

## **KNOWLEDGE QUALITY AND ORGANIZATIONAL PERFORMANCE: EVIDENCE FROM ERP-BASED ORGANIZATIONS IN PAKISTAN**

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### **ABSTRACT**

*This study fills the research gap by investigating the impact of Knowledge Quality from capabilities perspective i.e. Knowledge Infrastructure Capabilities and Knowledge Process Capabilities on Organizational Performance with mediating role of Organizational Learning and Organizational Innovation. Purposive sampling technique has been adopted to gather data from 307 manufacturing and services ERP technology-based organizations of Pakistan. Responses have been gathered on a self-administered survey questionnaire. Partial Least Square Structural Equation Modeling technique (PLS-SEM) has been applied and SmartPLS 3 tool has been employed to test the measurement model and path models. Knowledge Management Capabilities, Organizational Learning and Organizational Innovation found to be strong predictors of Organizational Performance while partial mediation of Organizational Learning and Organizational Innovation have been observed. This study through development of conceptual framework provides an insight into the top-level management for the formulation of strategies and policies.*

**Keywords:** Enterprise Resource Planning System (ERP), Knowledge management capabilities (KMC), Organizational learning (OL), Organizational innovation (OI), Organizational performance (OP)

## **1) BACKGROUND**

Knowledge can either be practical or theoretical which serves as a tool for organizations to transform into learning organizations to bring incremental as well as radical innovations (Boghossian, 2007). Importantly, acquisition of the knowledge involves perception, reasoning, communication, and cognitive processes (Eddy, 2013). In the 21<sup>st</sup> century, the organizations are enhancing their consideration towards knowledge so that they can achieve ultimate outcome through this strategically important asset to improve overall efficiency. However, there are key questions which needs to be answered. These include how these organization develop an effective knowledge management system for enhancement of their capabilities, resulting in competitive advantage in the market through organizational performance enhancement.

The importance of the quality of knowledge management can be assumed from the fact that developing countries of this region like Pakistan has identified its target in their national development strategy as growth vision to become a knowledge based economy. Nevertheless, organizations derive their goals from the vision stated by their respective state. In line with the fact, many organizations in Pakistan have started identifying the importance of knowledge management. The growing rate of Knowledge Management Systems based upon Enterprise Resources Planning Systems (ERPs) is the evidence of the notion. Correspondingly, the underlying research is an endeavor to evaluate the quality of the knowledge management of the organizations from capabilities perspective and its impact on organizational performance while considering the role of organizational learning and innovation.

## **2) INTRODUCTION**

Knowledge being the most important intangible asset is used by the business managers in many ways to create highest value for the organization (Tseng and Lee, 2014). Clearly Knowledge Management is a mechanism to develop information, stimulate the creation of new data, and managerial processes involved to provide the first-hand information to team members to support decision making process (Zaied, 2012).

Knowledge Management Capabilities (KMC) are broadly categorized into two types i.e. Knowledge infrastructure capability and knowledge process

capability. Other researchers have suggested the afore mentioned types as two dimensions of KMC (Malkawi & Asad, 2016; Esmail and Parisa, 2015; Sangeeta, et. al, 2015; Pandey & Dutta, 2013; Aujirapongpan, et. al., 2010; Smith and Mills, 2010; Smith et al., 2010, Nguyen, 2010; Lee and Lee, 2007; Gold, et. al, 2001, Mohammad et al., 2014)). Correspondingly, Neck (2010) affirmed that *Structure, Technology, Human Resource, and Culture being the Knowledge Infrastructure Capabilities* constitutes the basic structure of the organization while, *Acquisition, Conversion, Application, Protection, and Storing being the Knowledge Process Capabilities* are the Bridgeway for the stimulation of this knowledge to the target. Both i.e. knowledge infrastructure capabilities and knowledge process capabilities are significant as these enable organization members to effectively utilize available information (Neck, 2010).

Organizational Learning (OL) is often mixed with knowledge management (KM). Importantly, knowledge management focuses on the content of knowledge available at various levels while organizational learning is the transformation of this content into organizational knowledge management system through development of insight (Easterby-Smith and Lyles, 2003). Nonetheless, organizational learning is complimentary to knowledge management (KM). Hence organizational learning is strategically important for the organizations as it ensures long term performance) because both the concepts are similar and defines the different levels of knowledge development (Liao & Wu, 2009).

