Information and Knowledge Management
ISSN 2224-5758 (Paper) ISSN 2224-896X (Online)
Vol.4, No.8, 2014

Impact of Knowledge Management Infrastructure on Organizational Performance with Moderating Role of KM Performance: An Empirical Study on Banking Sector of Pakistan

Muhammad Kashif Imran
MS Scholar, Virtual University of Pakistan
kkaasshhii@gmail.com

Abstract
From the last decade, Knowledge Management (KM) performs outstanding while implemented correctly not only to enhance the internal strength of the organizations but also to boost the external competitiveness. The current study investigated the impact of KM infrastructure (technology and culture) on organizational performance (OP) and how KM performance moderates the relationship between KM infrastructure and organizational performance.A total of 400 managerial employees of banking sector of Pakistan have been selected to get responses and 363 respondents returned valid questionnaires that are used for final analysis through SPSS 21 by using multiple regression analysis and Barron and Kenny (1986) moderation test. Results of the current study revealed that there is significant positive impact of KM infrastructure on the OP and KM performance partially strengthen the relationship and these results are in line with the results of the previous studies mentioned in the literature. The results of the current study have so many managerial implications for organizations. If banks in Pakistan want to increase performance, they must have to work on maintaining the efficient KM infrastructure. When organizations have efficient KM infrastructure, these ultimately increase performance and organizations will remain competitive in the industry.
Keywords: Knowledge Management, KM Infrastructure, Organizational Performance, Banking Sector of Pakistan

Introduction

Knowledge Management (KM) concept has emerged as competitive advantage for the organizations to enhance organizational capabilities, Organizational Performance (OP) and financial performance from the last decade. KM performs outstanding while implemented correctly not only to enhance the internal strength of the organizations but also to boost the external competitiveness. Knowledge management is proved to be the best tool to develop the strategic capabilities for organizations to cope up the current issues and remain competitive in the industry. With the help of systematic acquiring, converting, applying the required knowledge in the best interest of the organization that will help to exploit the resources and organizations remain vital with competitive and comparative advantage. Knowledge management capability model always give the solutions for organizations in all the dimensions of organizational performance and knowledge management success as well. Many well-known scholars had attempted to measure the relationship and effects of KM to enhance the OP in different sectors of economy. The overall performance of dynamic organizations is heavily dependent on KM processes organizations have (Zaied, Hussein, & Hassan, 2012) and how much appropriate these processes were used by these organization to get optimum benefits (Gold, Malhotra, & Segars, 2001). The correlation elements of the organizational performance and knowledge management were at best position when compare critically with other organizational disciplines (Emadezade, Mashayekhi, & Abdar, 2012) and organizations those management effectively applied the KM processes were always lies in the best competitive position in the industry (Zaied, 2012).

In current era, businesses all over the world experienced dynamic and competitive environment especially after the implementation of free trade zone activities and world become the global village. Financial institutions especially banks play vital role for all types of businesses to compete with rivals of the other economy's businesses. In banking sector the era of financial soundness on the basis of financial capital is now less significant and transformed into the era of having knowledge workers and knowledge professionals. Each bank has unique culture, processes, infrastructure, values, skills, predefined solutions and knowledge can be transformed into the market which may turn affect the competitive advantage, increase the productivity and market value. Efficient KM processes also attract employees to produce better results.

Therefore, impact of KM Processes on OP need to be measured so that employees of the banks are able to improve OP through effective implementation of KM processes. The current study will also give directions for future decision making to managers for enhancing OP as well.

Business environment is becoming very competitive in quota free WTO regime, making the organizations increasingly concerned about improving their performance to meet the new challenges. Efficiency of KM plays a vital role in productivity and profitability of the businesses in free market economy. KM is one of

the tools for the organizations to effectively implement systems that have the capability to improve the processes, mold the structure and create culture that facilitate employees of the organization to produce better results. The KM has a significant role in the today's innovative economy and provides solutions that are consistent with the success and productivity. The study would focus on determining the impact of KM infrastructure on OP in banking sector of Pakistan.

The main objective of the current study is to measure the impact of KM infrastructure on enhancing the OP in banking sector of Pakistan and how KM performance moderates the relationship between KM infrastructures on OP. Further the study would specifically answer the two main questions. What is the impact of KM infrastructure on OP of banks in Pakistan? How KM infrastructure moderates the relationship between KM infrastructure and OP of banks in Pakistan?

Literature Review

All over the world organizations are in the phase of radical and transformational change from conventional methods to innovative methods to deal with environment and Knowledge Management (KM) is considered as discipline that supports organizations to successfully accomplish this task (Jennex, Smolnik, & Croasdell, 2012) and provides the sustained competitive advantage through better processes, advanced technologies, collaborative structure, knowledge sharing attitude, shared culture, low resistance to change environment, problem solving mechanisms, protection systems and foster innovation habits (Zaied, 2012) that facilitates the organizations to remain competitive ever locally as well as globally (Cavusgil, Calantone, & Zhao, 2003).

There is abundance of KM definitions in the management and KM literature and involve various theories, opinions and techniques that applied to mainly codification process. KM is defined by different authors differently when studying the various economies and organizations. Emadezade et al. (2012) defined KM is that process that transform individuals' knowledge to organizational knowledge. Emadezade et al. (2012) was of the view that codification of knowledge is compulsory to implement the KM capabilities and framework and codification process helped organizations to gain the knowledge from the minds of the expert and retain it in the repositories of the organizations that will help to solve existing and new problems. Ikujiro Nonaka (1994) categorized knowledge into two broad categories. First is the tacit knowledge that is the property of the individuals and they use it to solve the existing, complex and new problems and gain worth through this tacit knowledge in the organizations. Second is the explicit knowledge that is in published form and in the repositories of the organizations. It is also called codified knowledge that has access to all individuals who have authentication in the organizations. Easterby‐Smith and Prieto (2008) defined KM in general way as the process through which knowledge and expertise has located, stored and disseminated to make organizations more competitive. He categorized it as holistic approach to make processes and strategies that make organizations to acquire and apply the required knowledge and expertise to make better decisions and become competitive in the market. Different factors along with the KM performance jointly affect the Organizational Performance like leadership, strategic vision, future environment, internal policy but in all KM performance played the hub role to joint all elements together and perform outstanding (Ikujirō Nonaka & Takeuchi, 1995; Özbağ, Esen, & Esen, 2013; Zaied, 2012).

