

Impact Of Behavioral Antecedents On Supply Chain Performance: Intervening Effect Of Knowledge Sharing And Internal Integration

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Abstract

In the present modern age of business, where market demand has changed rapidly, the supply chains need to develop unique capabilities to compete. Supply chains should be integrated to allow fast information sharing among the supply chain members. For this, individual participants of the supply chains (along with the firms) are critical. Supply chains can gain a competitive edge by considering employee intentions toward integrating behaviors (the behavioral antecedents). The efficient work performed by each individual in the supply chain would ultimately improve the internal integration and the performance of the whole supply chain. This study considers a model relating behavioral antecedents to the supply chain performance based on 200 managers working in Pakistani firms. Our results provide significant support showing that behavioral antecedents and internal integration positively impact the supply chain performance. This study also provides empirical evidence that knowledge sharing does not moderate the relationship between behavioral antecedents and internal integration. It points to the fact that managers in developing countries are reluctant to share their skills with others and provide an opportunity to train employees to work for supply chain goals.

Keywords: Behavioral Antecedents, Knowledge Sharing, Internal Integration, Supply Chain Performance, Partial Least Squares, Structural Equation Modeling.

JEL Classification: M1-Business Administration; M11-Production Management; M14 Corporate Culture

1. Introduction

Recent decades have seen a shift towards supply chain management performance instead of firm performance (Nugraha & Hakimah, 2019). The businesses hence, seek to enhance supply chain performance (SCP) instead of just firm performance. Several studies have supported this by suggesting that the focus of any business should be on SCP as the performance of the supply chain has directly linked to a firm's performance (Abdallah, Abdullah, & Mahmoud, 2017; Nugraha & Hakimah, 2019; Susanty, 2018). Supply chains require a unique approach to achieve a competitive edge and advancement in a dynamic worldwide market (Saleh & Roslin, 2015). The study of employees' behavior at work could be considered an approach to supply chain excellence due to the dynamic nature of human behavior (Kumar et al., 2020). The behavioral factors of supply chain relationships play a vital role in enabling internal integration (II) and sharing information within the supply chain (Saleh & Roslin, 2015). Employee behaviors at work affect their relationships and are considered an effective supply chain asset (Maulina & Natakusumah, 2020).

Relationship behavioral antecedents like trust and affective commitment have been considered essential to improving SCP (Tsanos, Christos, & Zografos, 2016). Bai, Liu, and Zhou (2020) studied how trust among employees impacted performance and explored the other relational intra-firm antecedents that ultimately affect the supply chain's performance, i.e., employees' commitment to each other or the firm and interaction among employees for exchange of information. These behaviors have sequential nature (Tsanos et al., 2016), and thus, trust acts as a vital element to retain commitment (Dey & Mukhopadhyay, 2018) and relational attachment among employees (Ehrhardt & Ragins, 2019). Kumar et al. (2020) examined the influence of behavioral factors in the supply chain management perspective and asserted that human behavior at work influences SCP. This study focuses on the significant behavioral elements of the relationship among employees that impact the supply chain progress. Supply chain goals could never be achieved without the full participation of each employee (Maulina & Natakusumah, 2020).

Castillo, Mollenkopf, Bell, and Bozdogan (2019) suggested that micro-level aspects of internal integration could be investigated by exploring individual-level behaviors that initiate firm actions concerning supply chain performance. Yu and Huo (2018) proposed that studying the interactive influence of integration (II) on SCP could be valuable research. Dey and Mukhopadhyay (2018) stated that different behavioral factors like trust and commitment could be investigated and their impact on knowledge sharing (KS). The performance of organizations could be improved by considering the influence of II and KS on different performance characteristics (Panahifar, Byrne, Salam, & Heavey, 2018).

Rehman, Hafeez, Aslam, Maitlo, and Syed (2020) stated that knowledge sharing is "The degree to which managers coordinate with each other within a firm." On-time and correct information sharing is critical and essential in an organization because it helps workers, firms, and supply chains improve effectiveness (Donate & Guadamillas, 2011). It suggests that the presence of knowledge sharing attitude in the firm would affect its performance and, thus, could be used as a

moderator in this study (Mittal, 2015). Stakeholders of a supply chain need a relational procedure (e.g., trust, commitment, relational attachment) to strengthen employee integration and diminish unexpected events arising from uncertainties in a supply chain. Extensive knowledge sharing among departments has an underlying supposition for good II within a firm (Jajja, Chatha, & Farooq, 2018; Zhang, Lettice, Chan, & Nguyen, 2018). Specifically, we seek an answer to the following research question in this research:

RQ: what are individual-level behavioral antecedents' (BAs) that impact the SCP?

1.1. Research Gap

The essence of this research is that an individual's behavior impacts the overall improvement of the supply chain. The affective commitment among managers within the supply chain must exist to make the supply chain successful. In addition, employees' attachment to their work underpinned their effective involvement in accomplishing organizational goals. All these statements suggest that the gap exists in the literature to investigate the effect of behavioral antecedents, i.e., factors that affect the performance of an organization, on SCP, which need to be filled to improve integration among employees of organizations and the supply chain performance.

