Effects of knowledge management practices on innovation in SMEs

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C H R O N I C L E	A B S T R A C T
	The management of knowledge assets is crucial for gaining competitive advantage and has a huge strategic importance for the firms. Knowledge management has become one of the emerging fields in today's research world and has turned out to be a major concern for the organizations as it plays a crucial role in the growth and development of the organization. Knowledge management is a new concept that is why it is gaining increased attention among small and large organizations. In this study three important knowledge management practices are discussed and the necessary insights regarding knowledge management processes and their positive impacts within an organization are provided. The study also brings forth the relationships which knowledge management processes have with radical innovation in small and medium enterprises. The explanatory method of research and quantitative type of research to test the hypothesis of research was used to carry out the study and survey type was involved by using questionnaire. The knowledge management and innovation instruments were adapted from previous researchers. This study's target population consisted of small and medium-sized enterprises that included service sectors in Quetta, Balochistan. A convenient sampling was applied to collect the necessary data from SMEs. A total of 850 firms were communicated and requested to participate in this survey but 300 (35.6% response rate) accepted to fill out the survey questionnaire. The study utilized structural equation modelling to examine numerous complex cause and effect relationships between variables. The results indicate a positive association between Knowledge management processes and radical innovation. The positive link between Knowledge management processes and innovation indicates the importance and value of knowledge management in achieving competitive advantage through innovation.

1. Introduction

Over the past decade, one of the most important evolutions in the business environment is the associated with new economy. The business environment can be summarized in terms of six key trends: predispositions and preferences; increasing competition and globalization; new profiles of workers; changing organizational structures; communication technology and advances in information; and the rise of knowledge management (KM) (Handzic, 2006). A competitive incentive has been created due to dynamic nature and velocity of markets among many companies to increase their knowledge resources as a mean of creating value and achieving competitive edge (Evangelista et al., 2010). The basic concept of

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knowledge management implies that the firms that manage their individuals and organizational knowledge compete better in the competitive and new business environment. Knowledge management is seen as an essential factor in sustaining competitive edge and realizing success of the organizations for improved innovation and efficiency (Darroch, 2005; Du Plessis, 2007). Evangelista et al. (2010) argue that the critical area for the organizations is to focus on KM since it provides new tools for survival, growth and sustainable competitive edge to the firms. Large organizations and small and medium enterprises (SMEs) have recognized and accepted the effect of KM on overall performance of the organizations (Choochote, 2012; Zack et al., 2009).Knowledge management has played an essential role for all types of organizations for the business operations (Aamegdadi et al., 2012). The practicing of KM and business growth both are highly correlated, as the higher the knowledge management practiced within the organization, the higher the growth of the firm. In the knowledge driven economy, the tools, methods and concepts of knowledge management are recognized to be important for the organizations. Faster innovation, knowledge sharing and improving decision making, managing knowledge resources, reducing duplication of work and improving business processes are some important reasons for the organizations to undertake a KM initiative (Imran et al., 2019). Nevertheless, a very slow way is made by Knowledge management to SMEs (Gourova, 2010).

Several studies have analyzed the impact of KM on innovation in organizations (A Rahman et al., 2009b; Akram et al., 2011; Andreeva & Kianto, 2011; Darroch & McNaughton, 2003; Du Plessis, 2007; Gloet & Terziovski, 2004; MIHĂESCU & STĂNIȚ, 2014; Nawaz et al., 2014; Obeidat et al., 2016; Rahim et al., 2015; Tariq et al., n.d; Valdez-Juárez et al., 2016). Innovation in the quick changing business environment, has become an integral part of each firm. The speed of innovation has altered the nature of global economic growth which has been made it possible by rapidly growing technology, shorter product lifecycles and an increasing rate of development of new products (Du Plessis, 2007). According to Darroch and McNaughton (2003) firms are more innovative and gain superior financial performance when they adopt more KM practices. But due to extensive competitive pressure, varying consumer requirements, rapid technological change and advancement in the expansion of knowledge available to the firms, innovation has become more complicated. The firms should identify and manage the complexity generated by the explosion of richness and reach of knowledge to ensure successful innovation because innovation is highly reliant on accessibility of knowledge (Du Plessis, 2007).

