Weitz, 1992; Høgevold *et al.*, 2020; Moore, 1998; Zhao *et al.*, 2008) or "*an enduring desire to maintain a valued relationship*" (Moorman *et al.*, 1992, p. 316).

In this context, Ellram (1995) mentioned that relationship commitment is a mutual relationship between firms over an extended period of time, which follows the concept of reciprocal commitment and sharing. Firms should commit to long-term relationships with customers, rather than embracing a transaction short-term approach (Berry, 1983; Dwyer *et al.*, 1987; Gil-Saura *et al.*, 2009; Gronroos, 1990; Morgan and Hunt, 1994; Sheth and Parvatiyar, 1995). Indeed, Berry *et al.* (1991) established that mutual commitment is the main basis for relationships. Thus, commitment is ''*an essential part of successful long-term relationships*'' (Gundlach *et al.*, 1995, p. 78) and represents a vital aspect of relationships within the supply chain (Høgevold *et al.*, 2020; Kumar *et al.*, 2017; Zhao *et al.*, 2008; Zhu *et al.*, 2018). For instance, the development of such technology-based solutions as customer relationship management (CRM) helps in managing customer relationships.

Therefore, we consider firms' relationship commitment as a significant element in the study of supply chain integration. Indeed, when there is relationship commitment between firms, supply chain members can integrate and coordinate business processes and goals with their key customers (Chen and Paulraj, 2004). Also, maintaining a committed and long-term relationship with customers is easier when the values and principles of the customer are standardized by the firm, as this long-term relationship is primarily grounded on the similarity of values with customers to confirm the obligations of each party.

4. HYPOTHESIS DEVELOPMENT

4.1 Firms' Relationship Commitment, Integration with Customer, and Integration by Customer

The Commitment-Trust Theory (Morgan and Hunt, 1994) assumes that the presence of trust and relationship commitment is essential to successful relationship marketing. Firms' relationship commitment helps in optimizing the level of integrated information with customers and improves learning for requisite new technologies and procedures, as well as enhancing firms' supply chain cooperation and flexibility (Joshi and Campbell, 2003). A common topic arises from different streams of relationship research, as the parties involved consider relationship commitment a key attribute for developing and maintaining valuable outcomes (Yuan *et al.*, 2020; Zhao *et al.*, 2011). Firms' relationship commitment supports marketers in a supply chain by (1) working at protecting relationship investments by cooperating and integrating with exchange partners, (2) focusing on the expected long-term benefits of staying with existing partners instead of attractive short-term alternatives, and (3) viewing potentially high-risk activities as conservative on account of the credence that their partners will act honestly. Therefore, when firms' relationship commitment is present, it produces outcomes that encourage and support productivity, efficiency and effectiveness. In essence, firms' relationship commitment leads directly to cooperative and integrative behaviors that contribute

to the success of this relationship marketing approach (Morgan and Hunt, 1994; Sheth *et al.*, 2015).

Relationship commitment between customers and firm from a supply chain perspective requires a willingness to make short-term sacrifices to maintain stable and successful relationships (Yeh *et al.*, 2020). This relationship stability makes customers and organizations trust each other, enabling them to achieve long-term benefits (Yang *et al.*, 2008). Building trust through committing to the relationship allows organizations to achieve better integration by customer and with customer. Committing to supply chain relationships refers to the willingness to invest in the relationship between partners, such as customers and organizations, by sharing information or technology so that both partners can benefit more from their relationship commitment (Shin *et al.*, 2019).

Thus, firms' sustained relationship commitment with customers is expected to improve customer integration, reduce costs, improve the satisfaction and loyalty of customers, and finally, increase the firm´s revenue (Graça *et al.*, 2021; Sheth and Parvatiyar, 1995). Therefore, if firms increase their relationship commitment, their integration and coordination with clients will also be more likely to occur.

In addition, we argue that firms' integration with customers is a necessary requirement for integration by customers, because the firm must demonstrate its trust in the customer, so that, in reciprocity, the customer wants to share its information with the firm.

Based on the abovementioned considerations, we propose the following hypotheses:

H1. Firms' relationship commitment relates positively to integration with the customer.

H2. Firms' relationship commitment relates positively to integration by the customer.

H3. Firms' integration with the customer relates positively to integration by the customer.