KM was the leading principle that organizations aimed to adopt for successful implementation of processes, mold the structure and creates culture that facilitates the organizations to produce better results (Gold et al., 2001). KM helped organizations by providing right peoples the right information at right time with greater speed to make right decisions (Tseng, 2014). The efficient processes accompanied with skilled human resource performed outstanding in all the circumstances (Mehregan, Jamporazmey, Hosseinzadeh, & Kazemi, 2012). Zaied (2012) explained the relationship between integrated KM capabilities and OP and suggested that KM capabilities (infrastructure and processes) has positive correlated as if organizations want to increase their performance they have to strengthen the KM capabilities as they are the facilitators of knowledge creation, knowledge sharing and knowledge utilizations. KM emphasized the strategic vision as a vital thinking towards the goal setting (Rehman, Rehman, Rehman, & Zahid, 2011) and attaining the long term objectives of the organizations (Sun, 2010). Huang and Lai (2012) explained KM fit model for business performance and the model contained HR strategy as providing the best human resource, IT strategy as combination of latest IT infrastructure to deal with market challenges and KM strategy and their best fit in relation to business performance. Here it is worth mentioning that KM strategy has more fit then other strategies to business performance.

KM described the different ways of acquiring and application of knowledge jointly with superior technology (Rašula, Bosilj Vukšić, & Indihar Štemberger, 2012) to gain competitive advantage and to produce better performance (Gold et al., 2001). So KM gives economies a source of competitive advantage by producing the solutions for existing and new problems and then stores it in the knowledge repositories so that it will be used in the future for same or related problems (Jokar, Ghafori, Malekian, & Namadar, 2012). KM is the source of cost minimization for economy when implemented correctly (Ng, Yip, & Bakar, 2012). Minimization of cost

is now-a-days is the burning issue that up lift or demolish the organizations and KM addressed it very rightly as to integrate the structure that facilitates the employees to make better decisions (Y.-Y. Chen, Yeh, & Huang, 2012; Wang & Wang, 2012). KM emphasized on response time to customers, vendors and partners and delegated decision making in the scenario of integrated KM capabilities will minimize the cost as it creates efficient processes so that less time required from idea generating to feedback from customer will strengthen the organizations and economies to produce better results (Yang, Chen, & Wang, 2012). KM created the collaborative culture in which the employees share their ideas and knowledge flow within and outside the organization very fast (Tare, 2003) and using that it is better approach to make processes efficient and innovative so that quality of products and services will improve and value creation can be enhanced (Muhammad & Ismail, 2014). In the current era, the growth of economy depends on innovative and quality products (Sandhawalia & Dalcher, 2011) and KM by using knowledge sharing process, technology and collaborative culture produces innovative and quality products and made economies to sustain in the knowledge era (Haas & Hansen, 2005; Hoffman, Hoelscher, & Sherif, 2005). KM provided organizations the strategic directions to remain competitive in the market either locally or globally through efficient processes and infrastructure (Gold et al., 2001). The organizations and economies that have good strategic vision and decision making in this knowledge era attain better results (Sandhawalia & Dalcher, 2011) and KM gives strategic vision and how organization will hedge their future with better decisions of today through integrated KM capabilities (Zaied, 2012). Application of KM framework and capabilities will improves the productivity as it uses the skilled labor having less defective rate (Rašula et al., 2012), reduce the processing time with efficient processes (Gold et al., 2001), provides core solutions to problem through superior technology (Zaied, 2012) and make the whole framework as organizational routine so that it will look like the unique culture of the organization (Sun, 2010) to improve the productivity and meet all the challenges that becomes hurdle in the sustainable development of economies.

Knowledge Management Infrastructure:

KM has become a key performance indicator for success of innovative economy. KM capabilities include KM infrastructure and KM Processes (Gold et al., 2001; Rašula et al., 2012; Salimi, VahdatZad, & Abdi, 2012; Zaied, 2012) that are aimed to strengthen the organizations by giving competitive advantage internally and externally. KM infrastructure consists of technology and culture, and KM Processes includes acquisition and application of Knowledge.

KM infrastructure is the environment of the organization through which knowledge acquisition, knowledge retrieval, knowledge application, knowledge protection and knowledge storage becomes easy and it is the best facilitator for organizations to implement the KM systems, framework and capabilities quite easily and effectively (Borho, Iarozinski Neto, & Lima, 2012; Gold et al., 2001; Lee, Kim, & Kim, 2012; Zaied et al., 2012). Knowledge management infrastructure is the building blocks of KM for improvement and effectiveness of all activities related to implementation of best KM systems (Zaied, 2012). Emadezade et al. (2012) explained the view of (Ng et al., 2012) regarding KM infrastructure is broad environment through which organizations attained the effective implementation of activities related to KM and supports vital operational and innovative activities. KM infrastructure created collaborative environment that push the elements of KM to interact one another and becomes the facilitator between KM applications and problem solving (Sun, 2010; Theriou, Maditinos, & Theriou, 2010). KM infrastructure includes technology and organizational culture (Gold et al., 2001; Liao, Wang, Chuang, Shih, & Liu, 2010; Pukkila, 2009; Zaied et al., 2012).