The objective of the study is to inspect the association between KM and innovation in Pakistani SMEs. KM is one of the emerging fields in today's research world but in developing countries it has gained a little attention. There is a lack of understanding in SMEs in developing countries mainly in Pakistan regarding KM practices. Only a few studies have been conducted in Pakistan regarding KM and these studies are limited to larger organizations (Nawaz et al., 2014; Rehman et al., 2010; Tariq et al., n.d). SMEs being an important sector in Pakistan has been given less importance in research area despite their huge contribution in international and national markets. The lack of research in knowledge management in Pakistan has caused SMEs to focus less in this area. This area is less known to managers and entrepreneurs because there is a lack of awareness regarding its benefits though knowledge management processes have huge impact on the success of the firms particularly in SMEs due to its low-cost impacts (Imran, Aziz, & Hamid, 2017; Imran et al., 2018). A quick study is required in this field in SMEs because of huge importance it is gaining as a resource in organizations. The study conducted on KM dimensions and their associations with innovation in small and large organizations in different parts of the world particularly in developed countries context has shown mixed results (Rahman et al., 2009b; Allameh & Abbas, 2010; Darroch & McNaughton, 2003; MIHĂESCU & STĂNIȚ, 2014; Valdez-Juárez et al., 2016). While compared to other countries, Pakistan has a different culture and SMEs face different challenges which make it necessary to conduct KM studies in context of Pakistan.

2. Literature Review

2.1 Knowledge management

The importance of KM has been recognized by the firms for a long time since KM is perceived as a main cause of competitive advantage. Knowledge management covers activities in almost all managerial areas as it is a viewpoint as a whole on firm management (Salojärvi et al., 2005). A procedure of KM of all kinds continually exploit and recognize acquired knowledge assets to meet existing and emerging requirements and to grow new opportunities (Quintas et al., 1997). In a competitive market, the success of businesses relies on knowledge quality which the firms implement to the processes of their business (Civi, 2000). It serves to the issues of organizational survival, competence and adaptation in the increasingly irregular environmental change (Civi, 2000). KM has become an important strategy within the organizations as the advantage gained from it is increasing with increase in competition. The need to focus on KM within the firm results from both market and economic-driven necessities are formed by international competition and customer demands (Wiig, 1997, p. 9). In the present era, customers have become more demanding as they want and demand products that fulfill their needs to a greater advantage. Customers – individual consumers and industrial companies alike – require products and services that will make them more successful in their own pursuits and provide them with the best possible advantages (Wiig, 1997, p. 9). Competition for the provision of the best products and services based on relevant knowledge has become international as customers awareness has increased with the rise in education and skills of craftspeople and professionals in all over the world (Wiig, 1997). KM has become a success tool for these organizations to compete in a competitive environment.

2.2 Innovation

Innovation is the process where new knowledge is acquired, disseminated and integrated for generating new knowledge, which embodies products and services. Innovation is basically adopting new ideas for the new technology, new product, new services etc. New ideas about product, service, organizational structure or technology are the change that could be new to the organization and new to the world i.e. radical innovation. Innovation is the development of new ideas and knowledge that results in improvement of internal business structures and business processes and creation of new market driven products and services (Du Plessis, 2007).

A firm's survival depends mostly on firm innovation and the need for innovation arises from client demands, increasing competition and new market areas (MIHĂESCU & STĂNIŢ, 2014). Organizations with low capability to bring innovative services or products are wiped out of the market by the competitors because in order to develop in any type of environment, firms should work on innovation which is considered as a fuel for the organization (Akram et al., 2011). Firms internal competencies such as organizational skills in developing, finding, enlarging and adopting knowledge generated and the interactions of organization with surrounding environment are some of the main organizational ability on which innovation basically depends (Obeidat et al., 2016, p. 1221). The creativity of knowledge workers has a main part in innovation that is presented in the market (Carneiro, 2000, p. 95). However, innovation has become complex, difficult and costly due to variation in preferences of consumers, radical and rapid technological changes and extensive competitive pressure. Therefore, it has become difficult for the firms specifically for small firms to internalize innovation.