4.2 Integration with Customer, Integration by Customer, and Supply Chain Performance

In the field of strategic management, the Resource Based View (RBV) of the firm assumes that the key resources a company possesses can determine its competitive advantages, as they enable developing strategies that can enhance efficiency or effectiveness (Barney, 1991, 2012). In particular, for these resources to be valuable, they should not be owned by many of the rival firms, should not be easily imitated nor substituted by other alternatives. If a firm is in this situation, it has the potential to create sustainable competitive advantages. Moreover, the RBV view focuses on specific relational resources, exchanged through the supply chain networks, which are important for improving information sharing as well as enhancing supply chain performance (Cheng, 2011).

Considering this view, customer integration is a key resource, as it enables the firm to integrate the information that customers have, and take competitive advantage of it (Danese and Romano, 2013; Huo, 2012; Lau, Tang, *et al.*, 2010). Particularly customer integration allows the firm to penetrate into the customer organization and increase its awareness and understanding of their products, market, culture and organisation. This information provides the firm with the capability to respond to customer needs and requirements in a more precise and targeted manner.

A mutually integrated partner relationship with customers enhances the demand for information accuracy, which expedites the design of the product and reduces the time to plan production and the obsolescence of inventory, leading firms to become more efficient and quick

to respond to customer requirements (Flynn *et al.*, 2010). According to He *et al.* (2014), a close relationship between customers and manufacturer, offers strong support for improving the accuracy of demand information, which, as indicated, reduces a manufacturer's product design and production planning time and inventory obsolescence, allowing it to be more responsive to customer needs. That is, by deeply penetrating and integrating with customers, the firm is able to better understand and forecast customers´ needs, and thus improve its planning and efficiency. This leads to lower inventories, lower inventory cost, lower transportation cost and improved service (Vanpoucke *et al.*, 2017), ultimately enhancing supply chain performance.

Stank, Keller and Closs (2001) confirmed that customer integration is the most important dimension of supply chain integration that influences competitive performance. Most researchers have indicated that there are positive effects of customer integration on different performance measures such as customer satisfaction (Yu *et al.*, 2013), service performance (Droge *et al.*, 2012; van der Vaart and van Donk, 2008), new product performance (He *et al.*, 2014), responsiveness levels (Flynn *et al.*, 2010), flexibility (Wong *et al.*, 2011), cost (Jacobs *et al.*, 2007) and sales and market growth (Kim, 2009).

Integration with customers is the main aspect of successful customer relationships and customer satisfaction. Integration with customers includes many activities, such as keeping close direct contact with them, managing customer complaints, and solving customer problems in an integrated manner, which secures long-term customer relationships and increases customer satisfaction (Sousa, 2003; Tan and Handfield, 1998). Firms integrated with their customers have the ability to solve customers problems quickly. Integration with customers by sharing knowledge allows firms to better understand customer needs and increase customer loyalty (Rudyanto *et al.*, 2021). Integration with customers includes the process of planning, implementing, and evaluating relationships between firm and customer. There are many activities representing integration with customers, such as communication capabilities, delivery of services or products to customers locally and globally. To integrate with customers, firms essensially need to share product information, deal with customer orders, interact with customers closely to manage their requests, share order status during scheduling, and the product delivery phase (Belvedere and Grando, 2017).

Integration by customer helps firms to enhance their supply chain performance. Customer sharing of demand information helps the firm to understand its needs, improve customer demand forecasts, and customer engagement in collaboration. Firms can provide higher quality products at lower cost, be more flexible and rapid regarding customer requests, and efficiently manage product design through customer feedback and integration by customers (Flynn *et al.*, 2010). Firms can reduce operating costs, create greater value and react to market changes rapidly if customers integrate openly with them. The integrated relationship between both customers and firms enhances demand information accuracy, and also minimizes product design and planning time (Homburg and Stock, 2004).

On the basis of the foregoing considerations and our consideration of firms' customer integration formed by two dimensions, we propose the following hypotheses:

H4. Firms' integration with the customer relates positively to supply chain performance.

H5. Firms' integration by the customer relates positively to supply chain performance.

5 METHODOLOGY

5.1 Sample and data collection

For the empirical analysis, we collected data on firms across different industries in the Egyptian market including manufacturing, wholesaling, retailing, and shipping services. Egypt presents a strong and competitive industrial market with a high diversity of industries and products, and has never been studied in the field of supply chain management. Therefore, the selection of this market seems very interesting. Further, and in order to increase the variance observed and to reinforce the generalization of results, we used a multi-industry sample (Morgan *et al.*, 2004). The initial population comprised 1,264 firms.

