Does Knowledge Management Expedite SMEs Performance through Organizational Innovation? An Empirical Evidence from Small and Medium-sized enterprises (SMEs)

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Abstract

The prime objective of this study is to investigate the role of knowledge management in SMEs performance in Pakistan. Declining in the performance of SMEs caused to decrease in Pakistani ranking to 138th out of 189 countries in the worldwide business index. Now the SMEs industry facing different challenge in constant growth. To address this issue, this study adopted quantitative research technique. Questionnaires were distributed through a mail survey. Structural equation modeling is utilized to analyze the data. Findings of the study found that organization innovations has a positive influence on SMEs performance. Moreover, it is found that knowledge management is one of the vital elements to enhance SMEs performance through organizational innovations. Hence, this study contributed to the body of literature by revealing the mediating role of knowledge management. This study is most beneficial for SMEs to enhance their performance through effective knowledge management system.

Keywords: Organizational performance, SME, organizational innovation, knowledge management.

Introduction

Small and medium enterprises (SMEs) have been widely acknowledged as a major facilitator for sustaining economic development (Bianchi, Glavas & Mathews, 2017; Gray & Jones, 2016) in most of the developed and developing countries. As the SMEs have key contribution in economic development (Azarloo et al., 2017) of any nation.Small and Medium Enterprise Development Authority (SMEDA) disclosed that SMEs constitute approximately 90% of all the enterprises in Pakistan. These enterprises employed almost 80% of the non-agricultural labour force. Moreover, it is revealed that their contribution to the annual gross domestic product (GDP) is 40% approximately.

However, SMEs are struggling with low organizational performance. Declining in the performance of SMEs caused to decrease in Pakistani ranking to 138th out of 189 countries in the worldwide business index. Now the SMEs industry of Pakistan facing various challenge in constant growth (Wahga, Blundel & Schaefer, 2015).Most of the SMEs in Pakistan facing various issues of entrepreneurial skills (Hussain et al., 2015) which effects adversely on performance. Furthermore, decrease in SMEs performance decline the employment

opportunities which brings hunger among the poor community. Therefore, decline in SMEs performance effect the economy as well as a generalcommunity due to a decrease in employment opportunities.

It is possible to enhance SMEs performance through organizational innovations. Organizational innovation also hasa significant contribution to SMEs performance. Organizations can produce more innovations and enjoy more performance (Tsai, 2001). Innovation is one of the major contributors towards performance (Rosenbusch, Brinckmann, & Bausch, 2011).However, organization innovations are not possible without proper knowledge management. The success of entrepreneurial activities requires management of various ideas. Moreover, innovation requires both external and internal ideas to create something new (Chesbrough, 2006) which requires proper management of ideas. Hence, knowledge management has vital role to facilities organization innovations towards the higher performance of SMEs. Therefore, in the current study, knowledge management is taken as mediating variable.

Various previous studies conducted by multipleresearchers on SMEs performance are missing with the mediating role of knowledge management with the help of organization innovations (see, for example, Ahmed, Halim, & Ahmad, 2018; Carpinetti et al., 2007; O'Cass, & Weerawardena, 2009; Otero-Neira, Tapio Lindman, & Fernández, 2009; Prange, &Pinho, 2007). Thus, the current study filled this gap by taking knowledge management as one of the key contributorsto SMEs performance through organizational innovations.