2.3. Knowledge management and Innovation

The significance of KM has increased in organizations for the past few years. This is because the firms have realized that in order to perform better in the competitive market, they need to enhance the best utilizations of their resources. The focus of KM is to manage the human resources who keep such knowledge, not the knowledge itself. Any organization needs to create such environment in which trust is developed among employees and the management and all employees share their knowledge with each

other which contributes to innovation and successful performance of their companies. As the KM and intellectual capital constructs are emerged, practitioners added them as possible antecedents of innovation (Nawaz et al., 2014). The power of management competence and innovation capital in today's organizations depends on customer's needs satisfied with services or products received from the market (MIHĂESCU & STĂNIȚ, 2014, p. 137). The creation of knowledge is the foundation of innovation and underlines the presence of strong connection between knowledge and innovation (MIHĂESCU & STĂNIȚ, 2014, p. 138). Innovation of processes, products and structures has become an important component for the success of the firms and KM contributes a major part in bringing profound changes in operation and competition in the new economy (Allameh & Abbas, 2010). The innovative firms basically emphasis on new knowledge and processes of knowledge as they continuously inspire people to create overall allowing context for creation of knowledge. Instead of solely focusing on innovation, KM causes the innovation to take place by creating an environment. According to Allameh and Abbas (2010), KM processes such as knowledge acquisition, knowledge dissemination and responsiveness to knowledge are highly involved in innovative process of the firms. As cited by Obeidat et al. (2016, p. 1217), Wai Ling et al. (2009) explain that firm should acquire and share knowledge to their best in organization in all parts of their works and practice the knowledge in their processes to enhance innovation. So, on the basis of above evidence the following hypothesis is offered:

H$_1$: There is a positive significant relationship between Knowledge management and innovation.

2.4 Knowledge management dimensions and type of innovation

People have recognized the need to measure and to understand the activities of KM with the intention that organization can do better so that governments can form and adapt policies to encourage these advantages (Omerzel, 2010). KM is one of the less known aspects of knowledge related investments i.e. training, education and R&D. KM cannot be measured directly that is why there is a need to identify some of the KM dimensions to measure KM. Many firms still struggle to measure KM dimensions and its impact on economic benefit although it is a widely accepted business practice (Omerzel, 2010). At this point the management of organization has to find the right mix of form of measurement for each specific program or organization as the form of measurement across organizational contexts can differ (Omerzel, 2010). Although limited work has been accomplished on the relationship between KM dimensions and innovation but based on these limited studies, it is found that there is a significant relationship between each given dimension and innovation (Rahman et al., 2009b; Darroch & McNaughton, 2003; MIHĂESCU & STĂNIȚ, 2014; Nawaz et al., 2014). We will discuss some of the important dimensions here. KM is the initial stage in the KM activities as for managing knowledge, it must be acquired or captured and stored which is to some extend expensive and complex as well as its basic limitations are time, cost and subjectivity (Obeidat et al., 2016, p. 1217). It is basically the process of obtaining new knowledge while using existing knowledge for innovation and better performance (Mills & Smith, 2011). According to Fugate et al. (2009) knowledge dissemination is the timely sharing of knowledge with appropriate personnel within the firm. According to Rahim et al. (2015) knowledge responsiveness is by using existing knowledge organizations can respond to the knowledge required within the firm. It is the development of quick solution and acting on the response by using the available knowledge (Fugate et al., 2009). Radical innovation that is, new products, processes, services and new markets, requires new competences and skills and thus making existing competences and knowledge redundant (Darroch & McNaughton, 2002; Du Plessis, 2007).

