

The Mediating Role Of Absorptive Capacity And Learning Networks In The Relationship Between Inter-Organizational Learning And Innovation Capability

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Abstract

This research examines the nexus between inter-organizational learning, absorptive capacity, and innovation in the construction industry. This study, grounded in the theory of absorptive capacity, sought to empirically explore the effects of inter-organizational learning and absorptive capacity on innovation. To better understand absorptive capacity, inter-organizational learning, and innovation, this study is intended to propose a framework. The research was conducted using a deductive, survey-based methodology and was informed by positivist philosophical assumptions. Convenient sampling was used with a sample size of 483. It was observed how well the models fit together using Structural Equation Modelling and the Analysis of a Movement Structure (AMOS). There was enough evidence from the empirical data to suggest that the instrument was valid and reliable. The research concluded that absorptive capacity and learning networks mediate between inter-organizational learning activities and innovation. The study was limited to the construction organizations of Rawalpindi/Islamabad. New research should examine the effects of varying theoretical models and research approaches. This study is also proposed to be repeated in different cultures and environments.

Keywords: Inter-organizational learning, Absorptive capacity, innovation.

Introduction

Maintaining an organization's competitive advantage requires innovating in a market with intense competition and a rapidly changing environment. In other words, the firm can achieve its growth and survival through the ongoing development of new products and management procedures (Ren, Xie, & Krabbendam, 2010). In addition, there is a great deal of uncertainty in the outside world, such as customer preferences. Innovation is difficult, costly, and risky because of change, pressure from competitors, and rapid technological advancements (Argyris, 2017). As

a result, many businesses engage in inter-organizational cooperation, such as strategic alliances.

Access to information, tools, and technology increases the likelihood of an idea's success (Barkham, Bokhari, & Saiz, 2022; Wixom & Watson, 2001). Businesses can learn from partners through the alliance's platform and internalize crucial knowledge and skills (Seo & Park, 2022). However, getting results through allied learning is not always straightforward.

The procedure of ingesting and absorbing internal knowledge is produced through alliance activities (Hübel, Weissbrod, & Schaltegger, 2022). Alliance learning can be defined as developing a corporate learning mechanism to enhance the coordination of alliance activities. The associative learning process is complex and full of routine and unpredictability. Thus, this article looks at the learning methods a firm can implement to attain its goal. (Matinheikki, Kauppi, Brandon-Jones, & van Raaij, 2022). To get success in the business, organizations need to construct an associative learning mechanism (d'Aquin et al., 2022) to improve their ability to innovate. However, a large portion of associative learning research has concentrated on the interaction between experience and learning (Kwangmuang, Jarutkamolpong, Sangboonraung, & Daungtod, 2021), (Adhikari & Shrestha, 2022).

Literature Review

Organizational capability to produce new products, services, and processes is characterized by innovation (Serrano-García, Bikfalvi, Llach, & Arbeláez-Toro, 2022). Most successful organizational innovations are based on modifications to products and processes. Researchers pointed out that organizational innovation is creating innovative concepts and ideas and applying those ideas to products, processes, management, or marketing systems (Kandampully, Bilgihan, Van Riel, & Sharma, 2022). Innovation capability refers to a business's ability to provide unique products and services, build new technologies capabilities and change operations to create new propositions (Makhloufi, Laghouag, Ali Sahli, & Belaid, 2021). In addition, the ability to innovate is also a gift. The new connotation of resources and the behavior of modifying resources is to attain more output to gain advantages and generate income in the business (Maja & Ayano, 2021).

Inter-Organizational Learning and Innovation

Inter-organizational learning was familiarized perhaps during the mid-1990s, fluctuating the emphasis of knowledge in a sole business to multiple businesses and inter-organizational networks. Most innovation comes from consumer conversations, ideas, suppliers, or networks (Slavova & Jong, 2021). Inter-organizational learning is a competitive aspect for firms. Inter-organizational learning occurs when two or more organizations share information. It is a type of learning between different organizations (Giannakos, Mikalef, & Pappas, 2021). As a result, collaborative learning with other organizations strengthens the firm's ability for creativity and innovation (Ryu, Baek, & Yoon, 2021).