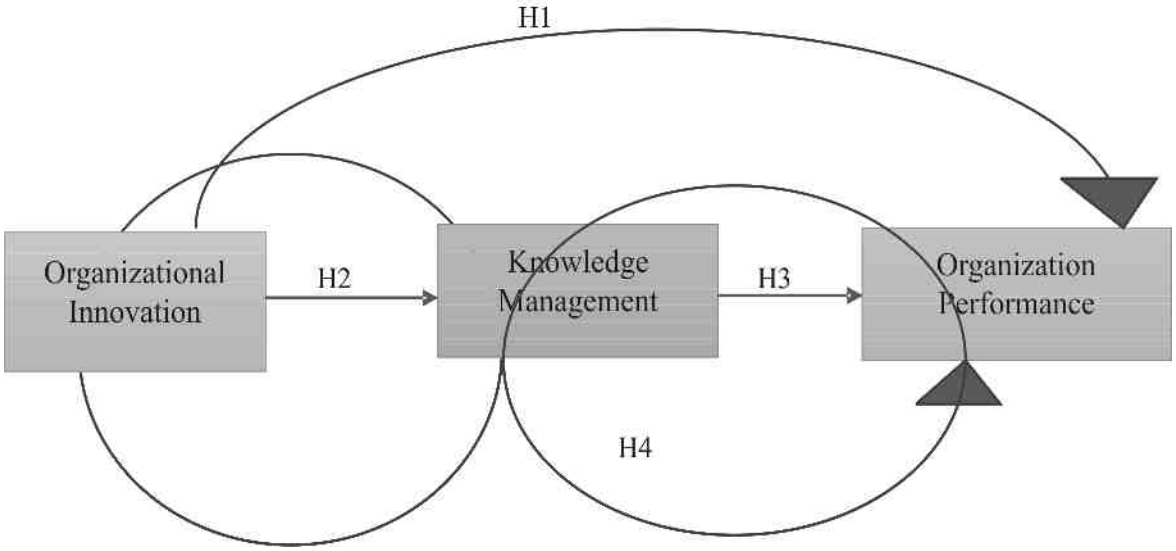
Knowledge management has various possible consequences in favour of SMEs performance through different ways. For instance, effective knowledge management has the ability to gain competitive advantage (Connor & Prahalad, 1996; Hall, 1993) in a competitive environment which enhances the SMEs performance. It has the positive contribution to improving firm's financial performance (Teece, 1998; Wiig, 1997). Moreover, knowledge management has key role in firm's innovation activities (Antonelli, 1999). Nevertheless, proper knowledge management helps to resolve various organizational issues (Carneiro, 2000) and it increases the organizational learning capability (Buckley & Carter, 2000) which facilitates organizational innovation. Therefore, knowledge management has key role to enhance SMEs performance.

Hence, the prime objective of this study is to investigate the role of knowledge management in SMEs performance. To achieve this objective, the currentstudy has below sub-objectives;

1.To investigate the effect of organizational innovation on organizational performance.

2.To investigate the mediating role of knowledge management.

Figure 1: Theoretical framework of the current study showing that how organizational innovation and knowledge management contributes towards organization performance



This is the first study which studied the mediating role of knowledge management between organizational innovation and organizational performance, organizational innovation and organizational performance. Therefore, this study is more significant for SMEs to boost up the performance through effective knowledge management.

Review of Literature

Organizational Performance

Organizational performance measurement is a critical construct (Combs, Crook, & Shook, 2005). An extensive intention has been paid by different studies to investigate the infusing factors towards organizational performance (Jing & Avery, 2008).That is the reason a high level of diversity exists in performance indicators. Therefore, measurement types of performance are still under debate (Jusohet al., 2008). Performance is generally measuredthrough two ways, namely; financial and non-financial. This study measured SMEs performance through non-financial measures. Importance of an organization can be increased through non-financial measurement (MacMillan & Gray, 1987). This argument is supported by various previous studies (e g., Atkinson & Brown, 2001; Hunt & Morgan, 1995; Kaplan, 2001). These studies also measured performance through non-financial measures.

Performance is one of the key success factors of every SME. However, in Pakistan, most of the SMEs are facing various challenges (Wahga, Blundel& Schaefer, 2015)to reach a reasonable level of performance. SMEs performance is a most crucial factor for the economy of Pakistan. Thus, this study is one of the steps to resolve these challenges through organizational innovation with the help of knowledge management.