H1: There is positive impact of KM infrastructure capability on the organizational performance

Technology:

Technology consists of the mechanism within organization that facilitates the creation and dissemination of knowledge in the best possible way (Choy, Yew, & Lin, 2006; Gold et al., 2001; Lee et al., 2012; Marques & Simón, 2006; Zaied, 2012). Technology is all about the technical mechanism that an organization holds for effective knowledge transmission within and outside the organization (Rašula et al., 2012). Information technology helped organizations to timely transmission of organizational goals to employees of the organizations (Gold et al., 2001) also proved the best facilitator to achieve the desired goals of the organizations (Yang et al., 2012). Zaied et al. (2012) suggested that current era is the technological era and the organizations that have best technology have greater competitive edge over others. Technology has the core position in the integrated KM framework to travel the new knowledge and repository of existing knowledge for easy retrieval and protection from misuse (Gold et al., 2001; Lee et al., 2012).

Zaied (2012) hypothesized that technology has positive effect on the OP while studying the relationship between integrated KM capabilities and OP in IT sector organizations in Malaysia and proved that technology has positive effect and facilitator towards OP and towards implementation of KM system as well. Technology has the facilitator position in the KM infrastructure atmosphere but has not positively correlated with OP

(Akhavan & Pezeshkan, 2014; Emadezade et al., 2012). Innovativeness in banking industry like e-banking and mobile banking opened new visions and affects the Turned Around Time (TAT) or response time and provide help to other businesses to channelize their trade worldwide (Singh, Chan, & McKeen, 2006) and KM works in all the departments of the banks to reduce TAT and produce innovativeness. Technology helped organizations to increase productivity by giving timely information (Sandhawalia & Dalcher, 2011) and reduce response time by efficient utilization of IT tools (Zaied, 2012) and have the ability to minimize the cost of operations and processes (Rašula et al., 2012) and it used for acquiring new knowledge, retrieve knowledge about their products and stakeholders, acquiring knowledge and information about market and effective communication within the organization (Gold et al., 2001). Technology is always linked to OP and theoretical reflections showed that it is mediocre enabler of OP in the context of KM capabilities (Edvardsson & Durst, 2013). Some researchers were of the view that if technology was abolished from the integrated KM framework and systems then the whole system may fail (Kiessling, Richey, Meng, & Dabic, 2009; Pettersson, 2009). Shaabani, Ahmadi, and Yazdani (2012) have clear view regarding technology as it used in the deployment of KM system effectively and for the creation of enhanced performance nothing more than that.

Technology is playing the core role while implementing the Knowledge Value Added (KVA) technique to foster the OP and create value addition at every step like in mobarba sector of Malaysia (Emadezade et al., 2012) like time to passing a cheque at counter of withdrawal from Automated Teller Machine (ATM) and now-e-days mobile banking is started only because of advancement of technology, people can operate their accounts while they are at workplace or even at home by just log in to respective bank portal. In value addition phase the transmission of knowledge was at the stake of technology (Haas & Hansen, 2005; Hoffman et al., 2005). If IT strategy of any organization is up to mark then there is lowest stress to that organization regarding the implementation of integrated KM capabilities framework (Huang & Lai, 2012) while mixed with HR strategy and KM strategy make the best fit model.

Goh (2005) described the effects of technology to create innovation and organizations gained competitive advantage through new and customer demanded products that will boost up the sales revenue and he termed this phase knowledge revolution. Technology is positively correlated with KM performance and firm performance as well. KM performance is the term that is used to measure the OP (Mehregan et al., 2012) and technology has best fit with KM performance (Tare, 2003). KM success in dependent on some factors and technology is one of them and included in KM success factors (Rulke, Zaheer, & Anderson, 2000). Technology is helpful to make the right decision by emphasizing on two factors, i.e. capturing knowledge and use of IT tools (Rašula et al., 2012).

Capturing knowledge is very fast using the latest technology and help is setting the strategic direction that will lead to KM performance and ultimately enhancing the OP (Mehregan et al., 2012). The IT tools are the second part of the technology elements that described that the more efficient IT tools are in the organizations the more quality information can be extracted, when more quality information is extracted it will lead to user satisfaction and ultimately greater success of KM system and OP.

H1a: There is positive impact of Technology on the organizational performance

Culture:

In KM infrastructure the second variable is organizational culture that determined the KM capability of the integrated KM framework and is the vital factor to implement the KM system to boost the firm performance(Rašula et al., 2012). Organization Culture that is a set of shared values, belief and attitude that employees of the organization possess (C.-J. Chen & Huang, 2007; Yesil & Kaya, 2013; Zaied et al., 2012). Culture or organization told about the rights and rituals, methods of problem solving, oval all environment (Zaied, 2012), style of decision making, knowledge sharing habits (Rašula et al., 2012), and behaviors of human resource of any organizations (Gold et al., 2001). In KM framework the cultural context are always prominent element as it helps in acquiring, sharing and dissemination of knowledge within and outside the boundaries of the organization and is the predictor of efficient KM infrastructure and will lead to KM performance and firm performance (Meihami & Meihami, 2014).

The OP will increased if the cultural context perform its task related to knowledge acquisition, knowledge creation, knowledge sharing, knowledge dissemination and knowledge protection (Rašula et al., 2012) and it creates competitive advantage for organizations if helpful to move in the right directions (Zaied et al., 2012).The attaining of competitive advantage and superior performance is only attainable through KM if cultural environment is helpful to remove the barriers between the human resource and available information in the organization so that individuals use this information for innovation and productivity (Rahman, Ng, Sambasivan, & Wong, 2013). Organizations that have vast social network and collaborative culture have performed better and their integrated KM framework creating the KM performance effectively and when social network interact it will boost the socialization and internalization process (López-Nicolás & Meroño-Cerdán, 2011). The KM also

emphasized on the cross-cultural context when organizations work globally and in that organizations the roots of culture are vast in comparison of organization act locally and identifies the performance dimensions and KM success criteria (Özbağ et al., 2013) and knowledge sharing culture will work better in the KM atmosphere(Gold et al., 2001) and addressed to the human resource skill side that will never end either if key knowledge worker leave the organization because through knowledge sharing all other have already capture their knowledge and skills to solve the specified problems (Zaied, 2012). Knowledge sharing environment also create the continuance commitment because of that individuals are interested in enhancing their skills (Ikujirō Nonaka & Takeuchi, 1995).