Innovation has the ability and capacity to solve problems, improve performance, create competitive advantage and add value to organizations (Gloet & Terziovski, 2004) and effective KM is a method for improving performance and innovation (Darroch & McNaughton, 2002; Nawaz et al., 2014). In order to innovate, organizations need to acquire knowledge about external and internal forces to gather a variety of knowledge. Knowledge is basically acquired when capability of knowledge workers is enhanced for managing knowledge assets (Rahman et al., 2009b). This capability increases when employees collabrate and coordinate for gaining access to the knowledge (Du Plessis, 2007). For the greater likelihood of

innovation firms not only need to acquire but also share the new knowledge with the individuals within each level and department of the firm. Firms that are more responsive to knowledge are considered more innovative. The initial results of all research show that KM dimensions positively affect innovation i.e. firms with knowledge management capability is likely more innovative (Rahman et al., 2009a; MIHĂESCU & STĂNIŢ, 2014; Nawaz et al., 2014). Therefore, organizations should struggle for a combined approach to KM to maximize innovation performance that further leads to competitive advantage (Gloet & Terziovski, 2004, p. 408). To the innovative firms the two dimensions of KM i.e. knowledge dissemination and knowledge responsiveness represent the potential for improving performance and creating sustainable competitive advantages (Darroch & McNaughton, 2003). Since, in order to respond to and disseminate knowledge firms depend on their own formal structures, experiences and skills of individuals, informal relationships and peculiar mixture of path dependence. These two dimensions of KM are important for creating strategic positioning such as innovation (Nawaz et al., 2014). Thus, these two dimensions of KM are unique and hard to imitate and because of such characteristics both practices have direct association with innovation and firm performance. However, some studies connecting parts of knowledge dissemination and innovation have provided mixed results. For instance, Ittner and Larcker (1997); Li and Calantone (1998); Sethi (2000); Song and Parry (1997) and Tang (1998)) discussed that inter-functional coordination and human resource practices positively impact innovation (as cited in Darroch & McNaughton, 2002, p. 212). While according to Amabile et al. (1996); Anderson and West (1996); Hurley and Hult (1998); Kitchell (1995) and Tang (1998) permitting people the time for innovation and encouraging work group behavior provides mixed results (as cited in Darroch & McNaughton, 2002, p. 212). There is a dearth of research linking KM practices and radical innovation. In order to have any impact, different types of innovation need various core competencies and resources that is why organizations need to recognize various kinds of innovation in research (Darroch & McNaughton, 2002, p. 212). As to create new to the world innovation i.e. radical innovation, firms require new capabilities such as new business or scientific expertise along with KM capabilities in an organization. Du Plessis (2007) agrees that the firms that focus on radical innovation are likely successful due to its capability to generate high returns and make firm more competitive in a market than other types of innovation. So above discussions offer following hypothesis:

H1a: There is a positive significant relationship between Knowledge acquisition and radical innovation.
H1b: There is a positive significant relationship between Knowledge dissemination and radical innovation.
H1c: There is a positive significant relationship between responsiveness to knowledge and radical innovation

3. Methodology

3.1. Sample

The association between KM dimensions and radical innovation in Pakistani SMEs was studied by conducting a questionnaire survey in city of Quetta, Pakistan. The statistical population of this study consists of small and medium-sized enterprises (SMEs) that include service sectors in Quetta, Balochistan. Basically, the top managers or the entrepreneurs (owners) themselves were the main respondents (Imran et al., 2016). Due to the absence of statistics for service sector in Quetta city, a convenience sampling was used for data collection. The sample was based on 850 firms with 10 or more employees.

