Exploring the Nexus Between Supply Chain Integration, Integrative Value-Creation, and Firms’ Performance: Mediating Roles of Entrepreneurial Self-Efficacy and Innovation Capability

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ABSTRACT

This research aims to examine the impact of supply chain integration and Integrative value creation on Small & Medium Enterprises performance in Pakistan. We also examined the mediating impact of Entrepreneurial Self-Efficacy and Innovation Capability in these correlations. Innovative Capabilities, Integrative Value-Creation, Entrepreneurial Self-Efficacy, and supply chain integrations in Pakistani Small and Median Enterprises, as well as their impact on company performance, were identified and briefly contested. Hypotheses were investigated using Structural Equation Modelling on research data from 394 Small and Medium Enterprises registered with the Small and Medium Enterprises Regulatory Authority of Pakistan. The quantitative analysis was completed last, followed by a discussion of the findings. The study's findings revealed that there are positive and significant connections between Integrative Value Creation and Firms Performance. The beneficial association between supply chain integration and business success is mediated by innovation capability. Entrepreneurial Self-Efficacy and Firm Performance also played a beneficial mediation influence. The findings are limited to Small Enterprises in Pakistan. Future research could look into the impact of foreign investments on value creation amongst firms as of the growing figure of Internationally-owned Small Enterprises in Pakistan, as well as the perception of unfair competition from these enterprises, this is useful. The findings of these research could have implications with regards to policy implementation on how to encourage domestic and foreign-owned enterprises to collaborate.

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Introduction

Businesses all over the world are tasked with offering trailblazing product and services in order to suit the ever-changing needs of their customers. To accomplish this, however, successful data collecting, processing, storing, and knowledge development based on internal as well as external business contexts are required (Kim 2018). Integrative supply chains have emerged as ideal vehicle for companies to strategically achieve this aim (Yang et al., 2020) It creates one-stop
linkage between diverse parties' communication and information systems, allowing for continuous information sharing (Phan et al., 2020). Numerous empirical studies have found strong link amid supply chain integration and enhanced performance of firms (Munir et al., 2020) Despite these evidences, SMEs in developing countries are incapable to get fully benefitted from supply chains integration due to lack of ICT, management incompetence, and paucity of financial resources (Coffie et al., 2020) As a result, there is a pressing need in justifying the necessity in Pakistani SMEs for active participation in supply chain integration in order to reap its benefits.

Integrative Value-Creation, in addition to supply chains integration, has appeared as a promising business strategy for fostering the involvement of third parties in shaping of products and services (Ranjan and Read, 2016) This collaboration might be between businesses or between customers and businesses. While the former focuses on consumer contributions, the latter collaborates with other firms to create value (Mendoza, 2021). Integrative Value-Creation allows participating companies to produce value while sharing resources and knowledge. Integrative Value-Creation has been shown to have a favourable impact on firm performance through the provision of shared-value services (Shafi, 2020) Value creation is an intentional act of engaging people within a certain ecosystem to produce value in the form of products, services, or processes (Braun et al 2017). In addition, integrated supply chain enterprises are more prospective to engage in inter-firm value creation. As a result, the barriers that prevent SMEs in developing countries from vigorously participating in the practices of supply chain integration may impact on the implementation of integrative value creation strategies. Donkor (2018) the likelihood of SMEs appealing value creation is influenced by the authoritarian qualities of most SMEs owner by unilateral and independent decision making, and the fear of leaking secrets and rivalry of businesses (Donbesuur
et al., 2020) As a result, in order to increase involvement in these methods, an experiential linkage between supply chains integrations, and firm performance in Pakistani SMEs is required.

Furthermore, the objectives of this study is first to examine the impact of supply chain integration and integrative value creation on small & medium enterprises performance Pakistan. Second, to investigate the mediating impact of Entrepreneurial Self-Efficacy and Innovation Capability in correlations of integrative value creation and Supply Chain Integrations.