Cavusgil et al. (2003) worked on tacit knowledge transfer among the individuals within the organization and have suggested that to effective transfer tacit knowledge must require collaborative cultural context and proved that there is significant positive relationship between tacit knowledge transfer and cultural context of organization and it is helpful to attained superior KM performance. He suggested that organization can achieve efficient knowledge and business processes if the cultural is supportive and (Zaied, 2012) was of the same view regarding the cultural context and OP of an organization. The KM performance is dependent on how much time is required to transfer knowledge from one individual (who have) to another (who require) and it is only possible if cultural context in supportive that make decision making easy (Jennex et al., 2012) and when the person who required knowledge to do task and make a decision and he acquired it time it will boost the KM capability and sustained performance (Gold et al., 2001).

H1b: There is positive impact of Culture on the organizational performance

Organizational Performance:

After studying the above literature regarding the KM, infrastructure and processes we reached at the point to draw hypothesis that KM infrastructure and KM processes have positive impact on the OP as the previous literature has mixed view about the relationship of the above constructs.

OP defined in terms of Quality of work, effective employee decision making, improved processes, relationship of management and employees, diverse products and services, innovations, market shares, employee skills to solve problem quickly and new methods for product development (Delaney and Huselid, 1996; Kiessling et al.,2009; Rehman et al., 2011; Hantrakul et al., 2012; Zaied, 2012). Creation of knowledge is the focal building block of the KM theory towards the performance of KM and will be effectively attained through training, self-search and knowledge sharing if the infrastructure like technology, culture and hierarchical structure supportive and facilitates effective decision making (Zaied; 2012) and helped in measuring the OP (Gold et al., 2001).

Increase in the productivity is always the product of the KM function when compare it with OP and showed that if the KM tools are working effectively and efficiently then productivity will move up and is the basic indicator or OP (Gold et al., 2001). The productivity will be enhanced if the KM tools are effectively applied (Zaied et al., 2012; Gold et al., 2001) and ultimately lead to OP. Innovative ability of the organization is also the determinant of the OP and KM capability will measure the OP through innovative products. Zaied et al. (2012) has measured the OP in terms of perceived usefulness of product, increase in market share, profitability and growth rate, innovativeness, customer satisfaction and competitiveness. He combined the KM capabilities and processes to measure the OP on the above mentioned determinants and proved that there is positive relationship with between productivity, innovativeness and customer satisfaction as OP when tested on KM framework.

Rašula et al. (2012) defined OP in terms of financial and non-financial terms and in the dimension of learning prospective, financial, innovation, customers and improved business processes. He described that the measurement of OP is utmost important as to find out where organization stands. It helpful for comparison purpose internally and externally. Organization must have to use the specified technique to measure the performance like Balanced Scorecard (SBC) is a performance measurement tool to measure the performance on small scale bases and internal dimensions of the OP like innovation and productivity will be measured separately and collectively form OP.

Knowledge Management Performance:

KM performance is one of the core concept that is playing the hub role between the KM capabilities and organizational elements related to performance and differentiation among other organizations in the industry (Zheng et al., 2010). KM performance is one of the tools to gain the competitive advantage over the rivals (Meihami & Meihami, 2014). Different researchers has of the view and used KM performance as dependent variable and KM processes are on the independent variable as KM success and performance is the outcome of the KM processes (Gold et al., 2001) and increased through effective utilization of information technology and collaborative culture to acquiring and applying knowledge (Zaied, 2012, Rasula et al., 2012).. KM process

capabilities (knowledge acquisition and knowledge application) have their own worth to predict or evaluate the KM performance and proved as significant variables for measuring the KM performance (Jennex et al., 2012; Salimi et al., 2012)

KM performance has been used as independent variable in so many researches to predict the financial performance , OP and organizational effectiveness though increase in productivity, increasing the competitive advantage, enhancing the innovative ability, lowering the response time and integrating the efficiency and effectiveness in the processes (Gold et al., 2001; Singh et al., 2006; Hoffman et al., 2005, Malhotra, 2005) and researches results proved that there is positive direct correlation between the KM performance and OP (Maharen et al., 2009; Kisseling et al., 2009; Vaccaro et al., 2010). There are some researches that directly checked the relationship of KM infrastructure (technology and culture) and KM processes (acquisition and application) on the OP (Zaied et al., 2012; Mojca et al., 2012; Zaied, 2012) some have taken KM performance as mediating variable while determining the impact on technology, culture, processes on the OP (Kasim, 2008; Zheng, Yang, & McLean, 2010).

Through previous literature we have rationale that KM performance is itself have a strong predictive role while measuring the OP and also influenced by the KM processes and current study would examine the OP of banks in Pakistan in the scenario of KM processes and taken the KM performance as moderating variable as Özbağ et al. (2013) that KM performance facilitate the technology to generate new knowledge and apply the acquired knowledge effectively and form the collaborative culture in which KM processes like knowledge application and sharing become versatile that will ultimately effects the OP (Zaied, 2012), enhance the organizational effectiveness (Gold et al., 2001) and create the competitive advantage for the organizations (Rašula et al., 2012). Hence, the ability of the KM infrastructure and KM processes has not as much as in the presence of KM performance while measuring or enhancing the OP and this research would apply the new dimension of moderation role of KM performance in the KM theories and enriches it as what the KM processes predict the OP when the KM performance in high or low.

H2: KM Performance moderates the relationship between KM Processes with Organizational Performance.

H2a: KM Performance moderates the relationship between Knowledge Acquisition and Organizational Performance.