3.2. Data collection

It was not an easy task for the researchers to collect data from each of the service sector of Quetta, Balochistan. So, the researchers collected the necessary data personally from those enterprises which were conveniently available. It took researchers five months to collect data from different service sectors in Quetta city. Some of the organizations denied filling out the questionnaire on the same day instead asked to contact them later. The researcher took an appointment for another day, contacted and filled the

questionnaire out on the proposed day. For some managers it was difficult to understand how to fill out the questionnaire and that was why the researchers had to explain the procedure for them. The researchers did not choose to collect data via email or postal survey method instead contacted personally the manager or owner of the enterprise because low education level of some SME managers or owners and their low command of the written English language. The enterprises were first asked about the number of employees and size of their workforce because those organizations that did not fulfill the requirements i.e. 10-250 employees were replaced by contacting another organization. Some of the organizations declined to participate due to some confidential issues though the participants were informed before that their information would be kept confidential and data would be used only for statistical analysis. A total of 850 firms were communicated and requested to participate in this survey but 300 accepted to fill out the survey questionnaire. That's why this survey achieved 35.6% response rate. The procedure was explained to each participate and assured them that their information would be preserved as confidential. Each of the questionnaire was filled out either by the manager or owner in each enterprise. All of the 300 questionnaires were collected from service sectors in Quetta. Out of 300 firms 268 were small firms and 32 were medium firms.

4. Measures

The questionnaire had various sections that represented each of the variables. The KM and innovation instruments were adapted from Darroch (2003), Fugate et al. (2009), Gold and Arvind Malhotra (2001) and Wang and Chen (2013). The pilot study was conducted in 10 different service sector SMEs in Quetta, Pakistan. Based on the result of the pre-testing, the survey instrument was presented to the selected sample. Exploratory factor analysis was performed to check whether the constructs in concept are valid and loading of each item on each construct. All the items were valid, and no deletion was done as factor loading value for each construct was greater than 0.4. A reliability analysis indicated a Cronbach's alpha value of greater than the cut-off level i.e. 0.7 for all scales. The model in Fig. 1 depicts two main variables including Knowledge management and Innovation. The direct measurement of both the variables is somewhat difficult that is why three dimensions of KM and a type of innovation for measuring both the variables (KM and Innovation) are included in the study. It further represents the relationship among independent and dependent variables used in this research.
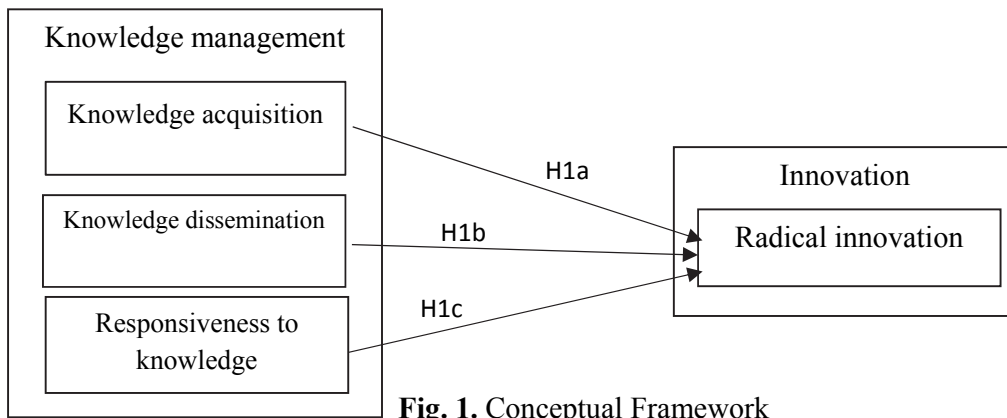

Fig. 1. Conceptual Framework

Table 1 summarizes the measurement scales and measurement instruments used in respect of various constructs.

Table 1
Measurement scales and instruments

Constructs	Scale	Literature
K-Acquisition	7-point Likert	Gold and Arvind (2001)
K-Dissemination	7-point Likert	Fugate, Stank & Mentzer (2009)
Responsiveness to Knowledge	7-point Likert	Fugate, Stank & Mentzer (2009)
Radical Innovation	5-point Likert	Darroch (2003), Wang & Chan (2013)

5. Results

5.1. Analysis of the Measurement Model

Confirmatory factor analysis (CFA) is basically a method that is used to reject or accept the measurement theory and to examine the measurement model. Basic measures used to check goodness of fit includes χ^2/degrees of freedom, comparative fit index (CFI), goodness-of-fit index (GFI) and root mean square error of approximation (RMSEA). The CFA result for complete measurement model show that the measurement model fitted the data i.e. the CFA confirmed the structure of formative assessment scale. Every model-fit indices exceeds the benchmark, signifying that the measurement model is well fitted with the responses collected from respondents. All the model fit indices are given in Table 2.