The current research is considered first of its kind to explore the nexus of Integrations between Supply Chains and Integrative Value-Creation with Performance in SMEs of Pakistan embedding the mediating roles of Entrepreneurial Self-efficacy and Innovation Capability. It enriches the literature by exploring the ways to foster the firm performance through integrative value-creation and supply chain integration and validating the importance of Entrepreneurial Self-Efficacy and Innovation Capability of firms in development and enhancement of firms’ performance compared to previous studies. Moreover, it also offers various theoretical and managerial ramifications, as well as future possibilities. In addition, we investigate the mediating role of innovation capabilities, entrepreneurial efficacy in the linkages between firm performance supply chain integration as well as value creation and integration of supply chains. We address the research questions: How do SC-Integration, integrative value-creation & firms’ performance interact within Pakistani SMEs industry? Do entrepreneurial self-efficacy and innovation capabilities mediates the linkages between supply chain integration and performance?

The outcome of this study revealed that the Performance of Pakistani Small and Medium Enterprises could be positively influenced by Integrative Value Creation, Supply Chain Integration, Entrepreneurial Self Efficacy and Innovative Capability as these have significant positive relationship with firms performance. Moreover, empirical investigations also revealed
that the Entrepreneurial Self-Efficacy and Innovative Capabilities play a key role in mediating the relationship between supply chain integration and firm performance. The remaining sections of the research are listed below. The Literature Review is described in Section 2; the Methodology Adopted is described in Section 3; the Results are discussed in Section 4; and the Discussions are presented in Section 5 and Conclusion and Implementation are presented in Section 6 of the study.

**Literature Review**

**Supply Chain Integration (SCI)**

Supply chain management is a concept based on the integration of essential business operations across the chain, which has a substantial impact on cost, responsiveness, value creation, and customer service, and is a requirement for achieving superior corporate performance and competitiveness (Christopher, 2011). Beheshti et al., (2014) theorize that the deliberate linking of supply chain partners in order to communicate crucial information is known as supply chain integration. about the markets, commodities, consumers, and new impending markets in order to make strategic choices. Any successful external collaboration requires a solid foundation of internal structure, culture, and processes., Companies that have effective internal integration mechanism, can have successful and a favourable environment for integrations with partners, resulting in improved organizational performance (Huo et al., 2014). The importance of integration or synergetic activities in the SC has been well praised in the literature and is recognized as a key source of competitiveness that would otherwise be unavailable (Lambert and Cooper , 2000) In order to attain this integration, organisations must not merely internal integrate functions effectively, but also encompass integration energies to other stakeholders, such as direct customers and direct suppliers, in order to achieve optimal performance. Thus, developing long-term and close working ties for the purpose of resolving mutual issues and planning for the future is required
for efficacious employment of SCM practices in today's hostile market environment, because the chain's performance is dependent on reciprocity relationships among stakeholders, which will be beneficial in cost minimization. (Cao, 2007). Zhao et al., (2015) investigated 195 companies based in China, and the findings show that aligning a company's competitive advantage with allies in supply chain is critical to enhancing financial performance. Specifically, supply chain integration can help a business increase performance by improving customer services, efficiency in internal operations, flexibility in demand, new market and product development, and product creation (Munir et al., 2020). However, Yang et al., (2020) opine that, according to studies, in order for a company to effectively profit from supply chain integration, connection among partners must be appropriately matched with company's strategy for competition. Because each party is oriented toward sustainability and a common goal, it is sometimes for the sake of organisations to establish partnerships using win–win competitive tactic to help concurrently promote every organization's aim and realise the collaboration's full potential benefits (Deshpande, 2012). Their ultimate goal is to supply product and services, information, and money to end customers in an efficient and effective manner by simplifying the value addition process among all stakeholders upstream, downstream, and internally (Schoenherr & Swink, 2012; Qadeer et al., 2020).