According to the resource-based view(RBV),any organization's success is generallyassesed by its inside resources. Resouces of the firm can be tangible and intangible(Collis, 1994). In this sense, capabilities are intangible which include skills as well as knowledge of employees (Teece, Pisano & Shuen, 1997).In the background of this study, innovation capabilities is also strengths or resources of an organization which determine the performance. These capabilities could be managed through effective knowledge management which is also the intangible asset of SMEs. Thus, the current study is in line with resource-based view(RBV).

Hypothesis Development

Organizational innovation has a vital role in enhancing SMEs performance. It is proven from the literature that innovation has a significant positive relationship with performance. A direct relationship between performance and innovation is well acknowledged in the existing literature (see, for instance, Han, Kim, & Srivastava, 1998; Mavondo, 1999; Va´zquez, Santos, &A´lvarez, 2001). These studies demonstrate that innovation has a positive contribution in organizational performance. However, these studies are missing with knowledge management. As the knowledge management has the key role to introduce new innovations.

According to Darroch (2005), a firm with an effective knowledge management ability will use various resources with more efficient and more innovative than other firms and perform better. SMEs following an innovation strategy attain growth and get advantage in several ways. According to Schumpeter (1934), activity of innovation is one of the great opportunities for different entrepreneurial firms to achieve growth. However, innovation requires knowledge from employees, customers and supplier (Chesbrough, 2006). The management of this knowledge is most crucial part of innovation.

Additionally, learning from innovation process directly affect the SMEs performance (Van De Ven&Polley, 1992) but learning requires effective knowledge management strategies. Knowledge management includes codification and personalization. Codification consisted of knowledge collected from various sources and saved in form of documentation. This is the process in which employees re-use the knowledge (Yousif Al-Hakim, & Hassan, 2013). The ultimate aim of the strategy is to be collecting, classifying, documenting and recording process (Ajith Kumar, & Ganesh, 2011; Greiner, Böhmann, &Krcmar, 2007).Moreover, personalization is a strategy in which employees develop knowledge and share with the help of employee to employees directly. These knowledge management strategies are crucial to bringing innovation.

Learning from innovation generates absorptive capacity which identifies, integrate, and apply knowledge (Cohen & Levinthal, 1990). Absorptive capacity also requires effective knowledge management. It is helpful for SMEs to develop competitive advantage (Zahra & George, 2002) which enhances the performance. Moreover, innovations also include other benefits such as economies of scale, learning economies, limited resources solution and create the ability to set standards (Shepherd & Shanley, 1998).

Furthermore, as the innovation is an idea, discovery, technology or procedure, services or process which fulfils the specific need and replicated at a reduced cost (Rahman& Ramos, 2013), this idea revolves around knowledge from the supplier, customers and partners. In this process knowledge management is a most crucial element. Because, extensive knowledge is compulsory to bring originality which can lead to innovative ideas (Conboy& Morgan, 2011). Hence, innovation and knowledge management havea strong association with each other which automatically effect positively on SMEs

performance.

From above discussion, it is clear that SMEs better performance requires the exploration of innovation activities. Innovation activities need a massive amount of knowledge and ideas. This knowledge cannot be adequately utilized if it is not appropriately managed. Therefore, knowledge management is a crucial element. Thus, it is hypothesized that;

H1: Organizational innovation has a significant relationship with organizational performance.

H2: Organizational innovation has a significant relationship with knowledge management.

Additionally, apart from organizational innovation, organizational performance has also a relationship with knowledge management. As it is discussed above, organizationalinnovationrequire better knowledge management to achieve better performance.

Moreover, findings of Darroch (2005) revealed that knowledge management has a significantpositive role in performance. As discussed, effective knowledge dandling help to gain competitive position (Hall, 1993) which makes organization sufficient capable of enhancing performance. Nevertheless, knowledge management has the positive contribution to improve firm's financial performance (Teece, 1998; Wiig, 1997).