H2b: KM Performance moderates the relationship between Knowledge Application and Organizational Performance

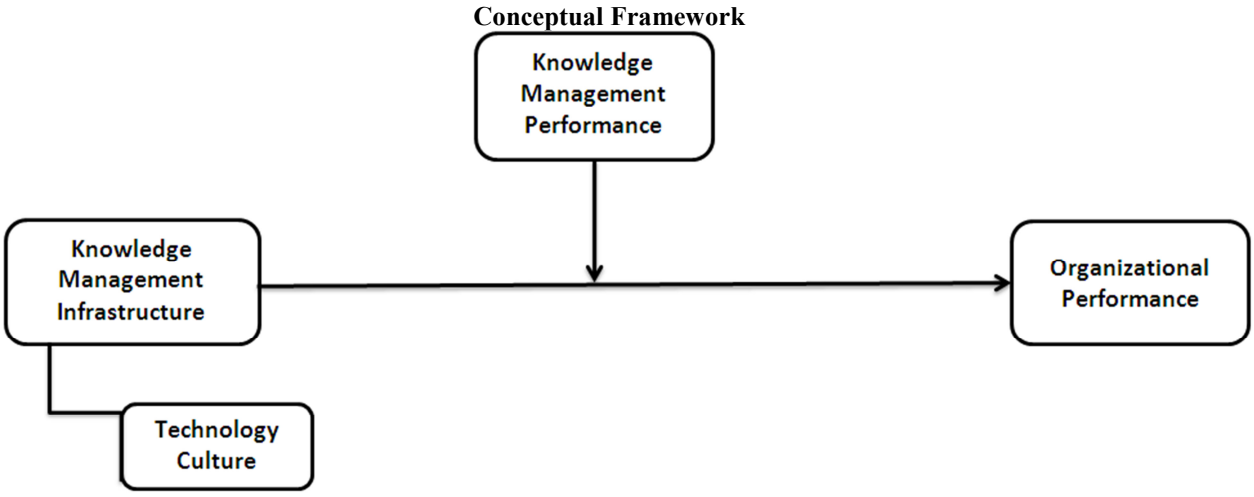

Fig 1-Conceptual Framework: Impact of KM Infrastructure on OP with moderating role of KM performance

Figure 1 showed the conceptual framework of the current study based on the literature reviewed. From last decade, different researchers have developed different model to categorize the KM capabilities that mostly categorized into infrastructure and processes. Not exactly same but using unique approach to KM performance the model of this study is developed in accordance with Gold et al. (2001), Zaied (2012), and Singh et al. (2006). In this study we measured the relationship between the KM infrastructure on the OP of banks in Pakistan and how KM performance moderates the relationship between KM infrastructure and OP.

Research Methodology

Research Design:

This research lies in the category of descriptive as described the KM process (Zikmund, Babin, Carr, & Griffin, 2012) and explanatory research as it measured the cause and effect relationship between variables (Zikmund et al., 2012) as KM infrastructure on OP and having KM performance as moderating role in between KM infrastructure and OP and also deductive nature study as hypotheses are drawn on the basis of theory that are to be investigated. According to (Creswell, 2013) descriptive research describe the current situation and have not relied on judgments. The descriptive studies always deal with current scenario that consists of present and past behavior of the given constructs (Kumar & Phrommathed, 2005).

The current study is regarding the KM infrastructure that affect the organizational performance of banks in Pakistan and survey method is used to collect data from the targeted respondents through distributing the questionnaire as survey instrument (Robson, 1993) as there are so many advantages of questionnaire as instruments over conducting interviews (Leary, 1995) like survey through questionnaire has less cost, less time utilization and better response rate (Robson, 1993). In consideration of these benefits, in current study questionnaire is used as tool of data collection and all the scales of different variables as adopted through previous researches. This is a cross-sectional study that will measure the impact of KM infrastructure on OP by getting response from the bank employees about their organization at specific point in time. The cross sectional study is adopted due to nature of response, time and cost constraints.

Sample Selection:

Banking sector of Pakistan is one of the prominent sectors of economy of Pakistan having more than 30 banks. In this research the employees of the following banks having managerial positions have been selected as sample. It is suitable to draw stratified random sampling to represent both sectors i.e. Public Sector banks and Private Sector banks (de Vries, 1986; Kadilar & Cingi, 2003; Sedransk & Meyer, 1978). After selecting the strata, Simple sampling is done to select the banks with in each strata (Sedransk & Meyer, 1978) and furthermore convenient sampling is used to select respondents as convenient sampling is helpful to collect data conveniently (Zikmund et al., 2012) that has many advantages regarding cost and benefits (Lym et al., 2010). Details of Public Sector banks and Private Sector banks are given below that are included in the study:

Public Sector Banks:

1- National Bank of Pakistan
2- Bank of Punjab
3- Bank of Khyber
4- Sind Bank
5- First Women Bank
6- Punjab Provincial Cooperative Bank Limited
7- Zarai Taraqiati Bank Limited

Private Sector Banks:

1- Allied Bank Limited
2- Askari Bank Limited
3- Faysal Bank Limited
4- Habib Bank Limited
5- United Bank Limited
6- Citibank Limited
7- MCB Bank Limited
8- Meezan Bank Limited

Dependent variable that is OP has been measured by the employees having managerial position in these selected banks according to the scale given. After selecting the banks 400 employees having managerial positions have been selected as sample at 95% confidence interval with the help of sample size calculator as 95% confidence interval is best interval with appropriate margin of error (Niles, 2006) and 200 respondents from each strata to get response regarding the current study.

Instrument Development:

Questionnaire is the instrument that is used and this instrument is of same nature as used by the other researcher while conducting the researches on same empirical relation like Delaney and Huselid (1996), Gold et al. (2001) and Zaied (2012).

A multiple-item method will be used in the questionnaires. Questions are structured in a Likert scale model (1 to 7) with “strongly disagree to strongly agree”.

Data Analysis Techniques:
Multiple Regression Analysis technique was used to measure the impact of KM infrastructure on the OP (Emadezade et al., 2012; Rašula et al., 2012; Zaied et al., 2012) and then Baron and Kenny (1986) test applied to check the moderation effect of KM performance.