Antonicic & Hisrich (2012) and Victor et al. (2012) has described the dimensions of the organizational innovation which includes *new product/ services development; proprietary technologies, technological innovations, and pioneering technological developments*. Contrary to organizational innovation, an organization may be regarded as performing well if it is perceived to be profitable, productive, and competitive, its sales are growing and is cost effective (Zaied, 2012; Smith, et. al., 2010; Gold, et. al., 2007 and Lee & Lee, 2007). Scholarly work of researchers on Knowledge Management based performance has contributed to identify it as an important indicator to assess the organization's capability so that firms may formulate their strategies.

### 3) RESEARCH MODEL AND HYPOTHESIS

Literature review helps to draw the framework depicted in **Figure-1** for empirical testing. In the proposed framework, it is assumed that both knowledge infrastructure capabilities and knowledge process capabilities have direct impact on organizational performance. Further, an argument is being made that both organizational learning and organizational innovation have direct impact on organizational performance as they play the role of mediator between knowledge quality and organizational performance.

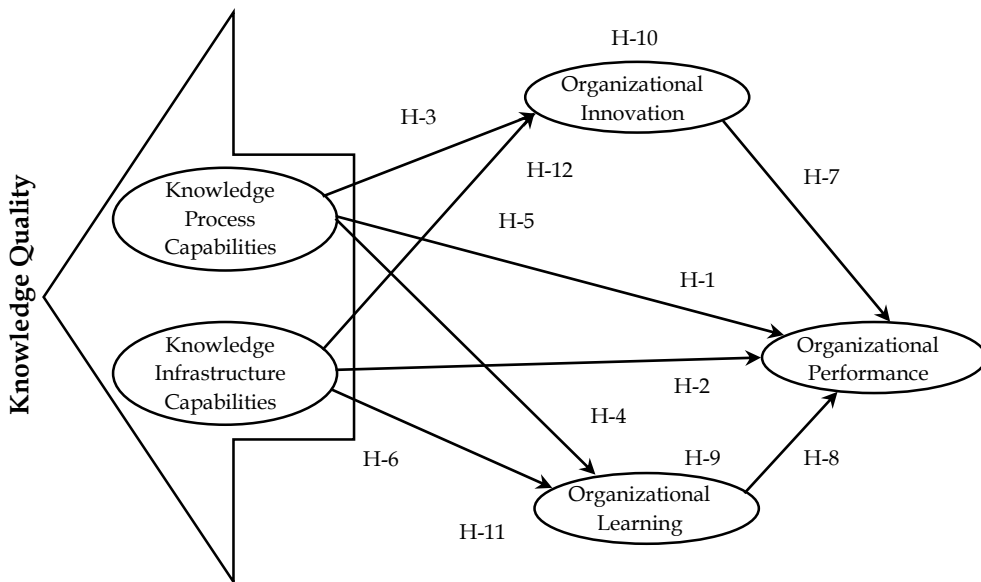


Figure 1: Conceptual Framework

Relationship of knowledge management capabilities and organizational performance is studied by many researchers and it is observed that both knowledge infrastructure capabilities (KIC) and knowledge process capabilities (KPC) have considerable direct impact on organizational performance (Jelena Rasula et. al, 2012; Mohammad et al, 2014; Bharadwaj, 2015; Zaied et. al., 2012; Tseng and Lee, 2014; Matin & Sabagh, 2015; Alaarj, Abidin and Bustamam, 2016; Ha and Wang, 2016). As literature suggests that both knowledge process and knowledge infrastructure capabilities are key imperatives for organizational effectiveness, thus these are considered as determinants to improve organization performance:

**H1:** KIC has a significant association with Organizational performance

**H2:** KPC has a significant association with Organizational performance

Further, knowledge management capabilities have found to be significant predictor of organizational learning (William R. King 2009; Nafei, 2014; Whee and Seng, 2012 and Andilala Wahyuningsih et. al, 2013):

**H3:** KIC has a significant association with Organizational Learning

**H4:** KPC has a significant association with Organizational Learning

Correspondingly, both knowledge management capabilities have a direct impact on the organizational innovation (Qammach, 2016; Ahmad et. al., 2016; Mahmoud &Asad 2016; Farsan, et al., 2013; Slavkovic 2013):