Regardless of the benefits derived from supply chain integration agreements, there are possible problems that could jeopardize their effectiveness if not effectively handled. Communication breakdowns, insufficient resources, corporate culture and structure, trust concerns, strategic objectives that aren't aligned, and unresolved conflicts within a company all contribute to supply chain integration partnership obstacles (Fawcett et al., 2012; Hameed et al., 2018). While some of these issues can be traced back to inefficiencies in internal structure of organization, there is also external threats to consider. Most crucially, as with the other issues described earlier, the
possibility of trade secrets being leaked or accidentally disclosing critical information to key opponents becomes a huge challenge (Seebacher and Winkler, 2015). Nonetheless, the advantages of cooperation are compelling enough to motivate management to find a solution to these looming problems. Thus, we hypothesized:

$H_2$: *Supply Chain Integration has positive impact on firm performance in Pakistani SMEs.*

$H_5$: *Supply Chain Integration influences Integrative Value-Creation.*

**Integrative Value-Creation.**

Integrative Value-Creation is an intentional act of engaging people within a certain ecosystem to produce value in the form of products, services, or processes (Braun et al., 2017). It's a type of a business approach centred on the creation and maintenance of mutual value between the company and its customers (Frempong et al., 2020). This is comparable to supply chain integration in that it necessitates a company’s opening up to third parties. (Chakraborty et al., 2014). Despite the fact that the end products of these two methods differ, we anticipate that SMEs engaging in supply chain integration will contribute towards value creation between firms. This is due to the fact that supply chain integration offers low-cost platform for Integrative Value-Creation (Mendoza, 2021).

Various roles can be played by members of a classic value creation ecosystem, like idea generator, designer, or middleman, in order to produce value for all parties involved (Lusch and Nambisam, 2021) The issue of transparency is arising, alike supply chain integration, and members of the partnership must explicitly describe their duties, identities, and prospective contributions to the partnership (Hein et al., 2019). Business to customer platforms, in which the business and both existing and potential customers are involved in the creative process; and business to business platforms, in which firms from the same company collaborate. or other industries collaborate to
generate value for mutual benefit (Chakraborty et al., 2014). Early studies mostly concentrated on business-to-customer (B2C) aspects, leaving business-to-business (B2B) value creation research understudied. (Hein et al., 2019). Previously, organisations battled for resources, consumers market shares, having less concern for collaborative efforts. Though, in order to achieve long-term success, the present trend supports healthy competition and collaboration within an ecosystem (Braun et al. 2017). In order to benefit from a value creation collaboration, organisations must quickly align in order to take advantage of resource integration (Lusch and Nambisam, 2015; Ranjan and Read, 2016). Value creation has been shown to improve organisational performance in areas such as cost savings, resource efficiency, and complementary service marketing. Thus we hypothesized that:

H₁: Integrative Value-Creation has positive impact on firms’ performance in Pakistani SMEs

H₆: Integrative Value Creation affects innovation capabilities of firms in Pakistani SMEs.

Firm Performance

The term "firm performance" refers to both characteristics i.e. (financial & non-financial) of a company. All businesses, regardless of size, location, or service nature, rely on constant firm performance to survive and thrive (Donkor et al., 2018). Financial performance, according to Yu et al., (2016) involves improvements in cost of production, data gathering, and processing, whereas non-financial performances include improvements in relationship with partners. As a result, strategic actions that strengthen these areas, such as supply chain integration and Integrative Value-Creation, are beneficial for organisational performance (Seebacher and Winkler, 2015). Measuring organisational performance is critical for achieving financial and market-oriented objectives, which are not only the foundations of the organization's existence but also important performance themes (Yamin et al., 1999). Despite the fact that studies reveal a correlation between
value creation and performance of firms, just a few people have really grasped the concept (Beheshti et al., 2014) For instance. Rajapathiranna and Hui (2018) opine that the Supply Chain integration has been discovered to help develop a strong relationship between producing and distributing activities, allowing products and services to be supplied more swiftly and efficiently. Manufacturers may leverage reliable information about consumer demands and preferences which means using good supply chain integration, you can speed up delivery process, enhance manufacturing schedules, and decrease inventory obsolescence. (Munir et al., 2020).

