

# Integrating Organizational Capabilities: Using Multiple Mediation Analysis

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## Abstract

An organization's long-term survival and adaptation to the dynamic forces of the markets and external environments require that the organizations need to look at developing systems that will help sustain or rejuvenate the firm's competitive advantage. This will be done by reconfiguring and integrating the various organizational capabilities. Keeping this in view, the study uses knowledge management, intra-firm value co-creation, and learning organization as key contributors to help improve organizational performance. Data for this study was gathered through a survey conducted from 362 managers having working experience of two years minimum with their current organization using snowballing. Structural Equation Modeling using AMOS (v. 23.0) was used for measurement model analysis and hypothesis testing. To test the first three direct hypotheses of the study, i.e., knowledge management, learning organization, and intra-firm value co-creation with organizational performance, regression analysis was used. The results revealed a positive significant impact of all these independent variables on the dependent variable. Moreover, the presence of both the mediators (intra-firm value co-creation and learning organization) between the same independent and the dependent variable (knowledge management and organizational performance) indicates the effect of multiple mediation in the study's model. For testing multiple mediation, the Phantom model approach was used. The results also confirm the presence of full mediation than partial.

**Keywords:** Integration, Multi mediation, firm environment.

## Introduction

Performance imperatives have been central to most practice and research in business as it determines organizational survival (Knies, Jacobsen, & Tummers, 2016; Wang, Bhanugopan, & Lockhart, 2015). This has led to investigations into what will create a sustainable competitive advantage that will act as a most potent source of organizational performance (Nyaga & Whipple, 2011), especially in environments characterized by complexity, uncertainty, and the growing volatility of events including disruptive innovations and strategies. One area of focus is the theory embodied in the resource-based view (RBV) (Barney, 1991; Wernerfelt, 1984), which includes strategic resources that an organization has access to and can leverage to secure a competitive advantage for the firm.

A large body of research considers knowledge management (Chatterjee, Ghosh, & Chaudhuri, 2020; Gupta, Iyer, & Aronson, 2000; Tammets, 2012; Wiig, 1997) and learning in organizations (Ali, Warne, & Pascoe, 2008; Hsu & Lamb, 2020; James, 2003; Weick & Ashford, 2001) as the two significant resources that can consistently enable firms to reinvent the advantages that a firm can pursue to locate its next new performance frontier. Drawing on Nonaka's Knowledge Creation formulation (Nonaka, 1994; Nonaka & Konno, 1998), and Senge's Learning Organization (Senge, 1990), researchers have tried to theoretically as well as empirically establish the relationship between these and organizational success (Kools & George, 2020; Marquardt, 2011; Mehralian, Nazari, & Ghasemzadeh, 2018; Sharkie, 2003).

At present, it is difficult for organizations to ignore the fact that their success relies on the quality and relevance of knowledge-intensive activities. This necessitates an emphasis on effectively managing knowledge and its sources. Moreover, using the RBV perspective, a company's codified knowledge, it appears, may not be a source of competitive advantage as it can easily be imitated by competitors. Rather, the source that will help determine long-term competitive advantage is embedded in developing unique knowledge management capabilities (Cohen & Olsen, 2015; Gold, Malhotra, & Segars, 2001; Tseng, 2014). Moreover, the ability to leverage this knowledge in the business environment continually creating a resilient and flexible organization, when forced with dynamic environments.

Likewise, learning organization and its relationship with performance have drawn substantial attention (Davis & Daley, 2008; Kim, Watkins, & Lu, 2017; Pokharel & Choi, 2015). Learning organizations are those which continuously evolve and readily transform through continuous adaptation of their collective experience to operate successfully in changing circumstances enabling the firms to achieve long-term benefits (Pedler, Burgoyne, & Boydell, 1991; Sidani & Reese, 2018; Watkins & Marsick, 1993). This way, learning organizations are considered one of the most significant organizational abilities, that enables a firm to understand itself in relationship with its competency path and performance. This follows from the adage that the existence of the competitive advantage source rests in the firms' value-creating activities. According to Porter (1985), the value chain is based on a primary and supporting set of activities that ultimately help

organizations to create value for their customers in the form of product and service offerings while capturing value for themselves as well.