Knowledge management facilitates an organization to excellent use of various types of information (Carneiro, 2000) regarding SMEs which include the information from customers, suppliers, partners and mainly related to competitors and new idea generation. Therefore, knowledge management is vital to enhance SMEs performance directly. Thus, it is hypothesized that;

H3: Knowledge management has a significant relationship with organizational performance.

Nonetheless, from above discussion, it is evident, organizational innovation has a significant relationship with organizational performance and knowledge management. Furthermore, knowledge management has also a significantrelationship with organizational performance. Therefore, by following the instruction of Baron and Kenny (1986), knowledge management could be taken as mediating variable between organizational innovation as well as organizational performance. Thus, in this context, below hypothesis are proposed;

H4: Knowledge management mediates the relationship between organizational innovation and organizational performance.

Method

Use of appropriate method is one of the most crucial steps in research. In this study, quantitative research approach and cross-sectional research design were selected. Data were collected from the managerial employees of SMEs in Pakistan. The 5-point Likert scale was used to obtain the data.

The sample size was selected by using Comrey and Lee (1992) series of inferential statistics. According to Comrey and Lee (1992), 50 respondents sample size is weaker, 100 is weak, 200 is satisfactory, 300 is good, 500 is very good, however, 1000 is substantial. Therefore, in the current study, 200 sample size was selected.

Firstly, whole Pakistan was divided into five clusters (Punjab, Sindh, Balochistan, Khyber Pakhtunkhwa, Gilgit-Baltistan) based on provinces. Secondly, three clusters (Punjab, Sindh, Gilgit-Baltistan) were selected randomly. Thirdly, questionnaires were distributed randomly in each selected cluster. From each selected cluster, managerial employees of SMEs were contacted, and survey questionnaires were sent via mail. Thus, two hundred (200) questionnaires were distributed, and only eighty-seven (87) were returned. Seven (07) were incomplete and excluded from the study. Therefore, eighty (80) responses were used to conduct the analysis. The response rate was 40%.

SmartPLS 3 was utilized to analyze the data. The reason to use SmartPLS is a small sample. As different studies demonstrate that SmartPLS is one of the suitable tools for small sample size (Reinartz et al., 2009; Rigdon, 2016). In the current study, only 80 valid responses are received. Hence, SmartPLS (SEM) was used to find out the results.

Measures

All the measures are adapted from prior studies. Organizational innovation is measured based on internal innovation of SMEs. These measures are adapted from Hameed, Basheer, Iqbal, Anwar, and Ahmad (2018). Moreover, knowledge management is measured through five items adapted from Lee, Lee, and Kang (2005) and Lowson (2002). Finally, organizational performance is measured through seven items adapted from Lowson (2002).

Data Analysis and Results

Measurement Model Assessment

SmartPLS3 Algorithm was used to assess the measurement model of the current study. In this process, factor loading, reliability and AVE was examined. Convergent validity was attained through internal consistency of items. Moreover, to access the external consistency, discriminant validity was examined. In discriminant validity value of the variables were compared with the square root of AVE.

In the current study all the constructs having Cronbach's

alpha more than 0.9 (α >0.9), which revealed that alpha coefficient is excellent, as shown in Table 1. Moreover, factor loading is more than acceptable range (0.7). Therefore, there is no issue with internal consistency or convergent validity. According to the instructions of Hair et al., (2014), composite reliability should be more than 0.7 which is achieved. Table 2 shows that the square root of AVE is more than the correlations among variables. Thus, discriminate validity is attained which means that there is no issue with external consistency. Average variance extracted (AVE) should be 0.5 or more (Hair et al., 2014). In this study, all the constructs have average AVE more than 0.8. Hence, the discriminant validity is attained, shown in Table 2. Additionally, Figure 2 shows the PLS outer model assessment.