2. Theory and Hypotheses

Extensive studies have required governing mechanisms of exchanges inside the supply chain to investigate employee relationships. A proper suitable theoretical foundation is necessary to study these relationships. The difference between the relationships is that their formation is done for some specific exchanges, such as an exchange of transaction cost, relational elements (Trust), and exchange of information & resources (Tsanos et al., 2016). There are significant characteristics of discussions in the supply chain, which may contain exchanges based on short-term to continuous, long-haul relationships and maybe market or relational based (Tsanos, Christos, Zografos, & Harrison, 2014).

2.1. Theoretical foundations

Relational Exchange Theory (RET), presented by Ring and Van de Ven (1992), gives a solid foundation to support this relational point of view. As the general hypothetical premise in this examination, RET proposes that five relational standards, for example, integration, cooperation, and sharing of knowledge, are components of a governance tool that can replace official agreements that are considered the behavior of supply chain members involved in exchange ethically. It gives a solid foundation to understand and interpret behavioral dynamics for exchanges among employees in the supply chain. Suppose integration with a firm is considered the cause of linkage among organizational functions and practices into a highly successful business model (Chen, Daugherty, & Landry, 2009). In that case, there is a chance present for RET theory to examine the relationship between BA and SCP (Tsanos et al., 2014). The Resource-Based View (RBV) theory is also linked to the current study. Barney (1991) presented RBV theory gives justification that the knowledge sharing and trust among the employees within the supply chain

improved the SCP. Droge, Jayaram, and Vickery (2004) stated that individual capabilities could provide valuable results in a supply chain performance where all employees work together, use the same resources and work for the same firm. RBV theory emphasizes the efficient use of internal resources to attain a competitive edge in the supply chain. At the same time, RET theory focuses on creating inter-organization assets and strengthening inter-firm relations that are challenging for competitors to copy (Tran et al., 2019). These assets can be categorized as managing relationships and knowledge sharing within the supply chain.

2.2. Behavioral Antecedents (BA)

Behavioral antecedents are factors that influence the behavior of employees to efficiently complete anticipated work (Kumar et al., 2020). When individual relationships are viewed as integration and coordination among managers and supply chain members, commitment and trust are the most frequently observed attributes (Tsanos et al., 2016). We have chosen trust and commitment as behavioral antecedents from literature, justified its presence under the theory of RET, and broadened the view by adding a managerial construct of relational attachment that has never been investigated for examining the BA among employees within the supply chain. Behavioral antecedents contain sequential nature among each other. Trust leads to the development of commonly shared rules among the supply chain that gives positive results. The trust-commitment theory given by Morgan and Hunt (1994) demonstrates regarding BA that employees' commitment has been caused because of the presence of trust among supply chain members. Bajwa, Kitchlew, Shahzad, and Rehman (2015) stated that relational attachment is theoretically linked with trust, including care, concern, and close emotional attachment among employees. Relational attachment is a good factor in predicting consequences related to an employee's attachment with a firm (Ehrhardt & Ragins, 2019).

2.2.1. Trust

Trust among supply chain members infers increased faith among them to do and fulfill the business agreement. It helps the members work to benefit all supply chain members and prevent them from behaving selfishly. Trust has been reflected as a fundamental element in the supply chain (Abdallah et al., 2017). Trust has been considered a significant behavioral antecedent studied in literature as a sole factor for improving the SCP (Panahifar et al., 2018). Trust changes supply chain and organization relationship perspective of focusing on short term benefits to the long term. In joint and singular ventures with repeated exchanges in relationships (Tsanos et al., 2014), trust empowers supply chain employees to loosen up their interests in possible negative consequences of their decisions because of their limited objectivity (Rehman et al., 2020).

2.2.2. Affective Commitment

Affective commitment is defined as "Commitment that employee established with the firm and has built on emotional bonds with the business mainly through positive work background" (Jaros, 2007). Affective commitment and performance of employees have positively correlated, and the employees would exert additional power to attain the supply chain objective. A study conducted

by Orłowski, Murphy, and Severt (2017) about the organization was that with ambiguity inside the firm's management and unclear direction, employees were less committed to their work. So, to make their employee more committed, managers and CEOs should work together to improve management and set goals to be accomplished. Supply chain members attained satisfaction from the exchange procedure for relationships described by affective commitment (Tsanos et al., 2014). Limited empirical research has been found in the literature about the individual relationship's commitment, positively impacting affective commitment and integration (Casimir, Lee, & Loon, 2012).

2.2.3. Relational Attachment

Relational attachment (RA) is defined by Ehrhardt and Ragins (2019) as a "Psychological bond that reflects employees' perceptions of their connection to others, along with their effective feelings of closeness, commitment, and attachment to others at work." It is an employee's feeling of nearness, association, and attachment with others at the workplace. Employees felt this when experiencing the fulfillment of their desires through their arrangement of work relationships (Ehrhardt & Ragins, 2019). A detailed study was done on RA by Ehrhardt and Ragins (2019), in which a model with significant links between Kahn (2007) and the person-environment fit theory proposed by Muchinsky and Monahan (1987) was integrated to develop the RA model. The study found that employees work with a feeling of thriving, give total effort to work, and are more willing to fulfill organizational goals if they are positively attached, impacting their performance.