**H5:** KIC has a significant association with Organizational Innovation

**H6:** KPC has a significant association with Organizational Innovation

Likewise, study of the literature reveals that organizational learning (OL) and organizational innovation (OI) serve as the important interpreters of organizational performance (Fang et al., 2011; Mabey and Salman 1995; Hussein et al., 2014 and Hsiao, Chang & Chen 2014; Hanaysha, 2016; Vargas, 2015; Hussein et. al., 2016):

**H7:** OL has a significant association with Organizational performance

**H8:** OI has a significant association with Organizational performance

Prior studies studied the mediating role of organizational learning between relationship of knowledge management capabilities and organizational performance and have proved full mediation of organizational learning between knowledge management capabilities and organizational performance (Rehman and associates 2015; Wahyuningsih and Musadieq 2013; Pebrianto 2013 and Ho 2008). Likewise, mediating role of organizational innovation have also been studied while considering knowledge management capabilities as exogenous latent variable and organizational performance as the exogenous variable which proved full mediation of organizational innovation between knowledge management capabilities and organizational performance (Slavkovic and Babic 2013; Al-Hakim & Hassan 2016; Khan & Naeem 2016; Dickel & Moura 2016; Yazhou & Jian 2013 and Nopasand, Malek and Sheyjani 2014):

**H9:** OL and OI mediates the relationship between KIC and OP

**H10:** OL and OI mediates the relationship between KPC and OP

#### **4) RESEARCH DESIGN**

The underlying study follows a positivist paradigm covering the quantitative survey research design. The study targeted 514 manufacturing and services ERP technology-based organizations of Pakistan. Since underlying research is an endeavor to measure organizational performance; therefore, it considers organization as a unit of analysis.

##### **4.1) Data Collection and Sampling**

Data has been collected from the informants of the organizations with the help of structured questionnaires. As the study is conducted on the manufacturing and services ERP technology-based organizations of Pakistan, therefore, total 514 companies encompassing 287 companies from manufacturing and 227 companies from services sector have been selected as the target population where people were using ERP systems. Purposive sampling technique has been used to gather the data from informants/representatives of each organization. After extensive follow-up, 307 responses were received yielding a response rate of 59.7% while 300 valid questionnaires were used for analysis purpose. Seven questionnaires were found to be inconsistent having missing values; thus, were excluded.

##### **4.2) Measurement of Variables and Instrument Design**

In order to measure constructs of knowledge management capabilities and organizational performance, the questionnaire developed by Gold and Arvind Malhotra (2001) to measure knowledge infrastructure, process capabilities, organizational performance. While 9 statements developed by Antoncic and Hisrich (2001) and four statement developed by García-Morales, Lloréns-Montes, and Verdú-Jover (2008) have been used to assess organizational innovation and organizational learning respectively.

##### **4.3) Data Analysis**

The underlying study used IBM SPSS package to find out respondent's profiles through descriptive statistics. Further, Smart PLS 3 has been used for the assessment of measurement model as well as to conduct path analysis. Assessment of measurement model includes Reliability and

Validity Analysis. Reliability analysis further includes measuring indicator reliability, Cronbach Alpha as well as Composite Reliability Analysis. Conventionally Cronbach's alpha is the measurement used to confirm internal consistency of model however, researchers have suggested it to be a conservative approach in Smart PLS 3. Therefore "Composite Reliability" was also applied to confirm the internal consistency reliability (Hair et al., 2013).

Both convergent and discriminant validity were measured through item loading AVE, cross loading, and Fornel Larker values. After that assessment of path model was conducted for testing the hypotheses of the study.

## **5) FINDINGS OF STUDY**

### **5.1) Descriptive Statistics**

**Table 1** demonstrates the demographics of the ERP Technology-based organizations in Pakistan. In the underlying study, a total of 300 completed questionnaires were selected after addressing the missing values. The results revealed male dominance as most of the respondents were male (71% male and 29% Female). Further, it is observed from respondents that 65% organizations participating in the underlying study belong to manufacturing sector while 35% are from the services sector.