Organizational innovation is deliberated as the consequence of inter-organizational learning activities. Organizational Innovation capabilities are productivity of reasonable competence produced by inter-organizational learning activities (Lin & Sanders, 2017; Perez & Toro-Jaramillo, 2018). The critical basis of organizational innovation capability is learning from the expertise of other organizations (Baum & Ingram, 2002).

Learning Networks and Organizational Innovation Capability

When the literature on learning networks and inter-organizational learning is inspected, it is realized that there is an evocative relation between learning networks and inter-organizational learning (Mahler, 1997). When this association is scrutinized, it has been seen that learning networks are an essential module of inter-organizational learning because it offers a base for sharing ideas between organizations (Meeus, Oerlemans, & Hage, 2001). Learning networks are a practice of partnership that allows clusters of participants to nurture networks crossways groups and establishments and to

support an entire structure by concentrating on the prospective for members to share material and learn from one another. To establish learning networks, organizations develop a formalized exclusive alliance function whose role is to improve the coordination of alliance-related activities, ensure the flow of resources, and increase the transfer of alliance experience in the organization. This action contributes to the organizational innovation capability (Geleilate, Parente, & Talay, 2021). Researchers like (Zahoor, Khan, Khan, & Akhtar, 2022) also believe that creating a learning network is a fruitful effort for organizations to increase their innovation capabilities.

Absorption Capacity and Organizational Innovation Capability

It has been seen that absorption capacity has a strong link with inter-organization learning (Cassol, Marietto, Tonial, & Werlang, 2021), and the results show that new capabilities can be generated by using this link. Absorption capacity can be defined as "a firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends." Absorptive capacity describes the organization's capacity to take in new information and learn from the outside world, process it, and use it in operational actions (Akpan, Soopramanien, & Kwak, 2021). Knowledge has emerged as a critical source of competitive advantage for businesses in the tumultuous environment, and organizations are trying to achieve it. Making the most of an organization's capacity to absorb outside knowledge is essential for success and innovation (Bierly III, Damanpour, & Santoro, 2009).

There are four complementing capacities for absorption capacity, namely, the capacity of the enterprise to acquire, digest, transfer, and apply knowledge (Zahra & George, 2002). For businesses to gain a new understanding from the outside, they must know where it can be located, how to obtain it, and how to maximize its

capacity for assimilation, transfer, and application (Ferrerias-Méndez, Fernández-Mesa, & Alegre, 2019). Transfer capabilities stress the integration and absorption of internal knowledge and outside expertise, allowing the organization to integrate its existing knowledge base with new external knowledge to produce even more learning. Absorptive capacity permits businesses to enlarge their information and ability base, expand their capability to integrate and use upcoming information, and lastly, progress the performance of their innovation (Sancho-Zamora, Hernández-Perlines, Peña-García, & Gutiérrez-Broncano, 2022)

Organization's Innovation Capability

The development of innovation skills is not an easy task. Businesses may benefit from potential competitive advantages because it is difficult to follow (Kryscynski, Coff, & Campbell, 2021). An organization's innovation capability refers to frequently transmuting philosophies and information into novel procedures, goods, and business structures into values for clients. Technological innovation is a novel or upgraded merchandise or approach whose technical features are meaningfully different from before. In contrast, management innovation refers to the noticeable leaving of outdated management philosophies, procedures, and practices or a withdrawal from habitual administrative systems that meaningfully modifies the work of management (Nousopoulou, Kamariotou, & Kitsios, 2022). Innovation capability is a vital precondition for effectual awareness supervision and novelty management and for executing disorderly novelties.

Inter-Organizational Learning and Innovation, Learning Networks, Absorption Capacity, Organization's Innovation Capability

In this research, the credentials are grounded on inter-organizational learning organization's

innovation capability relation, in which employees of the organizations play a pivotal role in learning networks and absorption capacity.

Learning networks and absorption capacity with the help of inter-organizational learning can help the organization's innovative capability.