2.3. Supply Chain Performance (SCP)

Supply chain performance (SCP) is defined as "the degree to which any supply chain is responsive, i.e., fulfill its end customer needs, ensure product replenishment and on-time delivery." Any organization's vital and critical ambition is to enhance its complete efficiency and performance, irrespective of its industry. The crucial concern for the performance measurement system has to examine the activity outcomes. At the same time, the performance assessment of the supply chain has to identify weak areas that need to control and monitor the processes executed inside the supply chain (Panahifar et al., 2018). SCP has been studied in literature and measured through different methods. SCP monitoring is an effective tool to keep the firms on target and help achieve service excellence and financial stability (S. A. Khan, Mehmood, Iqbal, & Frooq, 2021). Supply chain performance is essential in developing and sustaining a competitive advantage for organizations (Abdallah et al., 2017). Current research has attempted to investigate the impacts of the relationship between behavioral factors (Trust, affective commitment & relational attachment) and SCP (Khalid, Chaudhry, & Aslam, 2020).

2.4. Behavioral Antecedents and Supply Chain Performance

A thorough study conducted by Abdallah et al. (2017) concluded that the relationship among behavioral antecedents, i.e., trust with SCP, exists and is positively significant. A causal relationship among behavioral ancestors should be independently considered (Tsanos et al., 2014). Morgan and Hunt (1994) presented the Commitment-Trust theory, which shows that the

relationship exists between affective commitment and trust. Behavioral factors influence the achievement of organizational goals. It helps to improve supply chain performance which supports the firm to give valuable service to customers (Kumar et al., 2020). Susanty (2018) studied the relationship of SMEs' trust, knowledge sharing, and informal contracts with supply chain performance. The association between behavioral antecedents (trust and affective commitment) and SCP in the logistics industry context in maritime has been examined by Shin (2018). Relational attachment has been identified as a behavioral factor whose impact has not been studied with SCP. Tsanos et al. (2014) suggested that behavioral antecedents affect the coordination among managers in a firm which later affects the SCP, which needs to be examined.

H1. Behavioral antecedents have a positive impact on the SCP

2.5. Internal Integration (II)

Flynn, Huo, and Zhao (2010) termed II as “the extent to which an organization builds its firm’s strategy, defines its practices and processes into harmonized interactive processes so that its members efficiently interact with its suppliers and fulfill their customers’ needs.” The firm’s action and doings of joining and enhancing internal knowledge and resources to develop a knowledge-sharing culture not within the boundaries of individual departments but beyond it. It helps to attain organizational objectives and also assists in external integration. II can be considered a vital source to adequately identify, evaluate, and exploit the information collected from external activities (Koufteros, Rawski, & Rupak, 2010; Zhao, Huo, Selen, & Yeung, 2011). RBV theory states that KS and integration within the supply chain and organizations are resources that exchange can improve SCP (Rungtusanatham, Salvador, Forza, & Choi, 2003; Wiengarten, 2019).

2.6. Behavioral Antecedents and Internal Integration

Tsanos et al. (2014) argued that behavioral antecedents act as a building block for integrating and binding supply chain members together in a long-term relationship. An affective commitment was considered a significant success element to develop predominant internal integration, and trust act as a root to nourish such commitment (Tsanos et al., 2016). RBV argued that trust is a factor that is required for integration within a firm (Wiengarten, 2019). Behavioral characteristics that have been examined suggest that the need to develop a relationship with supply chain employees has based on their beliefs that II has considered an essential key to enhancing operations and hence, benefits of the supply chain (Wiengarten, 2019). Therefore, a suitable study is required to examine the relationship between II and relational constructs. Panahifar et al. (2018) asserted that an organization’s performance could be improved by exploring the influence of internal collaboration (Internal integration, knowledge sharing) on different performance attributes, i.e., Trust commitment.

H2. Behavioral antecedents have a positive impact on internal integration.

2.7. Internal Integration and SCP

Saeed, Malhotra, and Grover (2005) found that II positively impacts the relationship between firm performance and SCP. Both external and internal integration is essential for performance, but some studies focus on II to enhance the performance of the supply chain (Feng, Li, Sun, & Wang, 2013; Tarifa-Fernández, de-Burgos-Jimenez, & Cespedes-Lorente, 2019). A high degree of internal integration among departments led firms and their supply chain toward high performance (Feng et al., 2013). Moreover, the research found that II has a significant and direct effect on competitive organizational performance, improving the SCP (Huo, Ye, Zhao, & Shou, 2016). Both internal and external integration impacts have been studied together with SCP (Huo et al., 2016; Jajja et al., 2018; Tarifa-Fernández et al., 2019; Wiengarten, 2019). It led to a gap in the literature that an impact of II on SCP would have independently been studied (Yuen, Wang, Ma, Lee, & Li, 2019). Yuen et al. (2019) asserted that II positively and significantly influences SCP.