Table 2
Model fit indices for formative assessment Scale (Measurement model)

	χ^2	df	χ^2/df	GFI	CFI	IFI	RMSEA
Acceptable fit			<3	>0.90	>0.90	>0.90	<0.08
Model	362.415	196	1.849	0.90	0.919	0.921	0.053

The measurement model's internal consistency is determined by composite reliability. This is quite like that of Cronbach's alpha but it also considers the actual factor loadings instead of every item is weighted equally in the composite load determination (Rahman et al., 2009b, p. 22). Bargozzi and Yi (1988) recommends 0.6 benchmark for composite reliability of all constructs (as cited in A Rahman et al., 2009b) and Table 3 shows that all values exceed the benchmark. Convergent validity is defined as the degree to which many items of a variable agree with one another (Rahman et al., 2009b, p. 22). A weak convergent validity occurs when AVE value is below 0.5 and item factor loading is below the standardized value i.e. 0.4 (Jalees & de Run, 2014; Migdadi, 2005). Some of the AVE values are a bit lower than the benchmark value i.e. 0.5 (as shown in Table 3). Since the values of composite reliability and factor loadings are above the benchmark, it can be accepted as AVE is a more conservative measure (Raziq, 2012). Therefore, researchers can depend on CR values and factor loadings for addressing convergent validity. Measurement model in this study shows items factor loading above the recommended or standardized value Thus, it concludes an existence of convergent validity. A correlation between the measures of associated constructs examines the discriminant validity (Rahman et al., 2009b, p. 22). To fulfill the discriminant validity, the correlations between the constructs or on basis of one to one should be less than 0.85 (Jalees & de Run, 2014, p. 25). After analysis the results show that for each variable the square correlations are fewer than values of variance extracted by the items that measure the specific variable (as shown in Table 3), showing that variables are not correlated, and that discriminant validity is attained.

Table 3
Composite reliability, Convergent and Discriminant validity

	CR	AVE	KR	KA	RI	KD
KR	0.781	0.418	0.646			
KA	0.732	0.408	0.3	0.639		
RI	0.753	0.506	0.302	0.351	0.711	
KD	0.722	0.508	0.476	0.338	0.201	0.639

5.2. Structural model results

The overall SEM model comprised of three exogenous and an endogenous variable namely Knowledge acquisition, Knowledge dissemination and Responsiveness to knowledge as exogenous variables and Radical innovation as an endogenous variable. The CFA result for each exogenous variable and an endogenous variable has been described in previous section, the complete final model is shown in Fig. 2. The structural equation modelling (SEM) was used to test the casual structure of the research model. As indicated in Table 4, the model-fit indices of SEM exceeds the benchmark values, indicating that the data and the model were well fitted.
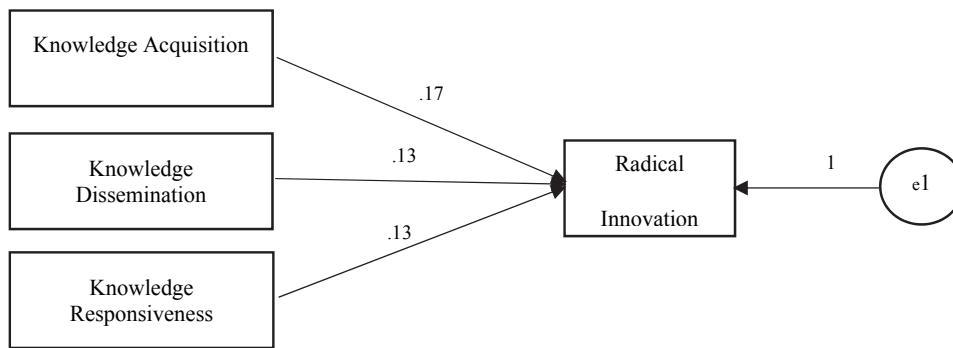
Fig. 2. SEM Structural Model