Data Analysis
Main Study Sample Profile:
The total 400 questionnaires mailed to the targeted respondents i.e. managerial employees of the banking sector of Pakistan. Initially 150 responses returned, 130 from public sector banks and 120 from private sector banks plus 85 on first reminder and 37 on second reminder, totally 372 respondents returned the questionnaires that consists 192 from public sector banks and 180 from private sector banks. The overall response rate was 93%. According to Hair et al. (2009), any imputation method will be used when there are missing values in the data below 10% but if dependent variable contained missing values then the whole questionnaire is excluded from the sample. Kline (2011) argued that if the missing values are greater than 10% in the main construct portion the said response should not be included in the study. Given that all variables of the study have multi-item measurement scale, 9 returned questionnaires are excluded from the main analysis because of having large number of missing values and 363 responses are included in the study. This sample size was adequate as it fulfills the minimum criteria defined by (Hair, 2009) and (Kline, 2011), it is 5:1 for the number of usable questionnaire to number of items in the study.

Descriptive Analysis:
The respondents are classified on the basis of gender, age, bank type, functional designation / job and experience in their current organization.

In Table 1, the figures showed one-fourth of the population is female that provide evidence of the male dominance in the managerial positions of the banking sector of Pakistan.
In Table 1, the ages of the respondents are displayed that has given the clear evidence that banking sector of Pakistan primarily involve young blood in the managerial positions to become decision more quickly and effectively with 84.3% up to the age of 45 or below. Only small percentage lies in the above 45-60% that is 17.7%.

As it is already mentioned in the introduction portion regarding the respondents' type of bank, the same is explained in the Table 4.3, 52.1% of the respondents belong to public sector banks and 47.9% belongs to private sector banks that are approximately equal proportions from both the strata. It is also worth mentioning here this equal proportion helped while comparing the results on the basis of bank type.
Table 1 provides information regarding the experience status of the respondents, argued that 84.9% of the respondents are in the category of 1-20 years of experience and 15.1% have above 20 years of experience.

Table 1: Descriptive Analysis Facts

Variable	Category	Frequency	Percentage
Gender	Male	281	77.4
	Female	82	22.6
Age	26-30	116	32.0
	31-35	80	22.0
	36-40	66	18.2
	41-45	44	12.1
	46-50	27	7.4
	51-55	22	6.1
	56-60	8	2.2
Bank Type	Public Sector	189	52.1
	Private Sector	174	47.9
Experience	1-5	111	30.9
	6-10	100	27.5
	11-15	56	15.4
	16-20	41	11.3
	21-25	23	6.3
	25-30	23	6.3
	31-35	9	2.5

Reliability and Correlation Analysis:

The internal consistency of a measure is highly dependent on the item variances and co-variances, and dependent to a lesser extent on the number of items. A short measure consisting of only a few high highly reliable items would be more reliable that a measure with many poor items, according to modern measurement theory. Nunnally, Bernstein, and Berge (1967) argued that in the early stages of research, alpha values of 0.50 to 0.60 are adequate. George and Mallery (2003) provide the following rules of thumb: ">= 0.9 Excellent, >= 0.8 Good, >= 0.7 Acceptable, >= 0.6 questionable, >= 0.5 Poor, and < 0.5 Unacceptable". The targeted alpha for the current study is set as minimum 0.7.

In Table 2, the cronbach alpha results are displayed; all are above the minimum acceptable criteria of 0.7 and are in-line with the previous studies (Gold et al., 2001; Zaied, 2012, Rasula et al., 2012, Zaied et al., 2012). Cronbach alpha values are normally lies between 0 to 1 and it is also the best predictor to measure the convergent validity as well (Cooper & Schindler, 2003; Moore & Benbasat, 1991; Nunnally et al., 1967).

Table 2: Reliability Coefficient Cronbach's Alpha

Sr. No.	Dimension	No. of Items	Cronbach Alpha
01	Technology	8	0.887
02	Organizational Culture	5	0.784
03	KM performance	6	0.840
05	Organizational Performance	8	0.906

In Table 3, the inter-variable pearson correlation is displayed and proved to be fine as it is between -1 to +1 and special thing is that inter-correlation of all the variables is above 0.5 which argued that there is strong positive correlation exist between variables (Nuechterlein et al., 2008).

Table 3, Pearson Correlation Coefficient

Pearson Correlation Coefficient	Organizational Performance
Technology	0.621**
Organizational Culture	0.528**
KM Performance	0.617**

Note: According to Nuechterlein et al. (2008) small relationship is range from 0.10 to 0.29, medium 0.30 to 0.49 and strong 0.5 to 1, ** confidence level a = 0.01

Hypothesis Testing:

Regression analysis was conducted to test the main hypothesis that have been mentioned in the research methodology in the hypothesis section and. Here H1 and H2 were consisted on two sub-parts.

Hypothesis 1:

H1: There is positive impact of KM Infrastructure Capability on the Organizational Performance

The independent variables associated with this hypothesis are technology and culture that ultimate forms knowledge management infrastructure (technology and culture). This main hypothesis was measured on the basis of following sub-hypothesis:

H1a: There is positive impact of Technology on the Organizational Performance

H1b: There is positive impact of Culture on the Organizational Performance

Table 4, showed the relationship between technological KM infrastructure capabilities on organizational performance. While analyzing the results; it is found that regression coefficient in the model summary have value 0.621 that shows 62.1% variation found in organizational performance because of technology in the banking sector of Pakistan and technology is affecting organizational performance positively with R^2 value 0.385 that have clear evidence that 38.5% variation found between technology and organizational performance. ANOVA statistic also found significant with F value 226.012. These results clearly proved that technological KM infrastructure capabilities have significant positive impact on organizational performance of banking sector of Pakistan.

Table 5, showed the relationship between cultural KM infrastructure capabilities on organizational performance. While analyzing the results; it is found that regression coefficient in the model summary have value 0.528 that shows 52.8% variation found in organizational performance because of culture in the banking sector of Pakistan and culture is affecting organizational performance positively with R^2 value 0.279 that have clear evidence that 27.9% variation found between culture and organizational performance. ANOVA statistic also found significant with F value 139.695. These results clearly proved that cultural KM infrastructure capabilities have significant positive impact on organizational performance of banking sector of Pakistan.