H3: Internal Integration positively impacts the SCP

2.8. The mediating role of Internal Integration

If the focal firm has better II among its departments, its performance would be improved, and hence, the whole SCP would improve (Flynn et al., 2010). One of the essential factors to achieve II among employees working within the supply chain is the value of inter-organizational partnerships (Geng, Mansouri, & Aktas, 2017). This partnership may be composed of certain behavioral factors, like commitment, support, trust, and relational capability (Min, Mentzer, & Ladd, 2007). Some variables could be used as antecedents, and the mediating effects of SCI (II) could be investigated among those antecedents and SCP (Alfalla-Luque, Marin-Garcia, & Medina-Lopez, 2015). If integration is used to develop linkages among managers and supply chain members, an opportunity exists to use RET theory to investigate the effect of behavioral factors and II (Tsanos et al., 2014). Jajja et al. (2018) have examined the mediating role of II among customer integration and supply chain risk moreover studied the mediating impact on supplier integration and supply chain risk. In this study, the mediating role of II has been studied among behavioral antecedents and SCP. This mediating role of II has not been studied in prior literature.

H4: Internal Integration positively mediates the relationship between behavioral antecedents and SCP.

2.9. The moderating role of Knowledge Sharing

Donate and Guadamillas (2011) argued that on-time and correct information sharing among managers is critical and essential because it helps managers and firms improve effectiveness. If managers have a relational attachment with their work and colleagues, trust each other, and commit to achieving the firm's goal they will share knowledge timely and correctly (Ehrhardt & Ragins, 2019; Tsanos et al., 2016). The intensive share of expertise inside a firm provides a competitive edge and is the most needed behavior, leading to an effective firm's operational performance (Dey & Mukhopadhyay, 2018) and the improved SCP. It is considered a benchmark to maintain

relations within a supply chain or a firm that requires the commitment of all members and managers to share data (Kumar et al., 2020). Tsanos et al. (2014) stated that KS is considered a single factor influenced by behavioral antecedents in RET theory. If managers within or outside a firm and supply chain members share knowledge accurately, frequently, and regularly, they can better work together and improve SCP. Hence, KS affects the relationship between BA and II. Over the past few years, the moderating role of KS has been investigated. One such research is done by Mittal and Dhar (2015) to study the moderating effect of KS on employee creativity and creative self-efficacy. In the current research, a moderating role of KS is studied between behavioral antecedents and SCP.

H5: Knowledge Sharing positively moderates the relationship between behavioral antecedents and II.

The Proposed model in figure 1 explains the impact of BA on SCP composed of four variables. BA (Independent variable) impacts SCP (Dependent variable) moderated by KS and mediated by II adapted by the organizations to improve the performance of their firms.

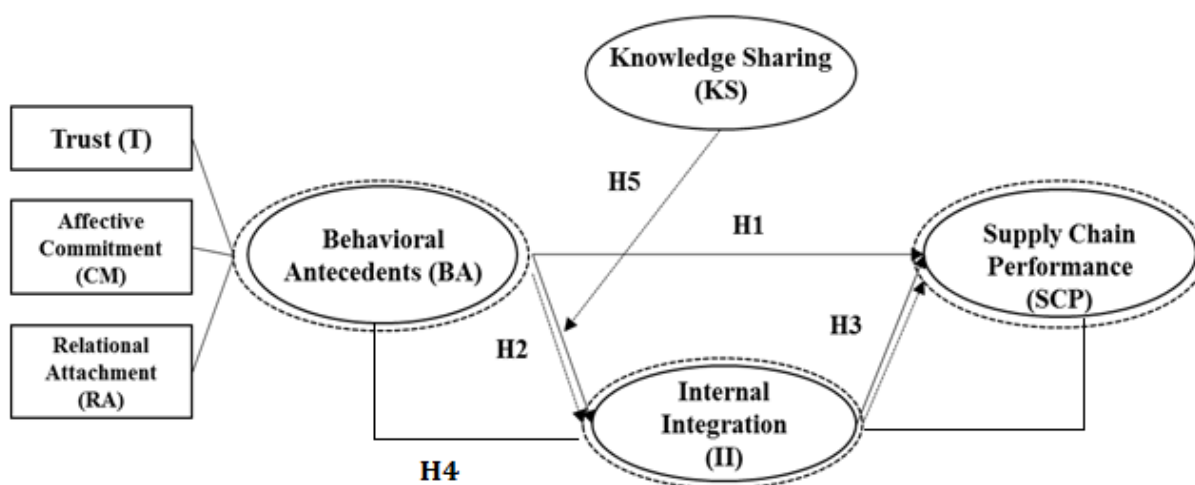


Figure 1: Hypothesized Model

3. Methodology

In this study, the population was Pakistan’s manufacturing and service organizations irrespective of industry, size, geography, and ownership. Unit of analysis was managers working in the production /product design /research & development /supply chain /distribution /procurement departments of manufacturing and service industries. The questionnaire was used as a survey instrument, a set of preliminary known questions, and respondents were acquired to fill it. Before starting the data collection process for investigation, a pilot test has performed for feasibility analysis of the questionnaire from 20 respondents. Cross-sectional data has been chosen for the current study due to time constraints. A snowball sampling technique was selected to collect data because potential respondents were diverse, and identification of all respondents will become

problematic. The questionnaire was sent to around 750 respondents, out of which only 150 responded. Again, a questionnaire was sent to the remaining 600 non-respondents, and multiple emails after a few weeks and get back 115 responses were used for analysis purposes. A total of 265 responses were obtained, out of which 200 were useful, representing the overall response rate of 35.3%. Respondents who had to respond early and those who reacted late were compared on control variables using an independent sample t-test on SPSS. Control Variables for this research were age, experience, education, job level, annual sales, no. of employees, and gender. T-test generated a result that tested items have no statistically significant differences, and hence, non-response bias would not create a problem. The data showed that 87% of respondents were male, 13% were female, 62.5% respondents were from manufacturing firms and 37.5% from service firms, 18% respondents were from lower management, 57% from Middle management, and 25% were from top management.