Figure 2. Measurement Model Assessment

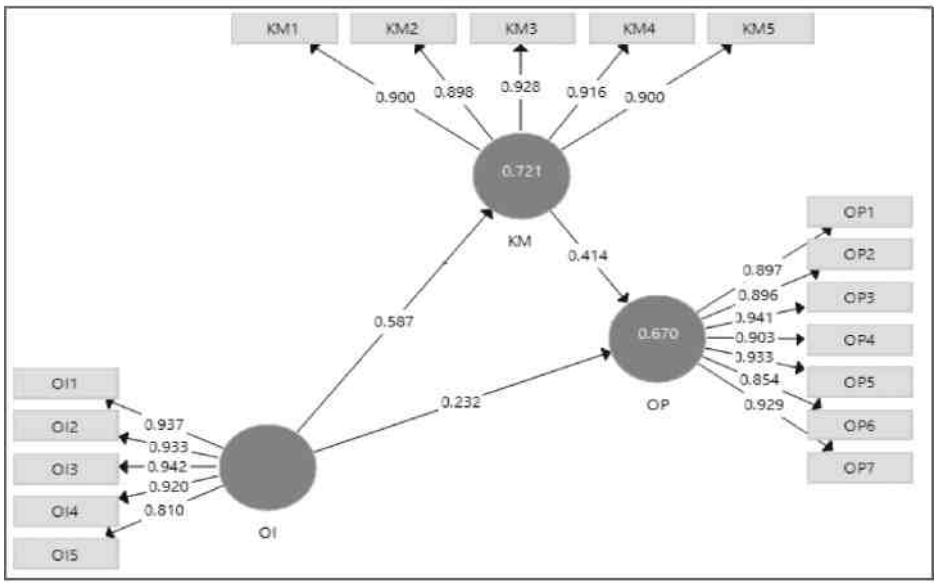


Table 1. Reliability and Validity

Construct	Items	Loadings	Cronbach 's alpha	Composite Reliability	AVE
Organizational Innovation (OI)	OI1	.937	.947	.960	.828
	OI2	.933			
	OI3	.942			
	OI4	.920			
	OI5	.810			
Knowledge Management (KM)	KM1	.900	.947	.959	.825
	KM2	.898			
	KM3	.928			
	KM4	.916			
	KM5	.900			
Organizational Performance (OP)	OP1	.897	.964	.970	.824
	OP2	.896			
	OP3	.941			
	OP4	.903			
	OP5	.933			
	OP6	.854			
	OP7	.929			

Table 2. Discriminant Validity

	EO	KM	OI	OP
EO	**0.902**			
KM	0.792	**0.908**		
OI	0.853	0.836	**0.910**	
OP	0.749	0.785	0.768	**0.908**

Structural Model Assessment

Direct Effect

The structuralmodel assessment was performed through SmartPLS Bootstrapping. Firstly, direct effect was examined by considering the t-value and path coefficients. According to Henseler et al. (2009), the path coefficients similar tostandardize beta coefficient and regression analysis. Bootstrapping is shown in Figure 3 and results are shown in Table 3.

As it is given in Table 3, direct effect of all variables on dependent variables is significant. All the relationships have t-value more than 1.96. The relationship between organizational innovation and organizational performance has t-1.969 and, knowledge management and organizational performance 2.418. Moreover, all the relationships have a positive beta coefficient. Therefore, all hypothesis (H1, H2,H3) related to the direct effect is accepted. Additionally, effect size (f2) is shown in Table 3. In the current study, all the variables have moderate effect size (f2) (Cohen, 1988).