Table 1: Demographics of Sample

Demographic	Demographic Features	Frequency	Percentage
Gender	Male	213	71%
	Female	87	29%
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Age	20-30	178	59.3%
	31-40	96	32%
	41-50	16	5.3%
	51 and above	10	3.3%
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Education level	PhD	26	8.7%
	MPhil	89	29.7%
	Master	185	61.7%
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Years of Experience (within current organization)	Less than a year	33	11%
	1-3 years	167	55.7%
	3-5 years	74	24.7%
	Above 5 years	26	8.7%
	<b>Total</b>	<b>300</b>	<b>100.0</b>
Type of Organization	Manufacturing	194	64.7%
	Services	106	35.3%
	<b>Total</b>	<b>300</b>	<b>100.0</b>

## 5.2) Reliability and Validity Analysis

In underlying study, it is observed that the reflective model has indicator reliability because outer loading of measurements of each construct had value greater than 0.70 (Hulland, 1999). Further, internal consistency reliability has been measured by using Cronbach’s Alpha and Composite reliability of all variables. **Table 2** suggests that value of Cronbach’s Alpha for each construct is greater than 0.70 threshold value (Nunally, 1978). Further a satisfactory composite reliability has been observed as the value are above threshold level of 0.70 (Bagozzi and Yi, 1988). Further convergent validity of model is assessed based on Average Variance Extracted (AVE >



5) by each latent variable. Results confirms that AVE value of each construct is greater than threshold value of 0.5 (Hair et. al, 2013).

*Table 2: Composite reliability, AVE and Cronbach Alpha*

Constructs	Composite reliability	Average variance extracted	Cronbach Alpha
Knowledge process capabilities	0.987	0.772	0.986
Knowledge Acquisition	0.955	0.808	0.941
Knowledge Application	0.961	0.806	0.952
Knowledge conversion	0.962	0.802	0.951
Knowledge protection	0.956	0.812	0.942
Knowledge Infrastructure capabilities	0.982	0.784	0.983
Structure	0.956	0.814	0.943
Culture	0.959	0.823	0.946
Technology	0.955	0.808	0.941
Organizational performance	0.977	0.793	0.974
Organizational Innovation capabilities	0.971	0.782	0.965
Organizational learning capabilities	0.947	0.817	0.926

For measuring discriminant validity, cross loadings criteria suggested by Chin (1998) has been used. Chin (1998) suggested that the measurement item loadings on their corresponding variable must be higher than their loading on another variable. **Table 3 below** confirms the cross-loading results at which all measurement item loadings on their variable are greater than their loadings on another variable. This clarify that the measurement model of this study also does not contain any problem of discriminant validity.

Table 3: Results of Cross Loadings

	KPC	KIC	OI	OL	OP
AP1	0.889	0.876	0.868	0.839	0.877
AP2	0.878	0.861	0.867	0.851	0.864
AP3	0.886	0.881	0.871	0.853	0.869
AP4	0.886	0.866	0.867	0.838	0.859
AP5	0.880	0.857	0.866	0.842	0.859
AP6	0.868	0.867	0.850	0.813	0.852
AQ1	0.877	0.871	0.859	0.849	0.870
AQ2	0.893	0.881	0.877	0.851	0.875
AQ3	0.873	0.863	0.854	0.849	0.871
AQ4	0.876	0.857	0.850	0.836	0.859
AQ5	0.874	0.855	0.851	0.830	0.858
CON1	0.885	0.870	0.864	0.836	0.851
CON2	0.880	0.861	0.867	0.828	0.863
CON3	0.871	0.855	0.847	0.824	0.857
CON4	0.881	0.864	0.867	0.840	0.863
CON5	0.869	0.863	0.857	0.816	0.850
CON6	0.868	0.849	0.860	0.829	0.854
PROT1	0.879	0.866	0.856	0.850	0.861
PROT2	0.868	0.860	0.858	0.834	0.850
PROT3	0.875	0.870	0.858	0.851	0.859
PROT4	0.895	0.879	0.879	0.849	0.884
PROT5	0.877	0.856	0.855	0.852	0.859
CUL1	0.889	0.897	0.885	0.852	0.875
CUL2	0.877	0.887	0.873	0.837	0.869
CUL3	0.875	0.892	0.864	0.842	0.873
CUL4	0.874	0.897	0.870	0.865	0.872
CUL5	0.869	0.880	0.863	0.841	0.855
ST1	0.874	0.881	0.873	0.839	0.871
ST2	0.862	0.881	0.847	0.840	0.870
ST3	0.878	0.888	0.865	0.844	0.863
ST4	0.858	0.885	0.851	0.844	0.859
ST5	0.868	0.881	0.865	0.835	0.869