4.1 Measures

Trust: Measurement scale for trust adopted from the study of Mayer and Gavin (2005). The scale has composed of 8 items measured on a seven-point Likert scale 1= “strongly disagree” and 7= “strongly agree.” This individual-level scale was adopted to get data regarding the extent of trust managers have in their colleagues. Sample items of this scale are “If I had my way, I would let my colleagues have complete influence over issues that are important to me.”

Affective Commitment: Six items with a seven-point Likert scale were adopted to represent AC from Casimir et al. (2012) research. The scale measured the extent of the commitment of managers to their firm. “I would be happy to spend the rest of my career in this organization.”

Relational Attachment: RA construct requires managers to answer how much they have a relational attachment with other colleagues. The scale adopted from Ehrhardt and Ragins (2019) contained six items. A seven-point scale of 1 as “strongly disagree” to 7 as “strongly agree” was used to collect data. A few things out of all six are “When thinking about my relationships with others at work, I feel Close to them.”

Internal Integration: Two individual-level scales were adopted from two relevant studies by Alfalla-Luque et al. (2015) and Huo et al. (2016). The internal integration scale consists of eight measuring items, out of which six items were adopted from Alfalla-Luque et al. (2015), and the last two were adopted from Huo et al. (2016). This scale asked managers how much internal integration has been implemented in their organizations and how easily departments coordinated. A few sample items are “Departments in the firm frequently communicate with each other.”

Knowledge Sharing: Five items were adopted for this construct from the research performed by Casimir et al. (2012) with a seven-point scale from “1 as strongly disagree to 7 as strongly agree”. Items in scale were acquired from managers regarding the extent of knowledge sharing in their

organization. This scale includes items like “I willingly share my information with colleagues within my department.”

Supply Chain Performance: The scale was adopted by Autry, Williams, and Golicic (2014). The measuring scale for this construct is composed of 6 items and calculated on a seven-point Likert scale “1 (Very low) to 7 (very high)”. This scale asked managers about their organization’s supply chain performance. Some scale items are “The extent to which firms in your supply chain enjoy cost efficiencies based on high sales volumes.”

4. Results

Outliers were detected by using the chi-square test. All respondents had a probability of less than .001 and were considered outliers. Ten items have a p-value of less than .001, which means they are all outliers. After deleting those ten outliers, we left with a 190-sample size. The deletion of outliers was done to improve the results of the study. The normality was accessed through skewness and kurtosis, histogram and normality of residuals plots. All 25 items showed the skewness value < -2 , and the kurtosis value was $-.044$ to 2.150 . All kurtosis and skewness values were below the limits of ± 2 and ± 7 (Curran, West, & Finch, 1996). VIF is a measure of linear relationships among predictor variables (Field, 2018, pp. 600-610). VIF was estimated for this study to have a value of less than 1.97, which is less than the threshold value of 10 (Bowerman & O'connell, 1990). So, multicollinearity was not an issue for this study. Confirmatory factor analysis (CFA) assessed the scale’s factorial validity and reliability through Smart PLS. PLS algorithm was calculated on Smart PLS software with a weighting scheme of the path and the maximum iteration of 300. The composite reliability values for each independent and dependent construct were well within the acceptable limit of greater than 0.7, indicating data reliability.

5.1 Hypotheses Testing

The analysis of PLS-SEM models consists of three steps a) Firstly, relationships among constructs are specified b) secondly, relationships among constructs and their observed variables are made c) At last, weight relationships are made upon which hypotheses are estimated (Braunscheidel & Suresh, 2009). Ringle, Wende, and Will (2005) developed software for SmartPLS for setting up and executing the PLS-SEM model. Independent variable BA was measured as a second-order formative construct. First-order constructs on BA (AC, T, and RA) had reflective measures, whereas the relationship between first and second-order constructs was formative. Using the repeated indicators approach, indicators were loaded on first-order latent variables and second-order construct BA. VIF (Multicollinearity) value for the second-order construct was less than the threshold value of 10, so collinearity didn’t influence the interpretation of the standardized path’s coefficients and their associative significance level. Bootstrapping was executed with 5000 samples with default options and a significance level of 0.05 (Hayes, 2013).