The data used in this work was collected using a questionnaire survey developed after a comprehensive review of the literature. The questionnaire was sent to a total of 1,264 senior managers with different responsibilities (logistics, purchasing, marketing and operations), in the field of supply chains, who were contacted in different forms: e-mail, telephone or personal interview. After eliminating non-valid questionnaires, a total of 205 were considered usable, which implies a 16.22% response rate, which is reasonable according to Menon *et al.* (1996), Powell (1992) and Tootelian and Gaedeke (1987), who indicated that the average top management response rates are between 15% and 20%, considering that low response rates are typical of industrial mail surveys (Paxson, 1992) due to the "survey-fatigue" among the population of business professionals in the context of supply chain management (Schoenherr *et al.*, 2015).

Also, we analyzed the nonresponse bias by testing for significant differences between early respondents and late respondents, i.e. first 75% returned questionnaires versus late 25%, following Armstrong and Overton (1977) and Weiss and Heide (1993). To do so, t-tests on these subsamples were performed, considering several firm characteristics (such as total number of employees and total number of IT employees), yielding no significant differences (at the $p<.05$ level). Thus, the results indicate there is no problem with the nonresponse bias.
Finally, we also tested for common method bias, considering the Harman one-factor test (Podsakoff and Organ, 1986) which showed that this was unlikely to be significant, as a single general factor did not account for most variance in an exploratory factor analysis (only 32.76%). In addition, we also considered the method indicated by Podsakoff *et al. (*2003), in which a new model loading on one factor with all the observed variables was re-estimated. This test again yields unacceptable results (Chi-square=4,175.025; df=406; RMSEA=0.213; CFI=0.104). In sum, the common method bias appears not to be an issue for this study.

5.2 Measures

The variables considered in this study were operationalized considering previously-validated scales and were measured on five-point Likert scales (1=totally disagree; 5=totally agree). First, the Relationship Commitment scale contains 6 items based on Zhao *et al. (* 2008).

Second, as we have already indicated, customer integration was decomposed into two dimensions: integration *with* customer and integration *by* customer. Studies that empirically examine customer integration utilize Flynn *et al.* (2010) scale, using 11 items. However, this scale integrates two types of items: one measures the degree to which the focal firm shares available inventory and production plans with their major customer, while the second type collects items that measure the degree to which its major supplier shares point of sales information and demand forecasts with the focal firm. We employ this scale, using the corresponding items to measure each dimension.
Third, to measure the Supply Chain Performance, we used 10 items, considering Qrunfleh and Tarafdar (2014) approach.

The items of variables used in the conceptual model (shown in Figure 1) are reported in Table 1.

Insert Table 1 about here.
Table 1: Items Used.

6 ANALYSIS AND RESULTS

6.1 Univariate and Multivariate Statistics of Variables

The univariate statistics of each variable shown in Table 2 are as follows: (i) number of respondents, (ii) mean value per item of variable and average per variable, (iii) standard deviation per item of variable and average per variable, (iv) variance explained per item of variable and average per variable, and (v) factor loading per item of variable and average per variable. Table 1 displays satisfactory univariate statistics of variables in accordance with proposed rules of thumb (Hair *et al.,* 2006).

Insert Table 2 about here.
Table 2: Univariate and Multivariate Statistics of Constructs.

Table 2 reports satisfactory non-response bias consisting of 205 valid responses out of 205 on each item of variables. The mean values per variable range from 2.95 to 3.53. The standard deviations range from 0.86 to 0.95. Table 1 also reports that the variance explained across variables range from 0.60 to 0.84. The factor loadings per variable range from 0.77 to 0.92. Consequently, the outcome of used variables exceeds the proposed rules of thumb (Hair *et al*., 2006) of 0.5 for average variance explained, and 0.7 for average factor loading, per variable. In conclusion, the univariate and multivariate statistics reported in Table 2 are satisfactory.

6.2 Reliability and validity

The requirements for content validity were established by means of the literature review, and the opinions of experienced researchers and managers. As evidence of discriminant validity, convergent validity, and scale reliability, we estimated CFA and followed Gerbing and Anderson (1988) (see Table 3). The results indicate an overall chi-square of 53.46 with 29 degrees of freedom. Also, we examined six measures of fit, normed fit index (NFI=0.95), relative fit index (RFI=0.95), incremental fit index (IFI=0.98), Tucker-Lewis index (TLI=0.97), comparative fit index (CFI=0.98), and root mean square error of approximation (RMSEA=0.06). All the results are inside conventional cut-off values and allow us to consider the model acceptable (Vandenberg and Lance, 2000).