The framework of the study

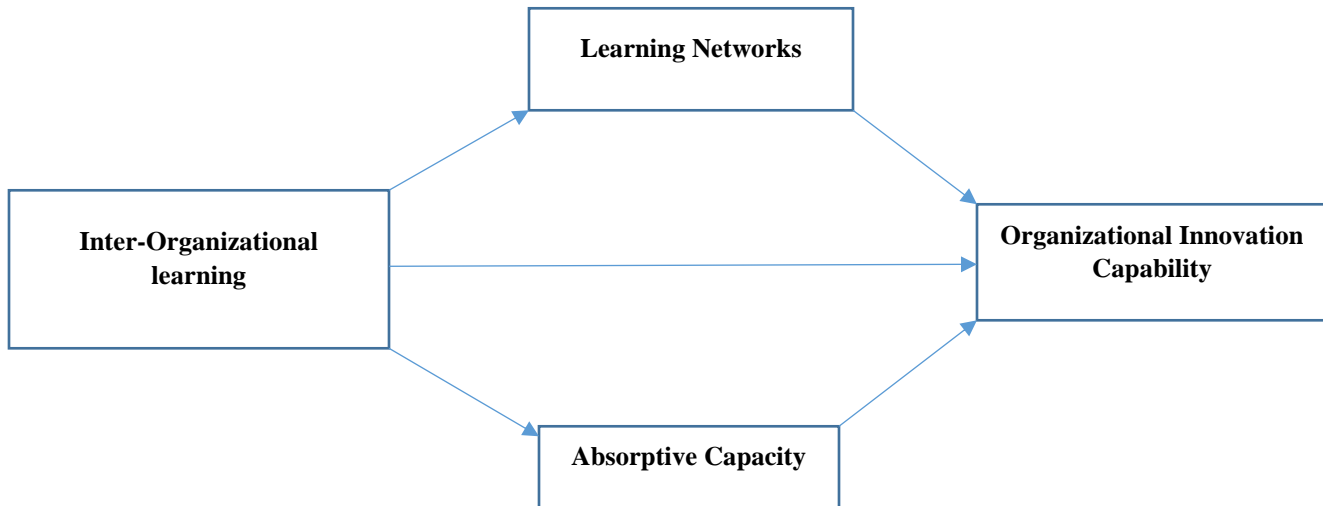


Figure 1: Research Model of the Study

The hypothesis of the Study

H1: Inter-organizational learning have a positive impact on organizational innovation capability.

H2: Learning networks mediate the relationship between inter-organizational learning and an organization's innovation capability.

H3: Absorptive capacity mediates the relationship between inter-organizational learning and the organization's innovation capability.

Material and Methods

This research is quantitative and inspects diverse hypotheses, which have been taken from the framework of the study. This research's target population is Pakistan's construction industry in Rawalpindi, Islamabad, and Karachi. The population of the study was 143,500 top and middle-level employees working in the construction industry of Pakistan. The sample size of the study was 483 employees of the

construction industry. The sample size is determined according to the method proposed by Krejcie and Morgan (Krejcie & Morgan, 1970). Convenient sampling techniques were used in this study.

The researchers personally visited some construction organizations to conduct interviews with employees after contacting the managerial and supervisory staff of various construction organizations to see if they would be interested in participating in the research. Some construction organizations responded positively to the researcher's inquiries. The questionnaire was anchored on a five-point Likert scale. Structural Equation Modelling and the Analysis of a Movement Structure (AMOS) were utilized for statistical investigations. The following Table 1 displays the different instruments used in the research.

Table 1: Details of Instrument (N=483)

| S. No | Instrument Name | Source |
|-------|-------------------------------------------|-------------------------------------------|
| 1 | Inter-organizational Learning | (Chen, Duan, Edwards, & Lehaney, 2006) |
| 2 | Learning Networks and Absorptive Capacity | (Škerlavaj, Štemberger, & Dimovski, 2007) |
| 3 | Organizational Innovation Capability | (Chen et al., 2006) |

Results and Discussion

The following segments are intended for comprehensive clarification and statistical examination of data to make this study an unadulterated scholarly job.