	KPC	KIC	OI	OL	OP
TC1	0.874	0.879	0.859	0.838	0.872
TC2	0.862	0.878	0.856	0.837	0.860
TC3	0.864	0.880	0.853	0.832	0.867
TC4	0.870	0.882	0.865	0.838	0.854
TC5	0.875	0.890	0.874	0.850	0.867
OIC1	0.873	0.873	0.888	0.848	0.871
OIC2	0.854	0.853	0.873	0.834	0.842
OIC3	0.852	0.844	0.867	0.825	0.837
OIC4	0.855	0.866	0.875	0.835	0.855
OIC5	0.880	0.872	0.889	0.847	0.877
OIC6	0.876	0.865	0.898	0.842	0.866
OIC7	0.872	0.865	0.885	0.837	0.868
OIC8	0.865	0.862	0.892	0.830	0.866
OIC9	0.875	0.868	0.892	0.833	0.872
OLC1	0.868	0.864	0.852	0.905	0.858
OLC2	0.873	0.873	0.866	0.904	0.875
OLC3	0.836	0.830	0.828	0.891	0.842
OLC4	0.876	0.873	0.874	0.916	0.869
OP1	0.866	0.861	0.865	0.843	0.882
OP10	0.862	0.867	0.859	0.835	0.878
OP11	0.874	0.875	0.878	0.847	0.899
OP2	0.868	0.873	0.864	0.846	0.893
OP3	0.875	0.869	0.861	0.839	0.889
OP4	0.883	0.876	0.879	0.849	0.899
OP5	0.882	0.868	0.878	0.850	0.892
OP6	0.870	0.871	0.860	0.851	0.884
OP7	0.886	0.888	0.882	0.864	0.904
OP8	0.876	0.875	0.863	0.858	0.889
OP9	0.869	0.867	0.859	0.847	0.891

### 5.3) PLS SEM Path Analysis

In the underlying study, Partial Least Square Structural Equation Modelling (PLS-SEM) is used to determine path coefficients between exogenous latent variable and endogenous variables through Smart PLS. **Figure 2** shows statistically significant relationship significant direct impact of “Knowledge process capabilities (KPC)” ( $\beta = .569^{***}$ ;  $P < 0.001$ ), “Knowledge infrastructure capabilities (KIC)” ( $\beta = .419^{***}$ ;  $P < 0.001$ ), “Organizational learning (OL)” ( $\beta = 0.29^{***}$ ,  $P < 0.001$ ) “Organizational Innovation (OI)” ( $\beta = 0.70^{***}$ ;  $P < 0.001$ ) on “Organizational performance (OP)” respectively. While, KPC also shows significant direct impact on OP ( $\beta = 0.63^{***}$ ,  $P < 0.001$ ) and OL ( $\beta = 0.59^{***}$ ,  $P < 0.001$ ). Similarly, KIC shows significant direct impact on OI ( $\beta = 0.36^{**}$ ,  $P < 0.001$ ) and OL ( $\beta = 0.37^{**}$ ,  $P < 0.01$ ).