Insert Table 3 about here.
Table 3: Confirmatory Factor Analysis: summary measurement results, validity, and reliability

The individual loadings displayed are high, significant and all items are related to their specified latent variables and hence, indicate convergent validity (Anderson and Gerbing, 1988). In addition, we observed squared inter-construct correlations and variance explained to evaluate discriminant validity. The results show that the explained variance per construct in the items is higher than the inter-construct correlations (Fornell and Larcker, 1981), indicating that discriminant validity is adequate for all latent variables. Finally, we followed (Bagozzi and Yi, 1988) to assess reliability. The results show acceptable levels of composite reliability (CR) for all the constructs considered, as it exceeds the recommended level of 0.60. Namely, relationship commitment (CR=0.90), integration with customer (IWC=0.87), integration by customer (IBC=0.91) and supply chain performance (SCP=0.86). Also, the level of average variance extracted of the latent variables exceeded the recommended level (0.50). Consequently, the measurement model specified for the considered variables is adequate.

Insert Table 4 about here.

Table 4: Squared Inter-Construct Correlations and Summary Statistics

6.3 Testing of hypotheses

Structural equation modelling was employed to test the hypothesized relationships between the different constructs at the same time, by using the maximum likelihood method. In doing so, the results of the hypothesized model which includes all the direct effects are shown in following table.

Insert Table 5 about here.

Table 5: Structural Equation Modeling: model fit summary and parameters estimates

The fit indexes (see Table 5) also indicate that the model is acceptable (Vandenberg and Lance, 2000): chi-square=53.46 (df=29); NFI=0.95; RFI=0.93; IFI=0.98; TLI=0.97; NFI=0.98; RMSEA=0.06.

The results of the hypothesis testing proposed in our model offers support for H1, indicating that firms' relationship commitment positively relates to integration with the customer, with an estimated coefficient of 0.19 ($p<0.05$), and for H2, meaning that firms' relationship commitment is also positively related to integration by the customer, with an estimated coefficient of 0.26 ($p<0.00$). In addition, H3 is also supported, so integration with the customer positively relates to integration by the customer, with an estimated coefficient of 0.61 ($p<0.00$). Lastly, the results also support H5, indicating that integration by the customer is positively related to firms' supply chain performance, with an estimated coefficient of 0.46 ($p<0.00$), but H4 is not supported, so there is no evidence supporting the positive relationship between integration with customer and firms' supply chain performance (0.04; p=0.68).

Finally, the next table 6 presents direct, indirect, and total effects of RC on SCP, tested by means of bootstrapping, considering the different paths through IWC and/or IBC. As shown, direct effect (0.061, p=0.54) and indirect effect through IWC (0.010, p=0.44) are not significant. However, indirect effects through IBC (0.105, $p<0.001$) and through IWC-IBC path (0.043, $p<0.05$) are significant. Therefore, total indirect effect of RC on SCP through IWC and IBC is significant (0.158, $p<0.001$), resulting in the total effect of RC on SCP also being

significant (0.219, $p<0.01$), due to the indirect effect (in this case, a full mediation effect through IWC and IBC altogether).

Insert Table 6 about here.

Table 6. Direct, Indirect, and Total Effects of RC on SCP through IWC and/or IBC (SEM): parameter estimates and bootstrap confidence intervals

To sum up the results regarding the hypothesized model, the next figure shows the conceptual relationships, the model fit measures, and the estimated parameters.

Insert Figure 2 about here.

Figure 2: Model fit summary and parameters estimates: graphical description

7 DISCUSSION

The results of this study make a significant contribution to the SCM literature by considering the effect of firms' relationship commitment on their supply chain performance in a supply chain management setting. Overall, the results show that firms' relationship commitment can significantly enhance firms' supply chain performance through customer integration dimensions. Our findings should enhance the managerial understanding of those circumstances enabling SCI firms to obtain superior supply chain performance.

Overall, our results support the disaggregation of customer integration into two dimensions: IWC and IBC. Also, our findings endorse the position that firms' relationship commitment is a basic mechanism for easing the integration process of firms with their customers. Finally, the relationship between IBC and firms' supply chain performance was supported, but not that between IWC and the firm's supply chain performance. However, our findings show the importance of IWC and IBC altogether, since relationship commitment requires the presence of both dimensions to influence supply chain performance, thus revealing the presence of a full mediation through the path "integration with customers – integration by customers".