Over a decade of studies, the logic of value co-creation in the value chain (Porter, 1985), draws from the service-dominant (S-D) logic (Vargo & Lusch, 2006, 2008), which is a well-researched paradigm in the field of marketing. In S-D logic, resources do not have value by themselves unless the value is co-created by the interaction and involvement of the firm with its consumers. Thus one aspect of this value co-creation occurs when both the parties i.e., the firm (supplier) and the consumer (receiver) become resource integrators. However, the present study is concerned more with activities that are internal to the firm and involve interaction between its departments and employees. This study believes that these constituents of intra-firm interaction and exchange are the ground where value co-creation should theoretically be embedded. In this study, therefore, we consider internal operatives of the firm as both the suppliers (department) and consumers (employees), who generate and receive the value being transacted within the firm's value chain and the across departmental boundaries. This study thus locates value co-creation conceptualization within the boundaries of the organization along its value chain, where the internal supplier and consumer co-create value through collaboration and integration of their resources. This framework of intra-firm value co-creation acknowledges knowledge management capabilities as one of the core characteristics of a firm encapsulated in learning organizations (Garvin, 1993; Theriou & Chatzoglou, 2008), as well as its value creation process (Cepeda-Carrion, Martelo-Landroguez, Leal-Rodríguez, & Leal-Millán, 2017). Further, to innovate organizations' learning strategies that enhance individual or group learning abilities, organizations need to focus on their knowledge management capabilities or processes including knowledge grasping, sharing, and implementation (Aggestam, 2006; Chinowsky & Carrillo, 2007; Fang & Jue-Fan, 2006). Thus, from the perspective of the knowledge-based view (KBV), knowledge is a decisive foundation for the firm's performance as well as a critical input to its customer value creation (Cepeda-Carrion et al., 2017). In other words, knowledge is considered the primary source in creating customer value as it helps the organization with knowledge of their customer's needs involving frequent interactions with them. This in turn assists organizations in creating value in the form of improved and customized product and service offerings. It is also to be noted that, several studies have verified the relationship between knowledge management and externally-oriented value co-creation, that is between a firm and its external customer (Awang, Zakaria, Yahya, & Mukhtar, 2010; Gohary & Hamzulu, 2016; Ode, Rigby, & Proudlove, 2017). However, the role of knowledge management within the context of intra-firm value co-creation, where the internal actors of the firm i.e., employees and their functional units i.e., departments, are purported to be involved in the process, has not been ascertained and thus represents a gap in our knowledge.

### **DART as a Proxy Measure of Intra-firm Value Co-creation**

So far, no research study has stipulated any measure that helps to assess a firm's ability to establish a value co-creation environment. Nevertheless, to study the relationships between knowledge management and learning organization with organization intra-firm value co-creation capability, this paper chose DART as a proxy measure for intra-firm value co-creation. Prahalad and Ramaswamy (2004), proposed that an organization that involves dialog, access, risk benefits, and transparency (DART) in its transactions can be assumed to have the relevant building block to create value co-creation. In this DART, Dialogue encourages communication between firm and customer through the sharing of knowledge and information at every stage of the value chain. Access facilitates the meaningful participation of firms as well as customers in the value co-creation process by providing them with a more evocative and immediate exchange of information that helps further in the creation and delivery of their product or service offerings. Risk assessment builds better firm-customer relationships as it informs consumers regarding the risks associated with the co-creation of the value offering. Lastly, Transparency of information is the source that creates trust between both parties i.e., firm and customer, thus creating an interactive environment. Also, while formulating the measures of DART, Albinsson, et al., (2016), suggested that these factors measure the readiness of the firm for value co-creation, and this study, therefore, believes that these reflect the core activities that will foster a value co-creating environment within an organization. In the same form, Mainardes, Teixeira, & Romano (2017), called these building blocks the determinants of co-creation.

These determinants in the opinion of this study are composites or measures of value co-creation and thus can be used as proxies of the value co-creation system in the firm. This study thus follows and incorporates DART as the determinant of value co-creation in the firms' value chain activities following Mainardes et al., (2017). Keeping the above in mind, this study defines intra-firm value co-creation as "an iterative process of dialogue held transparently between organizational internal actors and functional units to enhance coordination and integration".