At a significance level of 0.05, all required path coefficients were significant. The relationship between BA and SCP (H1) was moderately strong (0.370) and in the expected direction. Also, BA significantly affects the SCP; thus, H1 was supported, which is that BA positively influences the

SCP. It proposed that managers' trust, commitment, and relational attachment enhance the SCP. The result also supported H2, as the relationship between the BA and II was significant and robust (0.427) in the expected direction. It leads us to the result that internal integration would exist if managers had a trust, commitment, and relational attachment to their work. The path coefficient for the relationship between II and SCP was 0.402 and significant. Hence, H3 was also supported. It suggested that II positively affects the SCP, and the existence of II in a firm would enhance the whole SCP. f^2 values for every latent variable were assessed, and among all, BA has the most substantial effect with a 0.230 value on II which has a medium effect size according to threshold values (0.35, 0.15, and 0.02 as large, medium, and minor effects) described by Cohen (1988).

H4 hypothesis posited that the mediation relationship was tested by generating coefficients of indirect effects through a bootstrap with a sample size of 5000. This test contained a confidence interval of 95% with corrected bias. H4 was supported because the direct influence among predictor constructs BA and outcome construct SCP was statistically significant, and both indirect effects of II on SCP & BA on II were also substantial. As the direct and indirect effects were substantial, II partially mediated the relationship between BA & SCP. The specific indirect result of mediation was also substantial. H5 was not supported, i.e., KS positively moderates the relationship among behavioral antecedents and II. II has an interaction effect of 0.045, and the impact of BA on II was 0.427. So, for the average level of KS, the relationship between BA and II was positive. Simple slope analysis concluded that the relationship between BA and II increases by one time the magnitude of interaction effect (0.427+0.045) for higher values of KS and decreases with the same magnitude for lower values of KS. But the interaction effect has a non-significant result with a confidence interval (-0.077 - 0.166) and a small f^2 value of 0.003. Also, the indirect path coefficient of BA to II through mediator was 0.055 and non-significant. The following table shows the path coefficients and results of all hypotheses.

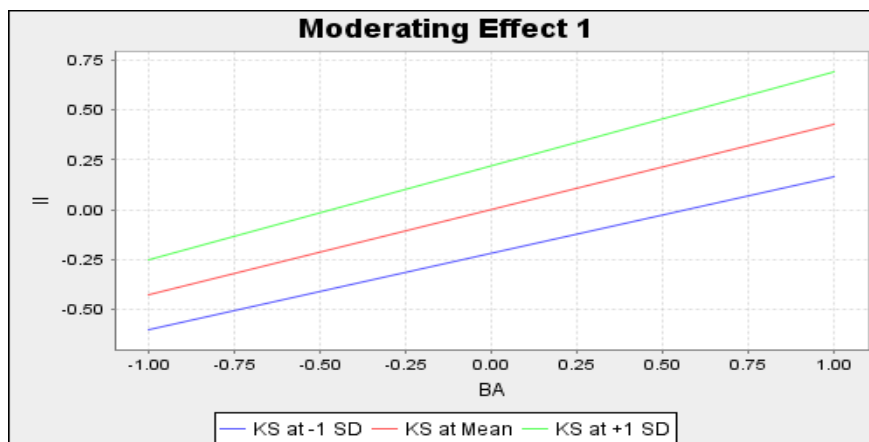


Figure 2: Moderating effect of KS

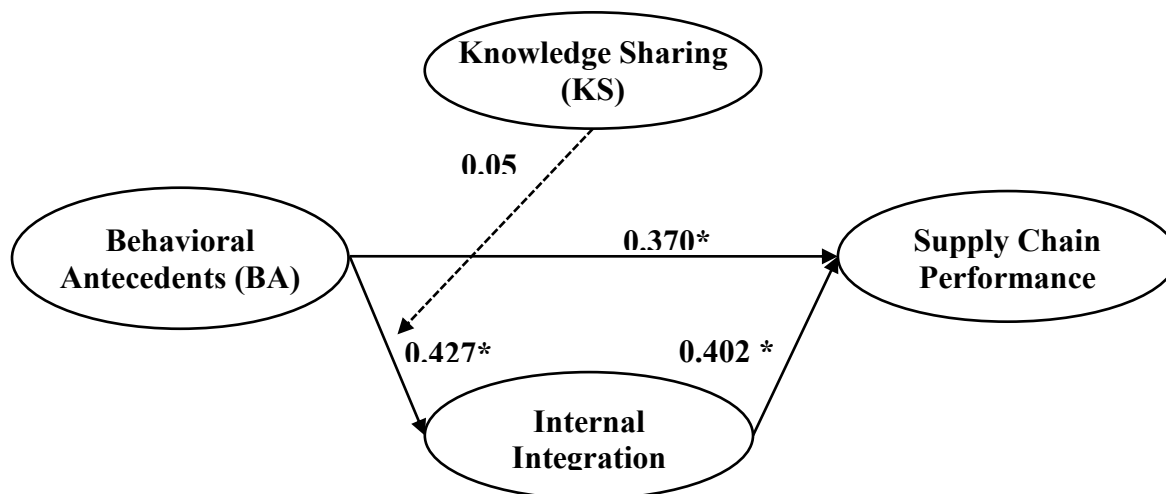


Figure 3: Results of Structural Model

Table 1: Results of Proposed Hypothesis

| Hypothesis | Standardized Path Coefficients | T-Value | P-Value | Results |
|------------------------|--------------------------------|---------|---------|---------------|
| H1 BA → SCP | 0.370 | 5.479 | 0.000 | Supported |
| H2 BA → II | 0.427 | 6.690 | 0.000 | Supported |
| H3 II → SCP | 0.402 | 5.260 | 0.000 | Supported |
| H4 BA → H → SCP | 0.172 | 4.546 | 0.000 | Supported |
| H5 BA → KS → II | 0.055 | 1.738 | 0.082 | Not Supported |