Thus, this study offers a number of contributions. First of all, it supplements the existing literature dealing with relationship commitment, customer integration, and supply chain performance. Indeed, in supply chain research, firms' relationship commitment has not been addressed comprehensively and no studies have considered the mediating effect of customer integration between firms' relationship commitment and their supply chain performance.

Secondly, this research provides a detailed study of the indirect effects of customer integration on firms' supply chain performance. A disaggregation of customer integration construct in two dimensions was created, which allows us to better understand the way in which firms' relationship commitment influences their supply chain performance. Thus, the empirical results offer evidence that can elucidate the heterogeneous results in prior research analyzing the relationship between customer integration and performance.

Finally, this work is the first to study these relationships in the Egyptian market by considering data from various different industries. The characteristics of this market, including a fast-growing economic base and a unique national culture, ensure that our findings offer rich managerial implications for both supply chain practitioners and researchers.

This study investigated the link between relationship commitment and customer integration, including integration with customer and integration by customer in Egyptian supply chains. The results indicate that relationship commitment has a positive impact on integration with customer and integration by customer. This is consistent with Zhao *et al.'s* (2008) finding that relationship commitment has a very positive effect on customer integration. Integration requires transaction-specific asset investment. Therefore, partners should even "fight and militate" for a longer-term orientation, as well as harmony and conformity in their values, norms of behavior and managerial approaches. Our findings confirm that integration with customer and integration by customer can be achieved more easily when partners have a fundamental desire and willingness to continue a relationship, due to conformity in values and norms. Accordingly, organizations should establish and maintain standard relationship commitment with their customers, to improve integration and supply chain performance.

In addition, our results indicate that commitment to customers and considering them as a team member is related to future cooperation between both parties by sharing important and critical information and integrating inter-organizational processes. Sharing of market information from customers and enhancing the level of communication can be achieved easily through relationship commitment and similarity of values. These findings confirm the importance of commitment in developing a stable long-term relationship.

Our results confirm that integration by customer has a positive impact on supply chain performance. This result is in contrast with Piprani *et al.* (2020), who could not confirm the positive influence of customer integration as one dimension on supply chain performance dimensions such as costs, customer service, and flexibility. However, our result related to integration with customer and supply chain performance was not supported, matching the results from Piprani *et al.* (2020). According to our results, supply chain performance can be improved through integration by customer, where process becomes more visible, as information flows smoothly and quickly along the network, therefore increasing the ability of firms to respond quickly. However, although integration with customers is not related to supply chain performance, our findings show that integration with customers is necessary for creating integration by customers, which is in turn relevant, so that relationship commitment can be related to supply chain performance.

8 RESEARCH IMPLICATIONS

A principal research implication of this study is in relation to the growing body of research on the supply chain partnerships between firms and their customers, by exploring and testing how firms' relationship commitment influences the integration with key customers and by key customers, as well as the outcome of firms' supply chain performance. It advances previous research on customer integration (Droge *et al.*, 2004; Flynn *et al.*, 2010; He *et al.*, 2014; Yu *et al.*, 2013), by decomposing the construct of customer integration into two dimensions and exploring the processes through which firms' relationship commitment indirectly affects their supply chain performance.

To the best of the authors' knowledge, the dual constructs of customer integration (i.e., integration with and by customers) has rarely if ever been tested, as mediators between firms' relationship commitment and their supply chain performance. This study therefore establishes a basis of measurement characteristics that can be applied to future research. In particular, the measurement characteristics of the dual construct of customer integration can be applied in the research context of other supply chain constructs, such as collaboration, coordination, and cooperation, as well as specific investments in supply chain partnerships.

In extension, a customer perspective on supply chain partnerships based on the hypothesized relationships in the conceptual model offer an additional approach to examining the role of firms' relationship commitment on their supply chain performance. A customer perspective can shed light on the role of integration with sellers and integration by sellers between firms' relationship commitment and their supply chain performance in supply chain partnerships. It thus provides additional scholarly relevance and value, opening a window for assessing the match between seller and customer perspectives on firms' relationship commitment and their supply chain performance in supply chain partnerships.

Although many studies have considered the potential benefits for firms of relationship commitment in the supply chain context (Anderson and Weitz, 1992; Moore, 1998; Zhao *et al.*, 2008), there are few studies that specifically consider the impact of firms' relationship commitment on their supply chain relationships and subsequent supply chain performance. Yet, a large body or research agrees on the fact that this area deserves further attention (He *et al.*, 2014; Yu *et al.*, 2013).