Supply chain integration between suppliers and consumers can help manufacturers develop new products faster, improve product quality, flexibility, and innovation, and give their products a competitive edge (Sir, 2012 ; Seebacher and Winkler, 2015). Enterprise performance refers to a company's ability to establish a long-term competitive benefit by utilizing valued, unusual, imitable and non-strategic properties. To this end, a firm's ability to innovate has a substantial impact on the amount of resources used (Le and Lei, 2019). Resultantly, we anticipate that SMEs with strong inventive capabilities will greatly increase their performance. Thus, we hypothesized that:

\[ H_8: \text{Innovation Capability in Pakistani SMEs mediates the relationship between Firm Performance and Supply Chain Integration.} \]

**Entrepreneurial Self Efficacy**

Entrepreneurial self-efficacy is built on the concept of self-efficacy in a larger sense, which emphasizes the relevance of social context, observation, and replication of action in social learning for the formation of self-efficacy belief (Newman et al., 2019). The agency concept assumes that persons interact with their internal and external environments in a reciprocal manner, has theoretical roots in self-efficacy, as well as domain-specific constructs as ESE. As a result, self-
efficacy and its variants reflect an agency mechanism that drives motivation, mental states, and behaviour (Bandura, 1997, Bandura, 2006, Mubarik & Javid, 2015) ESE is found to influence a variety of career choices and performance results, with agency underlying self-efficacy as a crucial theoretical way to studying entrepreneurial actions and beliefs (Frese, 2009). ESE research has incorporated theoretical ideas from a variety of domains, including psychology, career development, and economics, to date. Current research on ESE's antecedents typically focuses on social cognitive theory to explain how ESE develops through mastery experiences, vicarious learning, social persuasion, and physiological circumstances. These paths show how ESE is thought to be influenced by employment and entrepreneurial experience, as well as education and training. The routes can also be used to investigate the cultural and institutional implications on ESE development at the company and macro levels (Drnovšek et al., 2010).

Ajzen (1991) opines that, to understand the establishment of entrepreneurial intentions and entrepreneurial activities such as venture creation and growth, theoretical frameworks for studying the effects of ESE include social cognition theory and the idea of planned behaviour. ESE captures the level of an individual's perceived behavioural control, which is a significant factor of their intentions to engage in a given behaviour, according to the theory of planned behaviour. (Krueger et al., 2000) So, resultantly, according to this idea, ESE encourages entrepreneurial conduct by increasing a person's entrepreneurial goals (Schlaegel & Koenig, 2014). Furthermore, ESE research is beginning to embrace new theoretical views, such as the effectuation. (Engel et al., 2014) self-regulation (Shephard et al., 2013) regulatory focus (Couper et al., 2016) theories to explain ESE’s Influence and the settings in which it is likely to have more or less favourable effects.

H3: Entrepreneurial Self-Efficacy positively affects the performance of Pakistani SMEs.
H0 : Entrepreneurial Self-Efficacy in Pakistani SMEs mediates the relationships between Integrative Value-Creation and Supply Chain Integration.

Innovation Capability

Firms' innovation capability is a broad term that encompasses the ability to absorb, adapt, and integrate technology in order to improve the organization's operations and outcomes. Rajapathiranna and Hui (2018) discovered that an organization’s innovation effort had a beneficial impact on innovation capability of firm on its performance. This shows that initiatives like inter-firm value-creation and integrations could boost the likelihood of latest technology being adopted by businesses. This is in line with Le and Lei’s (2019) findings, which suggest that there is a knowledge exchange between internal and external partners in the organization which promotes innovation capabilities. Interactions with customers and competitors, according to Shafi (2020), foster innovation within firms. As a result, activities that foster these relationships should be supported in order to boost organizations’ innovation capacity.

Furthermore, Mendoza-Silva (2021) demonstrates that a positive interaction between internal and external organisational partners significantly improves a firm's potential to innovate over knowledge sharing actions. Kim and Park (2018) find, on the other hand, that management competences and external networking increase firm innovation. Insufficient resources and structural rigidity, on the other hand, inhibit initiative within businesses. Moreover, Donkor et al., (2018) opine those businesses with clearly defined goals are more likely in innovating to improving firm performance than those without. Firm technical innovation, according to Donbesuur et al., (2020) is a critical factor of organizational productivity. This demonstrates the importance of innovation capability in the integrative valuecreation, supply chains integrations, and organizational performance nexus.
H₄: *Innovation Capability of Pakistani SMEs affects firms performance.*

The majority of researches has concentrated on Supply Chain Integration in the domain of Vertical and horizontal integration of large-scale companies while less researches have been conducted with regards to SMEs and from the perspective of Entrepreneurship and Innovation. Furthermore, Entrepreneurial self-efficacy research is gaining popularity, and there is a need to bridge the knowledge and literature vacuum., which still exists (Drnovsek, Wincent, Cardon, 2010).