5. Discussion

Companies are now facing problems in making their supply chains more profitable and achieving any competitive advantage by applying something different in their supply chain to enhance SCP. This research throws light on a new perspective of measuring supply chain performance through individual-level behavioral factors. The primary purpose of this research was the influence of individual-level relationship behavioral factors on the overall SCP. Trust, affective commitment, and relational attachment have been used as behavioral factors due to their sequential nature. The

primary concern for this research was to make an integrative supply chain, where the performance of each employee affects the performance of the whole firm. The impact of behavioral antecedents on SCP has been studied through the mediating effect of internal integration, and the moderating effect of KS has been studied among BA and SCP (Kadir, Shoukat, Naghavi, & Jamaluddin, 2021). Limited research has been done in Pakistan on examining individual behavior in the supply chain context. Generally, upper management overlooked the importance of employees for a firm and its supply chain. Ehrhardt and Ragins (2019) developed and examined the relational attachment model and found that organizational performance improves when employees get positively attached at work and trust each other. Our study confirms that relational attachment among managers will enhance work performance and positively influence the SCP. The outcome of this hypothesis has indirectly been supported by the research of Krishnan, Geyskens, and Steenkamp (2016), which asserted that the higher value of affective commitment and trust leads to a lower value of behavioral uncertainty.

Our result of H2 has been supported by Saleh and Roslin (2015), in which qualitative research was done by interviewing food manufacturers and found a significant effect on supply chain relational capital (Trust, Commitment, socialization) and internal integration. BA has the most substantial impact on II among all hypothesis results, with a path coefficient of 0.427. Yuen et al. (2019) studied trust and commitment as critical success factors of relationship management, and their influence was assessed on internal integration. The relationship found a significant and positive impact between both and asserted that these factors make the supply chain more integrative where more information will be shared inside the supply chain. As a result of the high level of trust, intensive data regarding processes and work will be shared inside the firm (Yeung, Selen, Zhang, & Huo, 2009). Employee commitment significantly influenced the linkage with II (Alfalla-Luque et al., 2015). H2 outcome emphasized that behavioral relationship factors (AC, T, and RA) among employees strongly affect a high level of II.

The outcome of the current study was compatible with previous research (Flynn et al., 2010; Huo et al., 2016). Internal integration makes all the departments connected and operates as a unified process. It enables an employee to improve their department operations at the firm level. On-time exchange of information within-firm allows it to react to changes in the marketplace and fulfill customers' needs accurately, thus making the supply chain more responsive and improving its performance (Zhang et al., 2018). The positive impact of both external and internal integration was significant on SCP (Yuen et al., 2019). Zhang et al. (2018) found substantial results between II and firm performance and argued that firm performance ultimately enhanced the performance of the supply chain. A predominant practice of II in the supply chain improves progress and makes it difficult for competitors to follow their practices.

The result of H4 was supported by Yuen et al. (2019), in which a positive and significant direct impact was found among critical factors (trust, commitment as relational management) and SCP. Moreover, II factors have a substantial effect on SCP and critical factors. Hence, II partially mediates the relationships between critical factors and SCP. Also, there is an indirect and

significantly positive relationship of II with performance and hence, fully mediates the linkage among predictor and outcome variables. Zhang et al. (2018) explored the mediation effect of II among internal trust and SCP and found that internal trust has an insignificant impact on SCP. But II acted as a mediator and made the relationship significant. Therefore, II mediates the correlation between internal trust and SCP. Trust among employees of the firm reinforces the commitment toward their work and organization, and employees getting attached has become an underlying assumption for improvement of SCP. Implementing internal integration practices ultimately improves relational behavior among employees and SCP (M. M. Khan, Ahmed, & Khan, 2021). The results of H5 suggested that the relationship between BA and II increases by one time the magnitude of interaction effect for higher values of KS and decreases with the same magnitude for lower values of KS. But the interaction effect of moderation has a non-significant result, and the indirect path coefficient of BA to II through a mediator is also non-significant. So, we have sufficient evidence to conclude that KS did not act as a moderator on the relationship between BA and II.

Managers may be reluctant to share their skills with others due to competition. The previous research has found links among T, AC, and KS. KS within the supply chain might set and boost trust among employees. The associations between knowledge-sharing trust and affective commitment have been studied (Dey & Mukhopadhyay, 2018). Extensive knowledge sharing among departments has an underlying supposition for good II within a firm (Feng et al., 2013; Jajja et al., 2018; Zhang et al., 2018). The current hypothesis has also been supported by the RBV theory (Barney, 1991). This study will support supply chain researchers to recognize why affective commitment, trust, and relational attachment among the employees are essential. The outcomes of current research also recommended that the high level of affective commitment and relational devotion among employees has equally critical for improving integration, not just the high level of trust as described in the literature (Saleh & Roslin, 2015; Yeung et al., 2009; Zhang et al., 2018). A study on knowledge sharing as a moderator in the supply chain context contributed to the existing literature as limited research has been found which inspects the moderating effect of KS within the supply chain perspective.