Figure 3. Structural Model Assessment

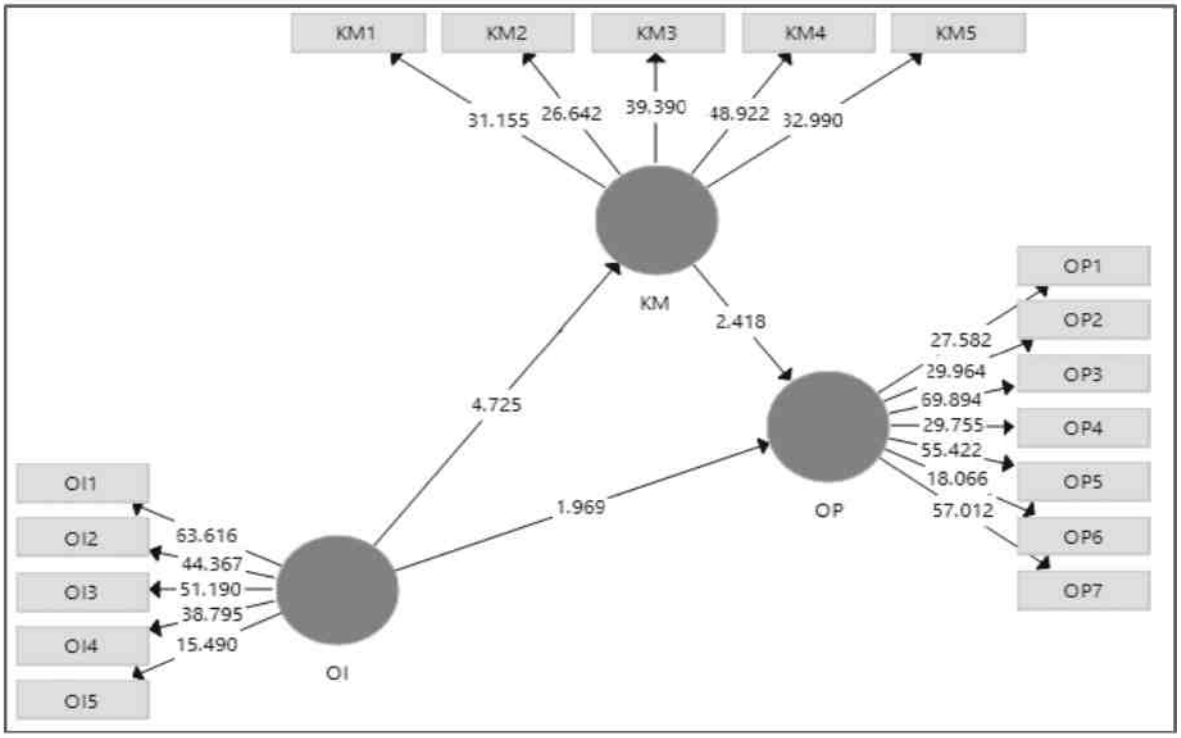


Table 3. Direct Effect

	(β)	(M)	(STDEV)	T Statistics	P Values	(f^2)
KM -> OP	0.414	0.398	0.171	2.418	0.016	0.145
OI -> KM	0.587	0.572	0.124	4.725	0.000	0.336
OI -> OP	0.232	0.232	0.118	1.969	0.050	0.033

Table 4 shows the R-square (R2) value is 67%. This suggests that all the sets of exogenous latent variables (organizational innovation, knowledge management) collectively explain 67% of the variance in organizational performance. Chin (1998) described that, R2 value or above 0.67 is substantial, more than 0.33 is moderate, and a value below 0.33 but above 0.19 is weak determination. In the current study, R2 value is 0.67 which is substantial. Moreover, the predictive relevance (Q2) of direct relationship model is also more than zero.

Table 4. R-Square (R^2)

Variable	***(R^2)***
Organizational Performance (OP)	67%
Knowledge Management (KM)	72.1%

In-direct Effect

Resampling mediation-technique was used to examine the mediation effect. This technique is one of the suitable technique while analyzing mediation effect (Zhao et al., 2010; Hayes, 2009). Mediation through PLS-SEM is also best suited because it is appropriate with a small sample (Hair et al., 2014). By following the instructions of Hair et al. (2014), mediation was examined by following Preacher and Hayes (2004, 2008).