The results of Table 4 and 5 revealed that H1 is satisfied that knowledge management infrastructure capabilities have direct positive impact on organizational performance of banking sector of Pakistan.

Table 4: Regression Analysis for (TE-OP) Banking Sector of Pakistan

Sr. No.	DV	IV	R^2	F Value	Un-standardized Beta	Standardized Beta	T Value
1	OP	TE	0.385	226.012	0.618	0.621	15.034

Note: OP=Organizational Performance; TE= Technology;

Table 5: Regression Analysis for (OC-OP) Banking Sector of Pakistan

Sr. No.	DV	IV	R^2	F Value	Un-standardized Beta	Standardized Beta	T Value
1	OP	OC	0.279	139.695	0.518	0.528	11.819

Note: OP=Organizational Performance; OC= Culture;

Hypothesis 2:

H2: KM Performance moderates the relationship between KM Infrastructure and Organizational Performance.

The independent variables associated with this hypothesis are KM Infrastructure (technology and culture) and KM performance as moderating variable with organizational performance as dependent variable. This main hypothesis was measured on the basis of following sub-hypothesis:

H2a: KM Performance moderates the relationship between Technology and Organizational Performance.

H2b: KM Performance moderates the relationship between Culture and Organizational Performance.

After measuring the direct relationship of dependent variable with independent variables; then Barron and Kenny (1986) test was used to see the moderation effect of KM performance. Table 6 and 7 explained the results of moderated regression approach with technology and culture as independent variables respectively.

After measuring the direct relationship of dependent variable with independent variables; then Barron and Kenny (1986) test was used to see the moderation effect of KM performance. Table 4.15 and 4.16 explained the results of moderated regression approach with technology and culture as independent variables respectively.

While analyzing the results of Table 6, it is found that in first equation of model summary the regression coefficient have value 0.621 that shows 62.1% variation found in organizational performance because of technology in the banking sector of Pakistan and technology is affecting organizational performance positively with R Square value 0.385 that have clear evidence that 38.5% variation found between technology and organizational performance. In second equation, the value of regression coefficient found to be 0.635 that provide evidence that 63.5% variation in knowledge management performance is due to technological factors adopted by banking sector. Furthermore, in third equation it is also found that 61.7% variation in organizational performance is because of knowledge management performance. All these equations have significant results with F= 226.012, F=244.180 and F=222.396 (ANOVA statistic) in first, second and third equation respectively and also fulfill the moderation base of knowledge management performance (Barron and Kenny, 1986). The model summary of fourth equation shows regression coefficient value 0.673 that is statistically significant and helped to prove that there is strong positive moderation having 67.3% variation found with other positive parameters like positive variation in R^2 in fourth equation (0.454) in comparison with the first equation (0.385) and ANOVA statistic is also significant that explained that knowledge management performance is strengthening the relationship between technology and organizational performance.

While analyzing the results of Table 7, it is found that in first equation of model summary the regression coefficient have value 0.528 that shows 52.8% variation found in organizational performance because of culture in the banking sector of Pakistan and organizational culture is affecting organizational performance positively with R Square value 0.279 that have clear evidence that 27.9% variation found between culture and organizational performance. In second equation, the value of regression coefficient found to be 0.647 that provide evidence that 64.7% variation in knowledge management performance is due to cultural factors adopted by banking sector. Furthermore, in third equation it is also found that 61.7% variation in organizational performance is because of knowledge management performance. All these equations have significant results with F= 139.695, F=260.000 and F=222.396 (ANOVA statistic) in first, second and third equation respectively and also fulfill the moderation base of knowledge management performance (Barron and Kenny, 1986). The model summary of fourth equation shows regression coefficient value 0.612 that is statistically significant and helped to prove that there is strong positive moderation having 61.2% variation found with other positive parameters like positive variation in R^2 in fourth equation (0.375) in comparison with the first equation (0.279) and ANOVA statistic is also significant that explained that knowledge management performance is

strengthening the relationship between technology and organizational performance.

After reviewing both facets of knowledge management infrastructure, it is found that there is positive impact of knowledge management infrastructure capability of banking sector of Pakistan on organizational performance of banking sector of Pakistan and knowledge management performance is strengthening the relationship between KM infrastructure and organizational performance.

Table 6: Moderated Regression Approach for KMP (TE-OP) Banking Sector of Pakistan:

Sr. No.	DV	IV	R^2	F Value	Un-standardized Beta	Standardized Beta	T Value
1	OP	TE	0.385	226.012	0.618	0.621	15.034
2	KMP	TE	0.403	244.180	0.606	0.635	15.626
3	OP	KMP	0.381	222.396	0.645	0.617	14.913
4	OP	MoD	0.454	299.673	0.088	0.673	17.311

Note: OP=Organizational Performance; TE= Technology; KMP= Knowledge Management Performance; MoD=TE*KMP.

Table 7: Moderated Regression Approach for KMP (OC-OP) Banking Sector of Pakistan:

Sr. No.	DV	IV	R^2	F Value	Un-standardized Beta	Standardized Beta	T Value
1	OP	OC	0.279	139.695	0.518	0.528	11.819
2	KMP	OC	0.419	260.000	0.607	0.647	16.125
3	OP	KMP	0.381	222.396	0.645	0.617	14.913
4	OP	MoD	0.375	216.215	0.079	0.612	14.704

Note: OP=Organizational Performance; OC= Culture; KMP= Knowledge Management Performance; MoD=OC*KMP

Conclusion and Recommendations

Conclusion

Current study examined the impact of KM infrastructure on organizational performance of banks in Pakistan and up to what extent and direction the KM performance moderates the relationship between KM processes and OP of banks in Pakistan. The whole study can be bifurcated into two parts to effectively grasp the results of study. In first part, the impact of knowledge management processes has been checked on organizational performance. Second part moderation effect of KM performance is checked through Barron & Kenny (1986) test. As per expectation and in-line with the previous studies, the KM infrastructure is positive impact on organizational performance of banks in Pakistan. The KM infrastructure has also two facets, technology and culture, and analysis proved that it has significant positive effect on organizational performance of banks in Pakistan. These results have also in line with the previous studies.