**Research Methodology**

**Conceptual Framework**

![Conceptual Framework Diagram](image)

(Figure 1)

**Data Collection and Sampling**

The relationship between supply chain integration, Integrative Value-Creation, and firms performance is investigated in this study. We also investigated how innovation capability and
entrepreneurial self-efficacy play a role in mitigating the relationship. The research is quantitative, including survey data from Pakistani SMEs to back it up. We use two sample strategies to rationalize the study: Simple random probability and purposive non-probability samplings. Since is a large number of SMEs all over in Pakistan therefore we only include SMEs that have been documented with SMEDA and situated in Punjab Province by using the purposive sampling technique. The final sample of the study consists of 394 SMEs with legitimate emails and contactable phone numbers, providing support for the generality of our research findings. A systematic five-part close-ended survey instrument is used to collect data, which covers respondent demographics, Integrative Value-creation, innovation capability, supply chain integrations, Entrepreneurial Self Efficacy, and performance of firms. Chief executive officers (CEOs) or Entrepreneurs of SMEs are the target responders.

**Constructs Measurement**

The questionnaire had been designed to assess the relationships between five construct variables, including supply chain integration, innovations capability, Entrepreneurial Self-Efficacy, values creation, and business performance, in the context of construct measures. The measuring construct and the number of elements are detailed in Table 1. The Integrative Value-Creation construct is made up of two parts: approach and measure. First part contains four items and focuses on the various techniques used by SMEs to involve in value creation, while the second component contains seven items and explores the advantages and challenges of SMEs' Integrative Value-Creation (Hein et al., 2019, Lusch and Nambisam, 2021). The four parts are: investment in information systems, new machines, new techniques, and in new processes, that make up innovation capabilities construct. To summarize, one item is used to assess each of the aforementioned elements of the construct of innovative capabilities (Rajapathirana and Hui, 2018;
Mendoza-Silva, 2021). Furthermore, the supply chain integration design contains four aspects, with two measurement items each for system coupling and collaboration between SMEs and others, and four measurement items each for collaborative decision making and information exchange (Munir et al., 2020; Phan et al., 2020). System coupling refers to SMEs' ability to link their systems to the systems of other enterprises, whereas shared decision refers to SMEs' ability to participate in collective decision making with heterogeneous parties in terms of supply chain integration components. SMEs' ability to convey information amongst departments and other stakeholders in the supply chain is also referred to as information sharing, while collaboration refers to the various levels of collaboration that SMEs engage in (Maas, 2017). Non-financial firm performance, which consists of five things and emphasizes on the market share growth; customer retentions and improvement in SMEs' image at corporate level, is divided into two categories: financial firm performance (three items) and non-financial firm performance (five items) (Lugosi et al., 2012; Chakraborty, 2014).

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Questions/ Items</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Capability</td>
<td>4 Items</td>
<td>Hein et al., 2019, Lusch and Nambisam, 2021</td>
</tr>
<tr>
<td>Supply Chain Integration</td>
<td>12 Items</td>
<td>Munir et al., 2020; Phan et al., 2020</td>
</tr>
<tr>
<td>Integrative Value Creation</td>
<td>11 Items</td>
<td>Hein et al., 2019, Lusch and Nambisam, 2021</td>
</tr>
<tr>
<td>Entrepreneurial Self-Efficacy</td>
<td>18 Items</td>
<td>Naktiyok, 2010</td>
</tr>
<tr>
<td>Firms Performance</td>
<td>8 Items</td>
<td>Lugosi et al., 2012; Chakraborty, 2014</td>
</tr>
</tbody>
</table>

### Theoretical Model Specification

In this study, the structural equation model (SEM) is used to investigate the mediating effects of Entrepreneurial Self-Efficacy and innovation capabilities on firm performance via integration of supply chains and integrative value creation. We evaluate the psychometric qualities of the
SmartPLS. The structural equation model is actually a statistical tool for allowing complicated interactions between one or two independent and dependent latent variables. In summary, the structural model build links between response and explanatory latent variables. It can be assumed that a sequence of regression equations will be computed based on the theoretical model definition, to evaluate the structural model, as illustrated in Figure 1, shows causal effects among the variables used in the study.