Table 4

Model fit indices for formative assessment Scale (Structural Model)

	χ^2	df	χ^2/df	GFI	CFI	IFI	RMSEA
Acceptable fit			<3	>0.90	>0.90	>0.90	<0.08
Model	2.7	1	2.7	0.986	0.964	0.970	0.07

The results in Table 5 show that knowledge acquisition (path coefficient = 0.156, p <0.05), knowledge dissemination (path coefficient = 0.130, p<0.05), and responsiveness to knowledge (path coefficient = 0.131, p<0.05) are positively related to radical innovation. Hence, hypotheses H1a, H1b and H1c are supported. Therefore, there is sufficient evidence to support H1 i.e. Knowledge management positively affect innovation.

Table 5

Hypothesis Results

Hypothesized Path	Standardized estimates	Critical Ratio	Sig. level	Supported
Knowledge Acquisition and Radical Innovation	.156	2.581	0.00	Yes
Knowledge Dissemination and Radical Innovation	.130	2.246	0.02	Yes
Responsiveness to knowledge and Radical Innovation	.131	2.156	0.00	Yes

6. Discussion

Knowledge management practices are the major process that are implemented basically in larger organizations, but our result proves that not only KM is practiced in larger but also in SMEs. Each dimension has an equal contribution in organization business operation and business growth of SMEs. Furthermore, our result confirms that each KM practice i.e. Knowledge acquisition, Knowledge dissemination and Responsiveness to knowledge impacts positively radical innovation. The positive affect of each dimension of KM on type of innovation exposes that overall KM process has a positive effect on innovation process.   As previously mentioned that the goal of the study was to explore the impact of KM practices (knowledge acquisition, knowledge dissemination, responsiveness to knowledge) on innovation in Pakistani particularly Balochistan SMEs. Starting with Knowledge management practices, the results presented that the three practices have positive significant effect on innovation. This result is consistent with Allameh and Abbas (2010) who showed that the three knowledge management dimensions have a strong affect upon innovation and these dimensions have stronger impact upon radical innovation than other types of innovation. Knowledge acquisition has an important contribution on firm performance and innovation. When more ideas are extracted and exploited from internal or external sources, employees subsequently transform these sources into new knowledge that results into innovation. So, according to this study, knowledge acquisition has a strong effect on innovation which is partially consistent with Valdez-Juárez et al. (2016) and fully consistent with Tamer Cavusgil et al.'s (2003) results. In general, the knowledge obtained from different sources increases firm's innovative capability. For an innovative firm, developing an association with other firms plays a significant role in gaining knowledge. These close relationships provide firms with opportunities to obtain resources required for the firm. Based on

current point of view of the respondents and previous studies, knowledge acquisition and knowledge dissemination have a huge impact on innovation. Obeidat et al. (2016) supported this result as according to him Knowledge acquisition effected innovation when the stock of knowledge increases through hiring new individuals, leasing external knowledge, buying another organization, generating research and development unit for acquiring new knowledge and having employees who have the openness to learn new skills and can create new knowledge. The knowledge dissemination had the greatest effect on innovation as the more information or knowledge was shared within the firm or among the firms, the more innovative would be the organization. The study found that the knowledge management activities have significant influence on innovation practices. This finding supports the declaration by Rahman et al. (2009a); Andreeva and Kianto (2011); Gloet and Terziovski (2004); Huang and Li (2009) and Ugwu and Ekere (2018) that firms with high level of actions in knowledge management practices are more likely to offer innovative products and services to their customers. This is explained by the fact that acquiring or creating knowledge from different sources is an important aspect of innovation in the firms. In the same way, the firms that promote knowledge sharing/disseminating practices between employees, is likely to create new thoughts for innovation. Sometimes knowledge management processes and innovation processes are unchangeably used because knowledge management process refers to the identification, acquisition, dissemination or transfer of new knowledge and innovation is a result of effective implementation of the new knowledge. Thus, firms ought to have capabilities for knowledge management to be able to offer innovative processes.