This study provides interesting insights into how, with this missing variable of firms' relationship commitment, prior research inconsistencies can be explained. Also, the present work deeps on the role of learning to establish the relevance of this variable. While considering the relationships in integration with and by customers, and supply chain performance, this study highlights the relevance of customer integration in connecting firms' relationship commitment to their supply chain performance. In doing so, this work enhances our comprehension and enriches the supply chain integration literature.

The overall positive and significant relationship between (i) relationship commitment and customer integration, (ii) integration with customer and by customer, and (iii) customer integration and supply chain performance fit with the theoretical background of this study. Closer customer integration and relationship commitment are significantly correlated with better supply chain performance.

9 MANAGERIAL IMPLICATIONS

An overall implication for management, based on the results reported in this study, is that relationship commitment, integration by and with the customer as well as supply chain performance are interconnected. In fact, another overall implication for management is that they are interrelated within supply chains. Supply chain performance is the outcome, while the others are direct and indirect precursors.

The results offer empirical proof that integration of the customer relates to integration by customers, as well as the duality of integration by and with the customers, which in turn relates to supply chain performance. In consequence, the research model provides empirical proof that commitment, integration, and performance are indeed crucial in supply chains.

The results suggest several specific managerial implications. A crucial one is the need for integration with customers and integration by customers, as a dual approach in supply chain partnerships to enhance the effect of firms' relationship commitment on their supply chain performance. The work stresses the importance of building lasting supply chain relationships in which relationship commitment between firms, integrated and coordinated business processes and goals with key customers, are all needed to enhance their supply chain performance.

The integration with and by customers may improve the information flows, thus having a direct effect on production scheduling, inventory control, and delivery plans of supply chain members. This enables a balance of postponement and speculation regarding activities and resources by members of the supply chain, as well as managing and optimizing the bullwhip effect.

In dynamic and competitive marketplaces, firms involved should be very much interested in understanding the important role of customer integration, as developing and maintaining customer integration helps to gain superior supply chain performance, given the mediating effect of this issue in relationship commitment along the supply chain performance path. Also, managers need to pay attention to relationship commitment and its role in directly improving customer integration, and indirectly improving supply chain performance.

Today's supply chain managers should pay substantial attention to how supply chain integration helps their firms improve supply chain performance. From a practical standpoint, this study offers managers some evidence of the benefits of firms' relationship commitment as an antecedent of customer integration.

By improving firms' relationship commitment and customer integration, they can attain greater competitive advantages. Therefore, managers should pay particular attention to relationship commitment in order to exploit all performance potential of which customer integration is capable. The results indicate that when a firm achieves relationship commitment and customer integration this will have a positive impact on their supply chain performance.

Also, the results of this study provide with some valuable insights for manufacturing firms and organizations, retailers, wholesalers, and freight forwarders. These serve as guidance to concentrate the company´s resources in order to achieve better customer integration. Investing in relationship commitment will improve customer integration, which in turn raises the level of information exchange and generates greater levels of knowledge creation and learning. According to our results, as customer integration improves supply chain performance, it can be affirmed that a firm´s competitive advantages can be increased through learning and knowledge creation.

10 CONCLUSIONS AND SUGGESTIONS FOR THE FUTURE

This study contributes, in the context of relationship commitment, to shedding light on the fact that integration with customers precedes integration by customers in supply chains. Ultimately, it also sheds light on the indirect effects on supply chain performance and contributes to verifying the validity and reliability of a two-dimensional construct of customer integration, taking into consideration the perspective of focal firms as well as of customers. The measurement properties of the conceptual model provide a foundation for extending existing theory, and complement the results reported in previous studies on supply chain partnerships. Specifically, the study contributes to verifying the measurement and structural properties between firms' relationship commitment, integration with customers, integration by customers and their supply chain performance.

We therefore conclude that the results reported are both relevant to and valuable for existing theory and previous studies, as well as supply chain management. In particular, we conclude that the verified role of integration with and by customers between integrated information technology and supply chain performance is a major scholarly finding.

This study inevitably has its limitations, all of which provide opportunities for further research.

One suggestion is to test the conceptual model in another supply chain context, in order to

assess the generality of the results. In particular, further research in a business context that differs from the one in this study, would provide an opportunity to verify the validity and reliability of the measurement and structural properties of the conceptual model. Another opportunity is to verify the generality of the results reported in other business settings. Specifically, a customer perspective on the conceptual model also offers an opportunity for further research, such as the role of integration with and by sellers, between firms' relationship commitment and their supply chain performance in supply chains.

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Insert Figure 1 about here.