As a result, to be estimated, a set of regression equations for the theoretical model described in Figure 1 are as follows.

\[
\text{FinpM} = \beta_0 + \beta_a \text{FinpM}_i + \varepsilon_i \quad (1)
\]

\[
\text{SupplyChainIntg} = \beta_0 + \beta_a \text{FinpM}_i + \varepsilon_i \quad (2)
\]

\[
\text{IntFmVC} = \beta_0 + \beta_b \text{SupplyChainIntg}_i + \varepsilon_i \quad (3)
\]

\[
\text{EntrprSelfEcy} = \beta_0 + \beta_b \text{SupplyChainIntg}_i + \varepsilon_i \quad (4)
\]

\[
\text{InvC} = \beta_0 + \beta_a \text{SupplyChainIntg}_i + \varepsilon_i \quad (5)
\]

\[
\text{EntrprSelfEcy} = \beta_0 + \beta_c \text{FinpM}_i + \varepsilon_i \quad (6)
\]

\[
\text{SupplyChainIntg} = \beta_0 + \text{InvC}_i + \varepsilon_i \quad (7)
\]

\[
\text{IntFmVC} = \beta_0 + \beta_c \text{InvC}_i + \varepsilon_i \quad (8)
\]

\[
\text{SupplyChainIntg} = \beta_0 + \beta_d \text{InvC}_i^* + \beta_a \text{FinpM}_i + \varepsilon_i \quad (9)
\]

\[
\text{SupplyChainIntg} = \beta_0 + \beta_d \text{EntrprSelfEcy}_i^* + \beta_f \text{IntFmVC}_i + \varepsilon_i \quad (10)
\]

(Adapted from Tian et al., 2021)

FinpM, SupplyChainIntg, IntFmVC, InvC, and EntrprSelfEcy, indicate Firm Performance, Supply Chain Integration, Integrative Value-Creation, Inovation Competence, and Entrepreneurial Self-Efficacy respectively. InvC* and EntrprSelfEcy*, in particular, function as mediating variables. Equations (9) and (10) evaluates the mediating roles of innovation capability and Entrepreneurial Self-Efficacy on the link among supply chain integrations and firm performances, as well as supply chain integration and Integrative Value-Creation.
Statistical Analysis

Descriptive Statistics

The data from 394 SMEs in Punjab, Pakistan, was gathered using the survey instrument. The results are shown in Table 2. We concentrated on entrepreneurs and business executives in particular. The rationale for this is that the majority of SMEs are owned and controlled by entrepreneurs and CEOs. As a result, the target respondents are appropriate for the study's goals.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach’s Alpha</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative Value-Creation</td>
<td>0.728</td>
<td>0.813</td>
</tr>
<tr>
<td>Supply Chain Integration</td>
<td>0.711</td>
<td>0.821</td>
</tr>
<tr>
<td>Innovative Capability</td>
<td>0.904</td>
<td>0.926</td>
</tr>
<tr>
<td>Entrepreneurial Self Efficacy</td>
<td>0.838</td>
<td>0.862</td>
</tr>
<tr>
<td>Firm Performance</td>
<td>0.889</td>
<td>0.912</td>
</tr>
</tbody>
</table>

Cronbach's alpha and composite reliability tests are used to ensure the reliability of research instruments. The test results are shown in Table 4. Cronbach's alpha is used to check for internal consistency and item reliability. Cronbach's alpha results show that all of variables have values larger than 0.7, indicating that the study instrument can measure the indicated components. We also utilize the composite reliability test to assess instrument's overall scale reliability. The output displays values larger than 0.8, indicating that the research instrument is generally trustworthy. As a result, there is sufficient data to support the study's conclusion.