Below Table 5 shows the results of mediation (In-direct effect). In this case, mediation is significant with t-value 2.097, β-value 0.463. Therefore, knowledge management mediates the relationship between organizational innovation and organizational performance. Hence, H4 is supported.

Table 5. In-Direct Effect

	(β)	(M)	(STDEV)	T Statistics	P Values	Decision
OI -> KM-> OP	0.463	0.463	0.116	3.992	0.000	Mediation

Predictive relevance (Q2) of mediation model is shown in Table 6. To examine Q2 PLS Blind folding technique is utilized. O2 clarifies the quality of the overall model. According to Henseler, Ringle and Sinkovics (2009), the Q2 value should be greater than zero, shown in Table 6.

Table 6. Predictive relevance (Q^2)

Total	SSO	SSE	Q^2 = (1-SSE/SSO)
Organizational Performance (OP)	560.000	273.981	0.511
Knowledge Management (KM)	400.000	178.873	0.553

Discussion

Findings of the study revealed a significant relationship between organizational innovation and SMEs performance with p-value 0.05. β-value 0.232 which shows a positive association between organizational innovation and SMEs performance. These findings are consistent with prior studies (see, for instance, Avlonitis & Gounaris, 1999; Han, Kim, & Srivastava 1998; Va´zquez, Santos, & A´lvarez, 2001). In line with the current study, these studies also show a strong association between organizational innovation and SMEs performance. SME's internal innovation expediates the SME's performance.

Additionally, SMEs internal innovation can be improved through effective knowledge management. As this study found a significant positive association between organizational innovation and knowledge management with p-value 0.00, β-value 0.587. Innovation also requires the creation of new idea through external and internal knowledge (Chesbrough, 2006) which requires management of internal and external knowledge. Most of the SMEs do not have proper knowledge management system which effects the entrepreneurial activities and automatically decreases the performance. Moreover, it is found that knowledge management has significant positive relationship with SMEs performance with p-value 0.016 and β-value 0.414. Moreover, knowledge management mediates the relationship between organizational innovation and organizational performance with t-value 3.992 and β-value 0.463.

By sum up, it is found that organizational innovation has a significant positive relationship with knowledge management and SME's performance. Moreover, knowledge management also has a significant positive relationship with organizational performance. Additionally, it is found that knowledge management mediates the relationship between organizational innovations and organizational performance.

Conclusion

This study was conducted to investigate the role of knowledge management in SME performance in Pakistan. Majorly this study focused on the effect of organizational innovation on organizational performance through effective knowledge management. This study focused on all SMEs in Pakistan. Selection of SME sector based on the reason that the performance of Pakistani SMEs is declining which affect adversely on the economy. Data were collected through questionnaire from all over Pakistan via mail survey.

Results of the study revealed that both organizational innovations have a strong association with SMEs performance. Increase in organizationalinnovation expedites SMEs performance. The decrease in organizationalinnovation decreases the SMEs performance. Therefore, higher organizational innovation is required to eliminate the issue to low SMEs performance. However, maximization of organizationa linnovation is one of the challenges in SMEs. SMEs are unable to maximize the innovation activities. But, this study revealed the fact the effective knowledge management has the ability to optimize organizational innovation practices. Knowledge management plays a vital role to accelerate the process of internal innovation in SMEs. Thus, knowledge management encourages the positive effect of organizational innovation towards SMEs higher performance. Hence, effective knowledge management is most significant to resolve the issue of low SMEs performance, particularly in Pakistan.

It is recommended for SMEs to enhance the organizational innovation activities through effective knowledge management strategies. SMEs may focus on knowledge management strategies, namely; codification strategy and personalization strategy. Researchers are invited to investigate the effect of these knowledge management strategies on SMEs performance. Hence, future research is required to analyze the impact of codification strategy and personalization strategy on SMEs performance.

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