Test of Alpha for Evaluating Consistency for Variables

Nonetheless, policies were all around confirmed, and investigators similarly wanted to implement additional inspection of the variables by executing an alpha assessment to ensure that all

items have consistency and inter-item reliability besides the collected sample. So, Cronbach Alpha Coefficients were deliberated to authenticate the reliability of activities and essential trustworthiness planned for varied scales. The acceptable value of Cronbach Alpha Coefficients is 0.60 and above in the case of Social Sciences (Mohamad, Sulaiman, Sern, & Salleh, 2015). The values of Cronbach Alpha Coefficients in this study are shown in Table 2.

Table 2: Reliability Scale (N=483)

| Constructs | No. of Items | Cronbach Alpha Coefficients |
|--------------------------------------|--------------|-----------------------------|
| Inter-organizational Learning | 11 | 0.83 |
| Learning Networks | 17 | 0.86 |
| Absorptive Capacity | 21 | 0.80 |
| Organizational Innovation Capability | 21 | 0.94 |

Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is a statistical method utilized to authenticate the factor construction of a set of experimental variables. CFA permits the investigators to

examine the propositions that a connection between experimental variables and their primary latent constructs survives. The structural model is an association among the latent variables. Analysis of the structural model of the study is shown in Figure 2.

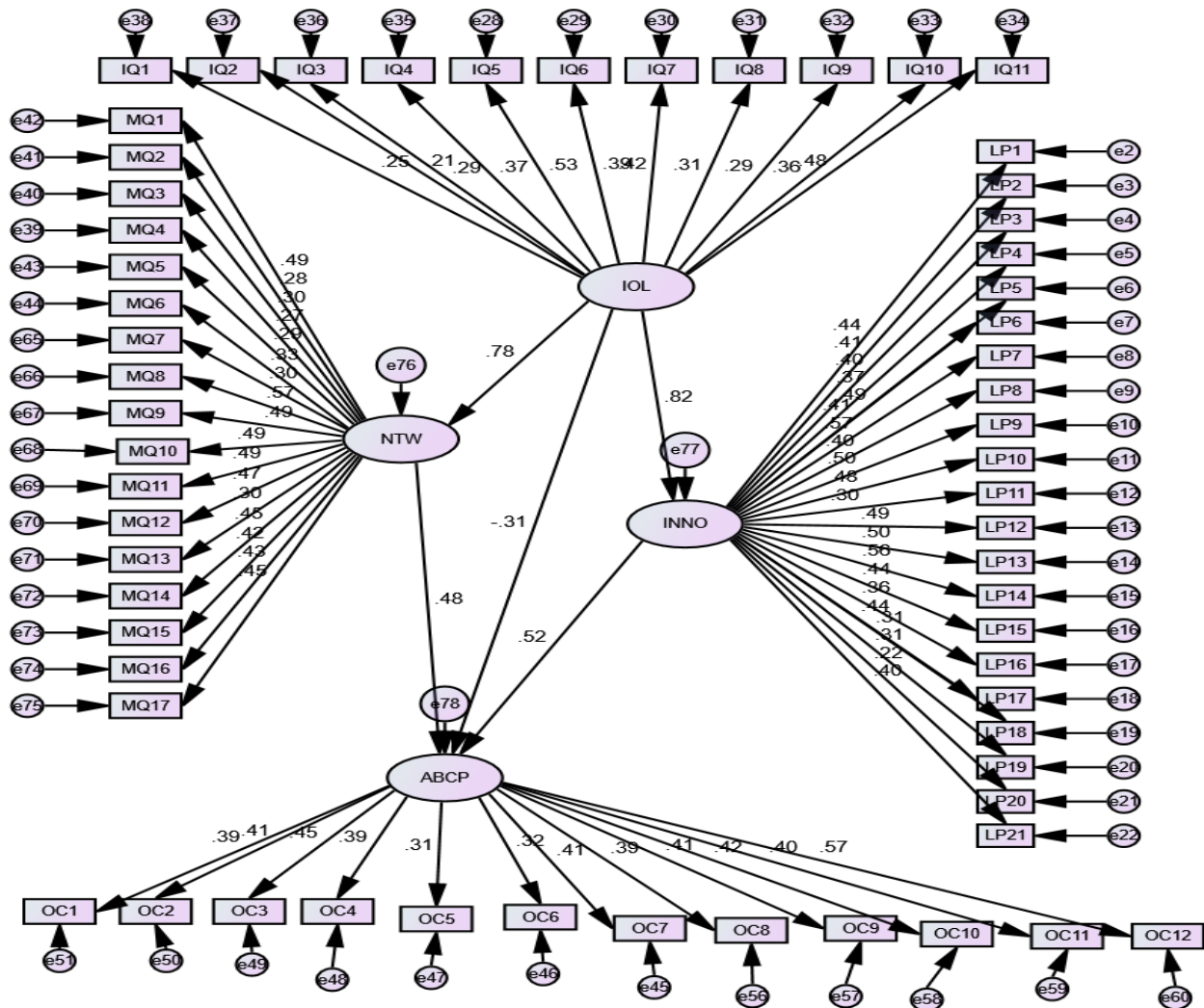


Figure 2: Structural Model of the Study

As the goodness-of-fit indices are within the allowed range, the results of CFA indicate that the model is accepted. The chi-square value is 1460.432 with 598 degrees of freedom and is significant at p=0.000. Other values for these indices are GFI = 0.83, Standardized RMR =

0.07, CFI = 0.95, RMSEA = 0.07, and CMIN/DF = 2.47. (Minimum values with references)

The measurement model is the model fragment that inspects the association among the latent variables and their measures. The analysis of the measurement model of the study is shown in Figure 3.