### **Literature Review and Hypothesis Development**

#### **Knowledge Management and Organizational Performance**

In recent decades, knowledge management has evolved from an emergent thought to an incontrovertibly critical task of business organizations (McKeen, Zack, & Singh, 2006). Existing research has also informed the relationship between knowledge management and organizational performance, finding a noteworthy association between the two (Dzenopoljac, Alasadi, Zaim, & Bontis, 2018; Gholami, Asli, Nazari-Shirkouhi, & Noruzy, 2013; Wei, Choy, & Chew, 2011). Also, Liao and Wu (2009), asserted that knowledge management has a positive relationship with organizational performance, considering that businesses that use the knowledge management process within their organization

demonstrate advanced skills in achieving required performance measures or KPIs. In this regard, various studies have also confirmed that knowledge management capabilities or processes affects the overall organizational performance in general, and in situations where performance is considered using both financial and non-financial measures (Kariuki & Wasike, 2017; Kharabsheh, Magableh, & Sawadha, 2012; Tubigi & Alshawi, 2015). This study, therefore, hypothesizes that:

H1: Knowledge management will have a positive impact on organizational performance.

### **Intra-firm Value Co-creation and Organizational Performance**

Several researchers have generally explored the influence of value co-creation (between a firm and its external stakeholders) on organizational performance and have reported significant results (Lugosi, Janta, & Watson, 2012; Nicolajsen & Scupola, 2011; Prahalad & Krishnan, 2008; Prahalad & Ramaswamy, 2004). This study on the contrary investigates the value co-creation conceptualization using the organization's internal context aligned with the value chain. This paper incorporates internal actors of a firm as key components, who will develop, harmonize, and share knowledge through joint interaction and resource integration process. Consequently, such informal interactive networks and the process of resource integration among firms' internal actors and functional units will form the basis of an intra-firm value co-creation process. Building on the intra-functional coordination and the integration of resources among internal actors of a firm including its functional units will positively impact the organizational performance and thus can be construed as a sustainable competitive advantage source. Therefore, this study hypothesizes that:

H2: Intra-firm value co-creation will have a positive impact on organizational performance.

### **Learning Organization and Organizational Performance**

Learning is considered to be one of the main foundations for developing pro-activeness in responding to the dynamic market trends (Goh, Elliott, & Quon, 2012; Namada, 2018). It permits organizations to develop relevant capabilities that will be required in terms of implementing processes that will improve organizational performance (Pérez López, Manuel Montes Peón, & José Vazquez Ordás, 2005). The extant literature provides empirical evidence that learning organizations have better organizational performance (Hussein, Mohamad, Noordin, & Ishak, 2014; Kim et al., 2017; Siddique, 2018; Thomas & Allen, 2006). Similarly, some studies also hypothesize that learning organizations are a mechanism to help continuously improve organizational effectiveness and performance (Brown & Brudney, 2003; Pokharel & Choi, 2015; Weldy, 2009). The study, therefore, hypothesizes that:

H3: Learning organization will have a positive impact on organizational performance.

### **Mediating Role of Intra-firm Value Co-creation**

As already discussed, the internal actors of firms i.e., supplier, consumer, and their functional units are all involved in the process of value co-creation through harmonizing and resource integration through the process of synergizing various activities and integrating resources. Furthermore, the KBV observes that knowledge is a vital basis to improve performance and plays a significant contribution to the provision of customer value (Cepeda-Carrion et al., 2017; Martelo-Landroguez & Cegarra-Navarro, 2014). However, providing customer value is mainly reliant on the competence of the firm regarding resource integration and utilization (Johansson & Jonsson, 2012), which in the internal organizational context is only likely when internal actors and units integrate with each other. These variants in relationship configuration between knowledge management, intra-firm value co-creation, and organizational processes are supposed to be directly correlated and reliant on each other. However, as the main capability and significant strategic resource, knowledge management capabilities are not simply measured as dominant to value creation and increasing customer co-creation capability, but as well an antecedent of sustainable organizational competitiveness, therefore, improving performance to a certain extent. Therefore, this study hypothesizes that:

H4: Intra-firm value co-creation mediates the relationship between knowledge management & organizational performance.

### **Mediating Role of Learning Organization**

As already discussed, knowledge management capabilities assist organizations to improve learning capability within and among their employees (Garratt, 1990; Su, Huang, & Hsieh, 2004). To further our understanding of the interplay of knowledge management with learning organization, various researchers have tested the above interplay covering diverse contexts and industries and establishing a positive relationship between both (Carrillo et al., 2004; Chinowsky & Carrillo, 2007; Loermans, 2002). Moreover, the mediating role of learning organization between knowledge management and organizational performance has also been proposed (Kariuki & Wasike, 2017). However, this relationship needs further testing in different contexts, especially in the context of a developing market economy. For that reason, the study hypothesized that:

H5: Learning organization mediates the relationship between knowledge management & organizational performance.