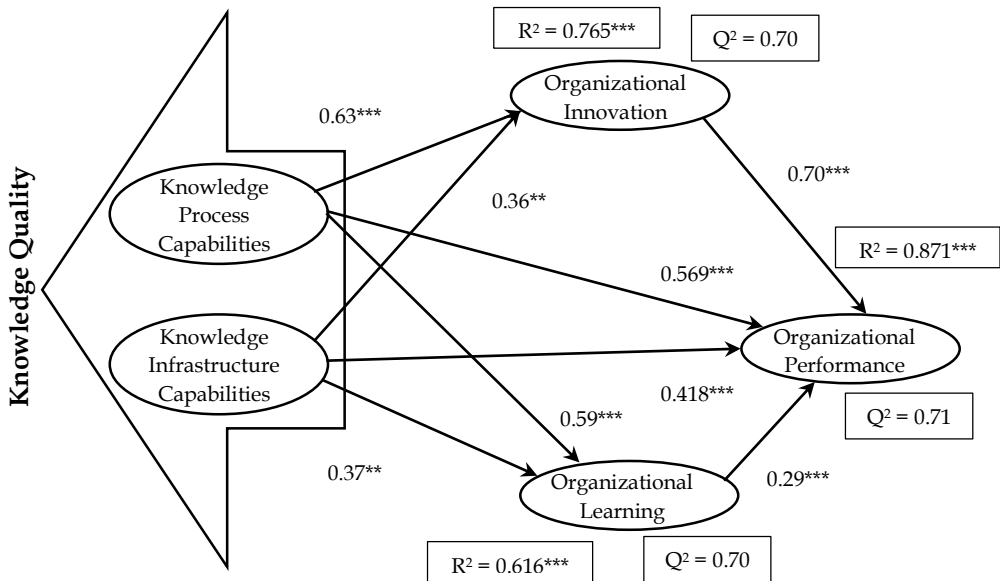


Figure: 2: Testing Path Model

Further as per **Table 4**, indirect effect has been found of OL ( $\beta = 0.276^{***}$ ,  $P < 0.001$ ) and OI ( $\beta = 0.686^{***}$ ,  $P < 0.001$ ) between KIC and OP. Similarly, OP ( $\beta = 0.686^{***}$ ,  $P < 0.001$ ) and OL ( $\beta = 0.277^{***}$ ,  $P < 0.001$ ) further illustrates the significant indirect effect between KPC and OP.

Table 4: Indirect Effects (Organizational Learning &amp; Organizational Innovation)

Paths	Beta Coefficient	T Statistics	P Values	Inferences
KIC -> OL->OP	0.276***	7.492	0.000	Supported
KPC ->OI-> OP	0.441***	12.414	0.000	Supported
KIC -> OI->OP	0.352***	10.884	0.000	Supported
KPC -> OL->OP	0.277***	7.280	0.000	Supported

#### 5.4) Mediation Analysis

For mediation confirmation, Baron and Kenny (1986) approach has been applied, which contain four steps mentioned below:

(1) Independent variables must have significant direct effect on dependent variable. In this study, KPC ( $\beta = .569^{***}$ ;  $P < 0.001$ ) and KIC ( $\beta = .419^{***}$ ;  $P < 0.001$ ) shows significant direct effect on OP.

(2) Independent variables must have significant direct effect on mediating variables. In this study, KPC shows significant direct effect on OP ( $\beta = 0.59^{***}$ ,  $P < 0.001$ ) and OI ( $\beta = 0.63^{***}$ ,  $P < 0.001$ ). Further, KIC also show significant direct effect on OL ( $\beta = 0.37^{**}$ ,  $P < 0.01$ ) and OI ( $\beta = 0.36^{***}$ ,  $P < 0.001$ ).

(3) Mediating variables must have significant direct effect on dependent variables. In underlying study, OL ( $\beta = 0.29^{***}$ ,  $P < 0.001$ ) and OI ( $\beta = 0.70^{***}$ ;  $P < 0.001$ ) shows significant direct effect on OP.

(4) When, being the mediators, OL and OI were tested in between the relationship of KIC and OP then the direct relationship of KIC and OP was decrease and significant ( $\beta = 0.302^{***}$ ;  $P < 0.001$ ). This shows partial mediation. Similarly, when OL and OI were tested in between the relationship of KPC and OP, then the direct relationship of KPC and OP were also decreased and significant ( $\beta = 0.370^{***}$ ;  $P < 0.001$ ). This also shows partial mediation.