Figure 1: Conceptual model: graphical description

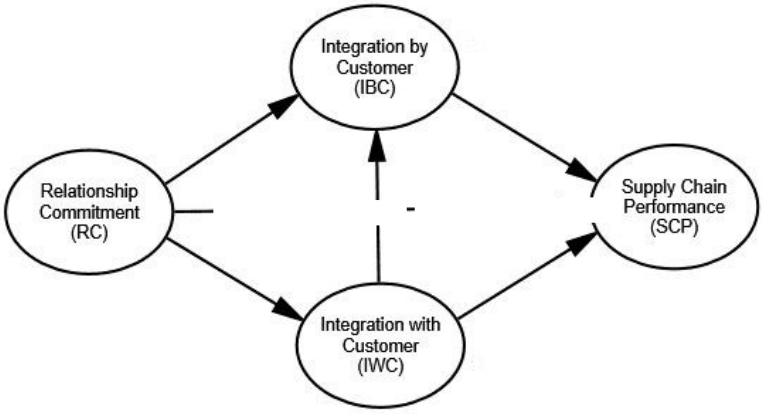

Figure 2: Model fit summary and parameters estimates: graphical description

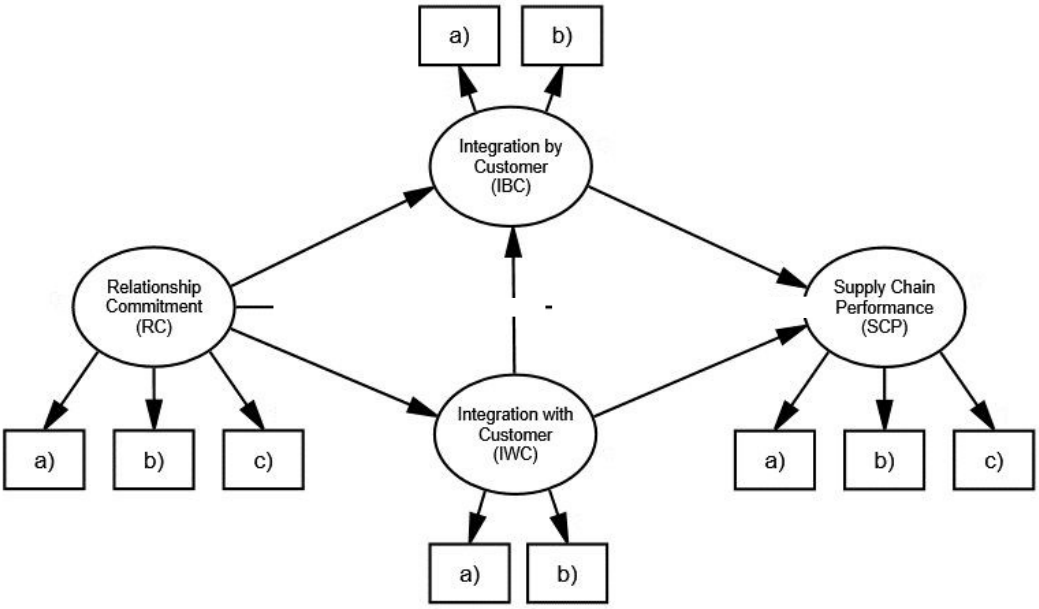

Table 1: Items Used.

RELATIONSHIP COMMITMENT
a) The reason we prefer this customer to others is because of what it stands for, its values.
b) During the past year, our company's values and those of the major customer have become more similar.
c) What this customer stands for is important to our company.
INTEGRATION WITH CUSTOMER (IWC)
a) We share our available inventory with our major customer.
b) We share our production plan with our major customer.
INTEGRATION BY CUSTOMER (IBC)
a) Our major customer shares Point of Sales (POS) information with us.
b) Our major customer shares demand forecast with us.
SUPPLY CHAIN PERFORMANCE
a) Is able to rapidly adjust capacity so as to accelerate or decelerate production in response to changes in customer demand
b) Is able to rapidly introduce large numbers of product improvements / variation
c) Is able to handle rapid introduction of new products

Table 2: Univariate and Multivariate Statistics of Constructs.