### **Methodology**

#### **Sample**

The sample of the study comprises manufacturing and service companies of Pakistan. Data was gathered through a survey conducted from 362 managers having working experience of two years minimum with their current organization. These managers were approached using snowballing.

### **Scales**

The scale items of the study were finalized based on the experts' opinions and pilot testing of the selected scales. In this regard, at first, three academicians and three professionals of the management field were consulted to review the constructs, keeping in mind the study objectives. Subsequently, a pilot study involving managers through a survey method was carried out. Thus, based on experts' suggestions and pilot testing results, the organizational performance was measured using six dimensions such as profitability, sales growth, customer satisfaction, employee satisfaction, employee participation, and overall performance, adopted from López-Nicolás & Meroño-Cerdán (2011), and Venkatraman and Ramanujam (1986). For knowledge management, ten items (originally 33 items) given by López et al., (2005) were adapted and included in this study. Learning organization was measured using fifteen items (originally 24 items at the organizational level) adapted from Marsick & Watkins (1999) and Watkins & Marsick (1993, 1996). Whereas, The Intra-firm value co-creation construct was adapted from Albinsson et al, (2011; 2016). Based on experts' suggestions, out of 23 statements of DART, 07 items of risk assessment were eliminated and that reduced the remaining measure to 16 items. As per them, dialogue, access, and transparency fit well with the dimensions of value co-creation in the internal organizational context, however, the risk assessment does not. Moreover, this study determines the representative sample of the target population based on various demographic variables including gender; qualification; the name of serving organization; designation; and years of service.

### **Hypothesis Testing and Results**

For the testing of hypotheses, structural equation modeling using AMOS has been used. Moreover, to mitigate the effect of Common Method Bias (CMB) from the data set a Common Latent Factor (CLF) test was used (Podsakoff et al., (2003). The result of the CLF revealed 11% of the shared variance among all the items, which was not a major issue. For assessing the measurement model fit, Confirmatory Factor Analysis (CFA) has been performed. In the initial model, the model fit statistics were not up to the mark (CMIN/df = 2.651; TLI = .777; CFI = .785, RMSEA = .069). Afterward, items with low factor loadings, a total of 5 items: 4 for KM, and 1 for OP, were removed and the model fit was tested again. In the second model, all model fit statistics were within the range of reasonable acceptance (CMIN/df = 1.838; CFI = .905; TLI = .910; and RMSEA = .049). Furthermore, the composite reliability along with the convergent and discriminant validity of the scale (Hair, Black, Babin, & Anderson, 2010) was calculated and all the measures fulfilled the statistical criteria (see Table 1).

**Table 1 Reliability, Convergent, and Discriminant Validity**

CR	AVE	MSV	ASV
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Intra-firm Value Co-creation	.94	.51	.29	.21
Knowledge Management	.87	.54	.13	.09
Learning Organization	.94	.54	.42	.24
Organizational Performance	.87	.58	.30	.22

Moreover, regression analysis was used to test the first three direct hypotheses of the study. The results revealed that all three independent variables, i.e., knowledge management, learning organization, and intra-firm value co-creation have a positive significant impact on the dependent variable i.e., organizational performance (see Table 2).

**Table 2 Results of Direct Effects**

	<u>Organizational Performance</u>			
	Unstandardized $\beta$	S.E	p-value	Decision
H1: Knowledge Management	.217	.048	.000	Supported
H2: Intra-firm Value Co-creation	.541	.043	.000	Supported
H3: Learning Organization	.825	.065	.000	Supported

The fourth and fifth hypotheses of the study indicated the presence of mediators i.e., intra-firm value co-creation and learning organization in the relationship between knowledge management and organizational performance. The presence of both the mediators between the same independent and the dependent variable indicates the effect of multiple mediations in the study's model. For testing this multiple mediation effect, the phantom model approach (Macho & Ledermann, 2011) was used, using Structural Regression (SR) with 5000 bootstrap samples. This approach makes it possible to simultaneously check each mediator's specific indirect effect in AMOS. Table 3 presents the results of multiple mediation analyses.