5.1. Theoretical implications

The current research adds a few implications for the supply chain literature. Limited research has been done on internal integration, and previous research has been done chiefly on supply chain integration (SCI) as downstream and upstream integration (Alfalla-Luque et al., 2015; Ataseven & Nair, 2017; Flynn et al., 2010). This research enlightens the researcher's understanding of the importance of internal integration in SCP improvement. In earlier research, integration impact has mainly been studied on a) firm or organizational performance, b) financial performance c) operational performance. Relationship behavioral factors have previously been studied to see their effect on supply chain business partners and buyer-supplier relationships in the supply chain context (Saleh & Roslin, 2015; Tsanos et al., 2016; Tsanos et al., 2014; Yuen et al., 2019). It is

proposed that trust, commitment, and relational attachment among managers would enhance the SCP and organizational performance because organizational performance is linked with SCP (Nugraha & Hakimah, 2019). Our research finding relates to the research of Shin (2018), which examined the effect of trust and Commitment on SCP, where trust significantly impacts the SCP, but AC has an insignificant impact on SCP. This study is also consistent with the study of Susanty (2018), in which trust and SCP relationships were examined for SMEs of batik to see whether trust and SCP positively linked with each other. The data analysis for this hypothesis gives a significant result that suggests that increased trust among suppliers of SMEs in batik would result in the maximum progress in SCP.

5.2. Managerial Implications

The research gives insight into practitioners working in organizations or supply chains to know that individual relationship behavioral antecedents increase the SCP. The development of progressive techniques and methods that allow and encourage employees to build trust, affective commitment, and relational attachment. As “the poorly motivated employees negatively influenced the productivity and performance”(Cantor & Jin, 2019). For manufacturers, highly committed employees will be better able to tackle complex tasks as they will be willing. The result of the third hypothesis provides evidence that a significant and progressive correlation exists between the II and SCP. It provides managers with the knowledge about II that internal integration can enhance the SCP. This research enables the stakeholders to understand the benefits of investment in establishing the information-sharing practice within the firm. Implementing software related to information sharing within departments makes valuable knowledge of possible financial investments, inventory status, demand and order status, production schedules, etc., visible to all departments within a firm. It further contributes to managers’ knowledge by asserting that trust, affective commitment, and relational attachment among employees strengthen the internal integration practices within the supply chain. Management must set some rewards to persuade integration and cooperation among functional departments to drive method advancement.

But current research provides empirical proof to conclude that KS didn’t have a moderating effect between behavioral antecedents and internal integration. It contributes to the manager’s knowledge that employees working in a developed country like Pakistan are reluctant to share their skills with others and enlighten that employees are not sincere with the organization, which allows them to persuade employees to work for supply chain goals instead of their focus on excellence. Moreover, behavioral antecedents among employees will free managers from giving attention to employees but devote maximum effort to value addition activities.

5.3. Limitation and Future Research

Regardless of managerial and theoretical perspective contributions, this research also has limitations that lead to future research scope. First, there is a problem of generalizability because of time constraints and limited resources; data were collected from a few manufacturing and service industries in Pakistan. This research cannot suggest that all other industries in Pakistan

have similar problems and practice similar activities. This research was conducted to gather information from developing countries. Hence, the results of this study cannot be generalized to all developing countries. Detailed research on this issue must be done for all industries of Pakistan and other countries to generalize the outcome of this research.

Secondly, due to budget and time restrictions, a cross-sectional research study has been selected for current research. Longitudinal data design can be used for a better understanding of causality. Time series data collection provides better insight into casual relationships among latent variables (Bryman, 2015; Walliman, 2015). The moderating role of KS has been investigated among BA and II, and its relationship with organizational performance has been studied in previous literature. Hence the moderating effect of KS could be investigated among BA and SCP in future studies. Three behavioral relationship factors have been studied in this research; other factors like mutual dependence, personal affection, and communication could be investigated in future studies. These behavioral factors could be studied from a green supply chain or sustainable supply chain perspective because the employees' good behaviors with each other's at work help to implement green activities in the supply chain. Other dimensions of commitment could be added to this model, like normative commitment and continuance commitment. The extension in the model could be done by adding external integration among internal integration, and SCP as II acts as a base regarding external integration (Zhang et al., 2018).

6. Conclusion

Current research explores how the behavioral antecedents impact the supply chain performance in the presence of integral integration. It draws results from the empirical data that integral integration of organizational departments is significant because if the integration is missing, the organization may not perform at its utmost level. Another objective of this research was to investigate how the knowledge-sharing behavior of the employees affects the internal integration of the organization's different functions, which further affects the supply chain performance of an organization. In line with the available literature, current research also concluded that the employee's knowledge sharing behavior If employees do not share their knowledge with other colleagues and departments, it will be challenging for an organization to take a holistic approach and make cohesive decisions that are beneficial for both the employees and organization.

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