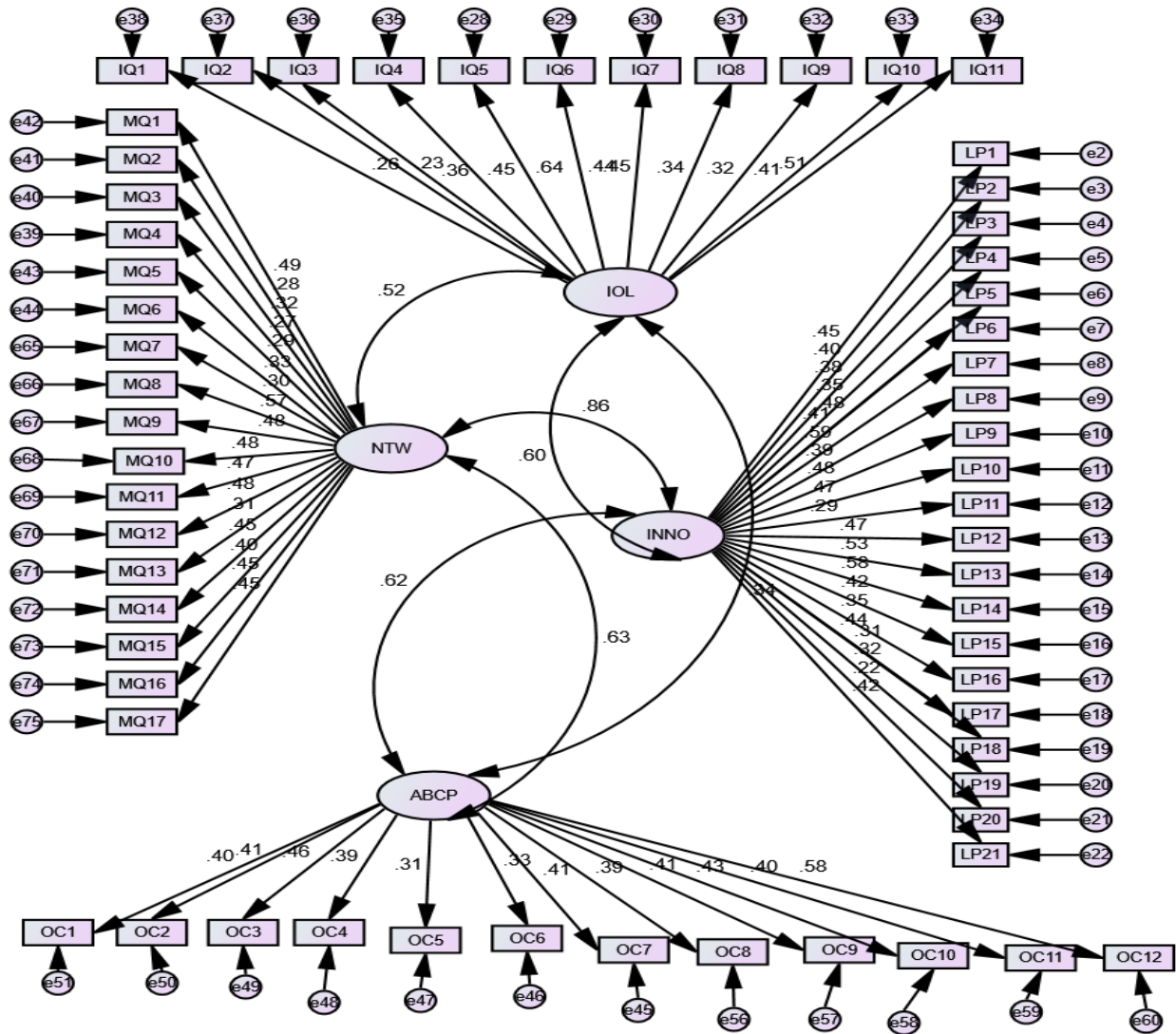


Figure 3: Measurement Model of the Study

The study was estimated after analysis of the measurement model for the individual constructs. The CFA values indicate the model's acceptance because the goodness-of-fit indices are within the acceptable level. Different values for these

indices are: chi-square is 1570.857 with 639 degrees of freedom was significant at $p=0.000$; GFI = 0.845; Standardized RMR = 0.062; CFI = 0.946; RMSEA = 0.071; and CMIN/DF = 2.531.

Table 3: Path Coefficients among the Constructs

| Variables | | Coefficient |
|-------------------------------|---------------------|-------------|
| Inter-organizational Learning | Absorptive Capacity | 0.54 |
| Inter-organizational Learning | Learning Networks | 0.48 |

A plethora of research supports the positive relationship between inter-organizational learning and absorptive capacity (Westerlund & Rajala, 2010). In the current model, the correlation between these inter-organizational learning and innovation is 0.95, whereas the path coefficient between these variables is 0.54, which shows a positive relationship between the variables. Inter-organizational learning ultimately increases the innovation of the organizations (Moen, Benum, & Gjørum, 2018). The correlation between inter-organizational learning and learning networks is 0.74, which shows that the variables are highly correlated. The path coefficient between these variables is 0.48, which is weak but positive. Inter-organizational learning positively correlates with learning networks (Zeng, Xie, & Tam, 2010). Organizations formulate, apply and monitor learning networks to provide a learning environment. The correlation between inter-organizational learning and organizational innovation capability is 0.74, which is very high. In contrast, the path coefficient between the variables is 0.41, which shows a positive relationship between the variables (Moen et al., 2018). Hence all the hypotheses of this study have been accepted.

Conclusion

The outcome of the research proposal is a thoughtful consideration of numerous features which have an extraordinary impact on organizational innovation capability in the construction industry of Pakistan. As per the outcomes of this investigation, subsequent ends could be dug out. The quantitative research examined the impact of inter-organizational learning on organizational innovation capability. The impact was positive, so inter-organizational learning must be increased to increase the organizational innovation capability. The study

also inspected the mediating role of learning networks and absorptive capacity between inter-organizational learning and organizational innovation capability. The study's results also supported the mediating role of learning networks and absorptive capacity between inter-organizational learning and organizational innovation capability. The current study is limited to the employees of construction organizations of Rawalpindi/ Islamabad. In the future, the study can be expanded by adding more variables or generalized to other geographical locations. Study Learning networks and absorptive capacity are the main antecedents of innovation. This study is based on direct and mediation relationships; a moderation relationship is recommended in future studies. The current research can also be implied in some other organizations to see its generalizability.

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