**Table 3 Results for Multiple Mediation**

	<u>Organizational Performance</u>				
	<u>BC 95% CI</u>				
	P.E	S.E	Lower	Upper	P
<u>Knowledge Management</u>					
Total Effects (c path)	.204	.058	.100	.328	.001



Direct Effects (c' path)	-.025	.050	-.124	.074	.608
Indirect Effects (a & b paths)	.229	.044	.152	.329	.000
H4: --via IFVCC	.113	.027	.068	.178	.000
H5: --via LO	.116	.030	.067	.187	.000

“BC = Biased Corrected; CI = Confidence Intervals (for 5000 bootstrap samples); P.E = Point of Estimate; S.E = Standard Error”

The above results indicate the significant role of both of the mediators i.e., intra-firm value co-creation and learning organization, between knowledge management and organizational performance. The results also confirm the presence of full mediation as the direct path drops to zero.

### Discussion of Results

In this study’s context, the comprehensive findings have supported all the proposed hypotheses. In the first instance, the positive significant relationship of knowledge management, intra-firm value co-creation, and learning organization with organizational performance indicates that all of these activities in their various manifestations are carried out in organizations that ultimately lead to improved organizational performance. This is because organizations provide their internal actors with sufficient opportunities i.e., in terms of their participated coordinated actions, the ongoing exchange of valuable knowledge, and the processes by which they learn mutually. Also, organizations’ continuous involvement in knowledge management activities as well as active participation and facilitation towards learning in their processes and operations to generate superior performance. Nevertheless, the statistical significance of knowledge management in terms of the explanation of organizational performance will be further elaborated when we examine the full mediating roles of intra-firm value co-creation and learning organization in between their relationship. The indication of full mediation thus explains that inside Pakistani organizations especially, the effect of knowledge management on organizational performance is indirect and yet informal. Existing available literature also indicates that knowledge management is one of the central features of learning organizations to be competitive. In other words, without knowledge management processes being operational including acquisition, distribution, and interpretation, organizations may not be in a position to strategies effectively, which is the desired outcome of a learning organization. Thus, organizations’ continuous involvement and facilitation of learning related activities as well as the greater operational interdependence between various functional units within

the organization's boundaries ensures that effective acquisition, distribution, and application of knowledge takes place that not just develop learning abilities among employees but also help co-creates customer value.

### **Managerial Implications**

Nevertheless, this study's findings could be useful for managers to draw a practical lesson in terms of achieving enhanced efficiency and sustainable competitive advantage through various means.

Firstly, organizations need to understand the important role of strategic knowledge management capabilities and should embed the same in their internal activities and processes. Undoubtedly, organizations that utilize their knowledge resources efficiently and effectively, can perform better. Managers, therefore, need to formalize knowledge management processes and strategies in their operations at the earliest.

Secondly, managers need to reinforce all relevant activities relating to their internal value co-creation systems. For instance, within the organization, internal actors (i.e., employees who perform the role of supplier and customer within organizational boundaries) should be provided with immediate and timely access to information and resources, etc. This helps them to better coordinate and share their knowledge, resources, and experiences with each other regarding products or services, which could ultimately be helpful in further creating and delivering internal value.

Lastly, managers need to focus on developing and enhancing their employees' learning abilities by encouraging and advancing their organization's learning culture. By incorporating continuous learning activities and opportunities, organizations can upgrade and polish their employees' knowledge and skills to generate superior performance as well as to create a well-formulated learning organization.

### **Conclusion**

Considering the significance of today's competitive environment, the nature of competitive advantage becomes transient. Given that, organizations whose strategies are based more on strategic or intangible resources are always outperformed and achieve sustainable competitive advantage. To stay responsive and adapted to new and dynamic market trends, organizations nowadays pay specific attention to improving the process of managing their valuable strategic resources in the form of effective utilization of knowledge management capabilities. Consequently, apart from managing knowledge capabilities, the co-creation of value also becomes one of the important characteristics of organizations in terms of competitive advantage. Through this co-creation process, operational interdependence between multiple departments or functional units within the firm takes place. This inter-functional coordination thus requires greater coordination and resource integration that in turn co-creates customer value that enhances organizational performance in different ways.

Accordingly, learning inside organizations is assumed to be the end result of the firm's management capabilities. Organizations, therefore, these days more actively engage in developing learning organization initiatives than ever before. These knowledge management capabilities thus facilitate corporate management in devising ways by employing knowledge assets more effectively to seek avenues for improving and supporting organizations' learning culture and intra-functional coordination among organizational internal actors.

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