The three dimensions of knowledge management are the basis for innovation. This study shows that all three dimensions equally effect innovation but Nawaz et al. (2014) and Darroch and McNaughton (2002) result does not support completely researcher's result. According to these researchers, knowledge acquisition and responsiveness to knowledge have a positive impact on innovation but knowledge dissemination does not affect innovation i.e. radical innovation. So, the two dimensions i.e. responsiveness to knowledge and knowledge acquisition are more important than knowledge dissemination. Since, this study is partially supported by Nawaz et al. (2014) and Darroch and McNaughton (2002) but it is fully supported by Palacios, Gil, and Garrigos (2009). According to Palacios et al. (2009), knowledge management helps to develop some abilities such as acquisition of internal knowledge, sharing or dissemination of accumulated knowledge and response to the external sources that leads to innovation. Organizations should understand KM as an institutional mechanism that stimulates the management of all types of knowledge that is dispersed through the organization. Knowledge has an invaluable role and positively affect innovation in a firm. Du Plessis (2007) and Rehman et al. (2010) conclude the same result. When the value of Knowledge management process increases, it ensures a more effective and efficient innovative process further. Knowledge management processes are used as a tool to change current resources into valuable resources. It assists collaboration, steady knowledge based growth, building competencies and ensuring knowledge flow for innovation processes. The knowledge management process provides a knowledge driven culture where innovation is valued and encouraged. Employees in such culture are encouraged to share and disseminate information and respond to external forces. For a firm, to compete in a competitive environment, must use KM as a tool to differentiate it from other organizations.

7. Conclusion

The study seeks to inspect the effect of Knowledge management dimensions on innovation type in SMEs in Balochistan. The basis of the research model is theorized from an assessment of the related literature, particularly on links between knowledge management and innovation. The research model expresses the association between all the constructs of the research. The variables of the research are defined by knowledge management dimensions and innovation type. The knowledge management dimensions consisting of knowledge acquisition, knowledge dissemination and responsiveness to knowledge were the independent variables, whereas innovation type such as radical innovation was dependent variable. The links between these variables were constructed from the literature into three research hypotheses that directed this research and were verified at 0.05 significance level. To test the hypotheses or to confirm the research model, a SEM approach was used that directed this research. It was found that knowledge

management practices impacted innovation type positively. This shows that SMEs in Balochistan, Pakistan with high actions in knowledge acquisition, knowledge dissemination, and responsiveness to knowledge are more likely to provide innovation. The study brings understanding of how SMEs sees knowledge management and innovation and the part of knowledge management in bringing about variations in innovation in SMEs. It is necessary for SMEs to understand the impact of knowledge management on innovation because it is a mean of defining whether the SMEs in Balochistan, Pakistan are prepared to apply knowledge management or not. This research has revealed that adopting knowledge management would lead to innovation in SMEs in Balochistan that are confronting the financial and other resource constraints currently. The nature of this study may have affected the results of this study. The benefit attached with the concept of knowledge management is not fully understood by the SMEs as more SMEs are unaware of this process. The reason behind this problem is the incapability of the firms to use internal resources efficiently. SMEs are in great disadvantage due to lack of formal internal structure that resists them to adopt new processes. This study will help SMEs use internal resources efficiently to develop competitive advantage. Knowledge management process emerges as an effective tool for SMEs to compete in competitive environment. Therefore, the current study has revealed the worth of using the perceptions of respondents from SMEs to describe the impact of knowledge management processes on innovation in Balochistan, Pakistan. Future studies could consider other measures of knowledge management and study their effect on innovation. It is required to comprehend the impact of each dimension to show the total effect of knowledge management on each aspect of organization as knowledge management has emerged as an important process that enables organization to stay in competitive market for long term.

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