Construct	N	Mean		Std Deviation		Variance Explained		Factor Loading		Cronbach's Alpha
		Item	Average	Item	Average	Item	Average	Item	Average	
Relationship Commitment										
a)	205	3.57		0.87		0.61		0.78		
b)	205	3.52		0.84		0.86		0.93		
c)	205	3.49	3.53	0.88	0.86	0.62	0.70	0.79	0.83	0.88
Integration with Customer (IWC)										
a)	205	2.91		0.97		0.69		0.83		
b)	205	2.99	2.95	0.92	0.95	0.77	0.73	0.88	0.86	0.84
Integration by Customer (IBW)										
a)	205	3.18		0.89		0.81		0.90		
b)	205	3.26	3.22	0.92	0.91	0.87	0.84	0.93	0.92	0.91
Supply Chain Performance										
a)	205	3.10		0.99		0.50		0.70		
b)	205	3.09		0.87		0.51		0.72		
c)	205	3.27	3.15	0.91	0.92	0.78	0.60	0.88	0.77	0.80

Table 3: Confirmatory Factor Analysis: summary measurement results, validity, and reliability

Variable	Standardized Loadings
RELATIONSHIP COMMITMENT	CR=0.90; AVE=0.70
INTEGRATION WITH CUSTOMER	CR=0.87; AVE=0.73
INTEGRATION BY CUSTOMER	CR=0.91; AVE=0.84
SUPPLY CHAIN PERFORMANCE	CR=0.86; AVE=0.59
MODEL FIT SUMMARY	
Chi-square=53.46, df=29; p=0.00, CMIN/df=1.84; NFI=0.95; RFI=0.93; IFI=0.98; TLI=0.97; CFI=0.98; RMSEA=0.06	
Notation: *CR: Composite Reliability; AVE: Average Variance Extracted*	

Table 4: Squared Inter-Construct Correlations and Summary Statistics

CONSTRUCT	1	2	3	4
1. RELATIONSHIP COMMITMENT (RC)	**1.000**			
2. INTEGRATION WITH CUSTOMER (IWC)	0.04	**1.000**		
3. INTEGRATION BY CUSTOMR (IBC)	0.14	0.43	**1.000**	
4. SUPPLY CHAIN PERFORMANCE (SCP)	0.06	0.23	0.12	**1.000**
VARIANCE EXPLAINED	**70%**	**73%**	**84%**	**59%**
COMPOSITE TRAIT RELIABILITY	**0.90**	**0.87**	**0.91**	**0.86**

Table 5: Structural Equation Modeling: model fit summary and parameters estimates

HYP.	RELATIONSHIPS	Reg. Coeff.	p-value	TEST
H1	*RC → IWC*	0.19 *	0.01	*Supported*
H2	*RC → IBC*	0.26 ***	0.00	*Supported*
H3	*IWC → IBC*	0.61 ***	0.00	*Supported*
H4	*IWC → SCP*	0.04 *ns*	0.68	*Not Supported*
H5	*IBC → SCP*	0.46 ***	0.00	*Supported*

MODEL FIT SUMMARY
Chi-square=53.46, df=29; p=0.00
NFI=0.95; RFI=0.93; IFI=0.98; TLI=0.97;
CFI=0.98; RMSEA=0.06

Note: * p <0.05; ** p<0.01; *** p<0.001; *ns*=not significant

NOTE:
RC: RELATIONSHIP COMMITMENT; IWC: INTEGRATION WITH CUSTOMER; IBC: INTEGRATION BY CUSTOMER; SCP: SUPPLY CHAIN PERFORMANCE.

Table 6. Direct, Indirect, and Total Effects of RC on SCP through IWC and/or IBC (SEM): parameter estimates and bootstrap confidence intervals

PATH	Unstand. Coeff.	LCI	UCI	*p*	test
Direct Effect (DE)					
RC → SCP	**0.061**	-0.119	0.223	0.537	*ns*
Indirect Effects (IE)					
IE1: RC → IWC → SCP	**0.010**	-0.028	0.075	0.437	*ns*
IE2: RC → IBC → SCP	**0.105**	0.038	0.232	0.001	***
IE3: RC → IWC → IBC → SCP	**0.043**	0.006	0.123	0.021	*
IET: RC → IWC → IBC → SCP	**0.158**	0.071	0.300	0.000	***
Total Effect (TE)					
TE: RC → SCP	**0.219**	0.053	0.382	0.006	**

***Note**: * $p < .05$; ** $p < .01$; *** $p < .001$; *ns*: Not Significant. *Bootstrap confidence intervals derived from 5,000 samples (95% level of confidence).*
RC: RELATIONSHIP COMMITMENT; IWC: INTEGRATION WITH CUSTOMER; IBC: INTEGRATION BY CUSTOMER; SCP: SUPPLY CHAIN PERFORMANCE.