Hypothesis Testing

We use the smart PLS to assess the study hypotheses after passing the reliability and validity tests. The estimation result is shown in Table 4. We discover that all of the underlying hypothesis (H1–H9) are accepted at a 5% (0.05) significant level.
Table 3
Hypothesis Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Relationship</th>
<th>Coefficient</th>
<th>P Values</th>
<th>Effect</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Integrative Value Creation → Firm Performance</td>
<td>0.151</td>
<td>0.004</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Supply Chain Integration → Firm Performance</td>
<td>0.160</td>
<td>0.005</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>Entrepreneurial Self Efficacy → Firm Performance</td>
<td>0.214</td>
<td>0.000</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>Innovation Capability → Firm Performance</td>
<td>0.035</td>
<td>0.000</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>Supply Chain Integration → Integrative Value Creation</td>
<td>0.285</td>
<td>0.005</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H6</td>
<td>Integrative Value Creation → Innovation Capability</td>
<td>0.038</td>
<td>0.003</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H7</td>
<td>Supply Chain Integration → Entrepreneurial Self-Efficacy</td>
<td>0.512</td>
<td>0.002</td>
<td>Direct</td>
<td>Supported</td>
</tr>
<tr>
<td>H8</td>
<td>Innovation Capability → Firm Performance-Supply Chain Integration</td>
<td>0.029</td>
<td>0.000</td>
<td>Indirect</td>
<td>Supported</td>
</tr>
<tr>
<td>H9</td>
<td>Entrepreneurial Self-Efficacy → Integrative Value Creation – Supply Chain Integration</td>
<td>0.067</td>
<td>0.000</td>
<td>Indirect</td>
<td>Supported</td>
</tr>
</tbody>
</table>

As a result, increasing Integrative Value-Creation activities by one unit improves Firm Performance by 0.15. This is in line with the findings of previous research (Deshpande, 2012;
Chakraborty et al., 2014). Firm Performance is favorably influenced by Supply Chain activities, with an increase in Supply Chain activities increasing Firm Performance by 0.16. This is why academics urge for the advancement of firm-to-firm supply chain integration (Huo et al., 2014). Furthermore, we discover that entrepreneurial self-efficacy has a favourable impact on supply chains integration in Pakistani SMEs. Supply Chain Integration improves by 0.21 for every unit rise in Entrepreneurial Self-Efficacy activity. Entrepreneurial self-efficacy activities have been shown to boost Supply Chain Integration empirically. Furthermore, we discover that innovative capability is linked to firm performance. A unit increase in inventive Capability enhances Firm Performance by 0.03 according to statistics. This demonstrates the necessity for innovative technologies to boost the performance of Pakistani SMEs (Shafi, 2020). Innovative Capability has been shown to be critical in increasing a company's efficiency and productivity (Kim and Park, 2018). We also calculated the mediating effects of entrepreneurial self-efficacy and innovative competence on the correlations between Supply Chain Integration; Performance and Supply Chain Integration between firms and Value Creation, respectively. Further, we discovered that mediates the association between supply chain integration and firm performance in a positive way. This is in line with the findings of previous research.

We utilize the adjusted $R^2$ as goodness of fit test of model to measure the robustness of the model estimation. The productivity of the goodness-of-fit test and path coefficients obtained by Smart PLS are shown in the figure. These models, have adjusted R-Square values greater than 0.5, indicating that they explain more than half of the variances in the connections assessed. As a result, the model does better than a zero model.
Results and Discussion

This study examines the connections between supply chain integration, Integrative Value-Creation, and company performance in Pakistani SMEs. In the links between supply chain integration and company performance, we additionally calculate the mediating roles of innovation capability and entrepreneurial self-efficacy, as well as integrative value-creation and firm performance. There is a positive association between all of the possibilities. In Pakistani SMEs, Integrative Value-Creation increases firm performance. While this is to be expected, it also indicates that, unlike decades ago, SMEs in Pakistan are now more willing to collaborating with other firms. Previously, Pakistani SMEs were known for keeping their operations under wraps for fear of losing confidential information and clients to rivals. As a result, the existing demand for improved products and increased rivalry in the sector could explain the sector's recovery. As a result, government regulations and incentives that encourage collaboration and fair competition in the business could fuel growth in this sector.