## **6) DISCUSSION AND CONCLUSION**

The underlying study through Path Analysis, examines the impact of quality of knowledge management through its capabilities i.e. knowledge infrastructure capabilities and knowledge process capabilities on organizational performance. It further justifies the mediating effects of organizational learning and organizational innovation on the relationship between knowledge management capabilities i.e. knowledge process capabilities and knowledge infrastructure capabilities and organizational performance. It was observed that knowledge infrastructure capabilities, knowledge process capabilities, organizational learning and organizational innovation have significant positive impact on organizational performance. This supports the argument that all the latent variables selected for this study are strong predictor of organizational performance. Further mediating role of organizational learning and organizational innovation has also been tested between the relationship of knowledge management capabilities and organizational performance. The result found through path analysis reveals the partial mediation. Further, organizational innovation is found to be having most significant impact on the organizational performance followed by impact of knowledge process capabilities on organizational innovation and organizational performance. This further supports the argument that in these knowledge driven organizations of Pakistan having technological infrastructure necessary for their transformation into learning and innovative organizations, and where ERPs have been implemented as a part of their Knowledge Management System, their performance is highly driven through innovations. These innovations when supported by quality of knowledge management i.e. technological infrastructure and processes through development of learning culture, results in technological interventions and development of proprietary technologies thus enhance overall performance of the organizations.

## **7) IMPLICATIONS OF STUDY**

The underlying study provides an insight of the quality of knowledge management through its capabilities i.e. knowledge infrastructure capabilities, knowledge process capabilities, organizational learning and organizational innovation's implications thus helping too foster growth, resource allocation to be made in organizational infrastructure for enhancement of the technological interventions resulting in unique

innovations and flourishing of knowledge. Evidently, alignment of processes yields enhanced organizational innovations and learning thus resulting in better performance. Nonetheless, quality of knowledge management largely depends upon development of knowledge based skills, which are vital for continuous learning leading to enhanced organization capabilities whereas organizational performance is driven by processing capabilities, development of knowledge through organizational learning capabilities and technological innovations.

On the other hand, this study makes significant contribution in the existing literature. *Firstly*, existing literature used knowledge management capabilities in one dimension and till now multi-dimensional nature of knowledge management capabilities such as knowledge process capabilities and knowledge infrastructure capabilities with organizational learning and innovation have not been explored. Thus, this study extends this limitation by considering knowledge process capabilities and knowledge infrastructure capabilities as a two-dimensional construct. *Secondly*, existing literature conducted their research in other contexts such as Malaysia, China etc. Limited research has been done in the context of the Pakistan especially in both services sector of Pakistan. Thus, this study also extends limitations by conducting research on both manufacturing and services sector of Pakistan. *Thirdly*, the underlying research tested mediation effect therefore organizations must be of knowledge management systems background to be considered as effective. Nevertheless, results suggest that the other organizations must adopt planning tools as part of their knowledge management systems to enhance their performance.

Furthermore, organizations must formulate strategies and policies to implement and enhance quality of their knowledge management through their capabilities; thus, transforming into learning and innovation centers. For effective knowledge management, information acquisition and conversion should be a continuous process for application of knowledge to bring technological interventions in the industry. Organizations must invest on infrastructure to develop their capability, to provide support for technological innovation, being an antecedent. Likewise, while aligning the processes with existing resources, organizations must strive to develop learning culture resulting in breakthrough innovations and continuous performance. Thus, any organization investing in knowledge infrastructure of the organization may not be able to yield optimal

performance unless, the processes are aligned to keeps its momentum of learning.

## **8) LIMITATIONS OF STUDY AND FUTURE DIRECTIONS**

Despite the above significant contributions, this study also contains some limitations and provide directions for future research.

*Firstly*, the underlying research used only organizational performance as an outcome based on subjective perception of the respondents; future researchers might analyze performance based on objective measures which includes both financial and non-financial indicators of performance. Further, other outcomes such as employee creativity, customer retention etc. may also be studied. *Secondly*, this study used only two mediators such as organizational learning and innovation. Other mediators such as commitment, trust, empowerment, leadership style etc. might also be used for future research. *Thirdly*, data was collected only from the organizations where ERPs have been successfully implemented. Being users of such software as part of their knowledge management system, these organizations are having supportable infrastructure and streamlined process to nurture learning and innovativeness within their step ups. Thus, generalization of results requires comprehensive survey of all the manufacturing and services sector organizations of Pakistan. In future research data may be collected data from all the organizations irrespective of criteria applied herein. *Fourthly*, a comparative analysis of results between manufacturing and services sector organizations is also proposed to analyze the characteristics, traits, and response of both organization type of organizations against the variable.



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