In SMEs, integrative value creation has good impact on supply chain integration. This finding backs up previous research on the link between Supply Chain Integration and Integrative Value-Creation (Beheshti, 2014). The example of Pakistani SMEs, on the other hand, could be explained by the necessity to cut costs while increasing efficiency and survival. With the entry of new participants, Pakistan's SMEs industry is currently seeing explosive expansion. As a result, surviving the competition necessitates the creation of superior items at the appropriate time and at the correct cost. To enhance productivity, SMEs can attain this by establishing a unified relationship between Integrative Value Creation and Supply Chain Integration. Consequently, Integrative Value Creation actions should be planned to drive innovation in Pakistani SMEs in
order to boost creativity, innovation, and profitability. Furthermore, it has been empirically demonstrated that the smooth forecasting, planning, execution of information transmission across stakeholders in a supply chain integration has an impact on a firm's success. (Seebacher and Winkler, 2015). In Pakistani SMEs, the benefits of supply chain integration can be seen in firm performance, according to our research. This demonstrates that efficient information exchange and decision assistance help SMEs in Pakistan operate better. Unlike prior methods of SME owners making unilateral decisions, modern procedures encourage multiple party interaction (Konadu et al., 2020). As a result, using a supply chain integration strategy that includes stakeholders such as suppliers and distributors, SMEs in Pakistan can encourage improved performance.

**Conclusion and Policy Implications**

Using the SEM model, the study evaluates Integrative Value-Creation, supply chain integration, and performance of firms nexus in Pakistani SMEs. The mediating roles of entrepreneurial self-efficacy and innovative capability are also assessed. In Pakistan, Integrative Value-Creation has a favourable impact on SMEs' performance. This indicates that, in comparison to past years, SMEs are more open to collaboration. In practise, this could be connected to the educational background of the country's present generation of SME CEOs. In Pakistani SMEs, Integrative Value-Creation has a favourable impact on supply chain integration. Theoretically, these activities are similar, but they are not the same. This relationship could be explained by the similarities. This relationship is further explained by SMEs' drive to save costs, deliver efficient services, and increase production. As a result, the present competitive style of Pakistani SMEs can be effectively navigated through the appropriate design of Integrative Value Creation and Supply Chains Integrations activities. Supply Chain Integration in Pakistani SMEs is influenced by innovation capability, which includes
the application of current technology, new processes, new equipment, and procedures. This is because most Supply Chain operations thrive on process improvement and innovation. As a result, the success or scope of Supply Chain Integration efforts in SMEs is determined by the level of innovation. To leverage the benefits of Supply Chain Integration, Pakistani SMEs should invest in innovation. Moreover, while developing new policies to encourage the diffusion of innovation in Pakistani SMEs, the study's findings can be considered. As a result, the newly implemented government policies will encourage the diffusion of innovation in Pakistani SMEs and timely execution and advancement of this agenda. Again, Pakistani SMEs financial performance is influenced by innovation capability.
References


### Annex-1

**Demographic Characteristics**

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Range</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>381</td>
<td>96.7%</td>
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<tr>
<td></td>
<td>Female</td>
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<td>3.3%</td>
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<tr>
<td>Age</td>
<td>Below 20</td>
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<td></td>
<td>20 – 26</td>
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<td>7.10%</td>
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<tr>
<td></td>
<td>27 – 35</td>
<td>171</td>
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<td></td>
<td>36 – 45</td>
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<td>39.34%</td>
</tr>
<tr>
<td></td>
<td>46 – 60</td>
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<td>8.88%</td>
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<td></td>
<td>Above 60</td>
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<tr>
<td>Education/ Qualification</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>Post Graduate</td>
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<tr>
<td>Business Nature</td>
<td>Service</td>
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<td></td>
<td>Manufacturing</td>
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<td>37.05%</td>
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<td>Trading</td>
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<td>State of Employees</td>
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<td>Above 150</td>
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