An entirely new theory has been developed from the mixed literature that KM performance can moderates the relationship between KM infrastructure and organizational performance and tested on the banking sector of Pakistan and results proved that KM performance partially strengthen the above said relationship as theory suggest that when knowledge management performance is high the KM infrastructure contribute their maximum towards organizational performance.

Recommendations

The results of the study open several implication for management and employees of banks in Pakistan.

First, knowledge management infrastructure, technology & culture, has also significant positive effect on organizational performance of banks in Pakistan. This particular result has also further implications for bankers in Pakistan like if they want to increase the organizational performance they must have to strengthen the technology and culture so that employees acquire adequate knowledge regarding their work and apply it in right directions to get the required results. Second as KM performance has strengthen the relationship between KM infrastructure and OP of banks in Pakistan. If manager increase the KM performance then it positively affects KM infrastructure and these contribute their best towards OP of banks in Pakistan.

Limitations and Future Research

It is evident from the current study that knowledge management infrastructure have significant positive effect on organizational performance in the banking sector of Pakistan. Although the research results are in line with the previous researches and promising as well but a caution has been marked before generalizing as this research has some limitations. First, the research scope is limited to the banking sector of Pakistan and excludes all other sector of economy. Therefore future research must include other sectors to see the knowledge management processes effects of organizational performance. Second, the current research only taken two facets from each knowledge management infrastructure and excludes other facets human resource & organizational structure that have also impact on organizational performance as evidence from the previous studies (Zaied, 2012; Rasula et al., 2012; Zaied et al., 2012; Emadzade et al., 2012; Gold et al., 2001). Future research can be taken to explain the effects of these facets on organizational performance in the Pakistani scenario). Third, subjective performance elements are included in the study that may mislead the results. In future, research may be conducted to investigate the performance with objective measure like ROI, ROA & ROE etc. Fourth, current research includes the banking sector of Pakistan. In future, the research may involve the international financial sector to see the adoptability and effects of knowledge management on organizational performance to provide a more international prospective to this subject.

References

Akhavan, P., & Pezeshkan, A. (2014). Knowledge management critical failure factors: a multi-case study. *VINE, 44*(1), 22-41.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173.

Borho, H., Iarozinski Neto, A., & Lima, E. P. d. (2012). Manufacturing knowledge management. *Gestão & Produção, 19*(2), 247-264.

Cavusgil, S. T., Calantone, R. J., & Zhao, Y. (2003). Tacit knowledge transfer and firm innovation capability. *Journal of business & industrial marketing, 18*(1), 6-21.

Chen, C.-J., & Huang, J.-W. (2007). How organizational climate and structure affect knowledge management—The social interaction perspective. *International Journal of Information Management, 27*(2), 104-118.

Chen, Y.-Y., Yeh, S.-P., & Huang, H.-L. (2012). Does knowledge management "fit" matter to business performance? *Journal of Knowledge management, 16*(5), 671-687.

Choy, C. S., Yew, W. K., & Lin, B. (2006). Criteria for measuring KM performance outcomes in organisations. *Industrial Management & Data Systems, 106*(7), 917-936.

Cooper, D. R., & Schindler, P. S. (2003). Business research methods.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage.

de Vries, P. G. (1986). Stratified random sampling *Sampling Theory for Forest Inventory* (pp. 31-55): Springer.

Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management journal, 39*(4), 949-969.

Easterby‐Smith, M., & Prieto, I. M. (2008). Dynamic Capabilities and Knowledge Management: an Integrative Role for Learning?*. *British Journal of Management, 19*(3), 235-249.

Edvardsson, I. R., & Durst, S. (2013). The Benefits of Knowledge Management in Small and Medium-sized Enterprises. *Procedia-Social and Behavioral Sciences, 81*, 351-354.

Emadezade, M., Mashayekhi, B., & Abdar, E. (2012). Knowledge management capabilities and organizational performance. *Interdisciplinary Journal of Contemporary Research in Business, 3*, 781-790.

George, D., & Mallery, P. SPSS for Windows Steps by Steps: A Simple Guide and Reference 11.0 update. 2003: Allyn & Bacon, Boston.

Goh, A. L. (2005). Harnessing knowledge for innovation: an integrated management framework. *Journal of Knowledge management, 9*(4), 6-18.

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: an organizational capabilities perspective. *J. of Management Information Systems, 18*(1), 185-214.

Haas, M. R., & Hansen, M. T. (2005). When using knowledge can hurt performance: The value of organizational capabilities in a management consulting company. *Strategic Management Journal, 26*(1), 1-24.

Hair, J. F. (2009). Multivariate data analysis.

Hoffman, J. J., Hoelscher, M. L., & Sherif, K. (2005). Social capital, knowledge management, and sustained superior performance. *Journal of Knowledge management, 9*(3), 93-100.

Huang, L.-S., & Lai, C.-P. (2012). An investigation on critical success factors for knowledge management using structural equation modeling. *Procedia-Social and Behavioral Sciences, 40*, 24-30.

Jennex, M. E., Smolnik, S., & Croasdell, D. (2012). *Where to look for knowledge management success.* Paper presented at the System Science (HICSS), 2012 45th Hawaii International Conference on.

Jokar, A., Ghafori, D., Malekian, N., & Namadar, H. (2012). Investigating the Relationship between Knowledge Management Processes and Organizational Culture. *Life Science Journal, 9*(3), 1701-1706.

Kadilar, C., & Cingi, H. (2003). Ratio estimators in stratified random sampling. *Biometrical Journal, 45*(2), 218-225.

Kasim, R. S. R. (2008). The relationship of knowledge management practices, competencies and the organizational performance of government departments in Malaysia. *International Journal of Social and Human Sciences, 2*, 740-746.

Kiessling, T. S., Richey, R. G., Meng, J., & Dabic, M. (2009). Exploring knowledge management to organizational performance outcomes in a transitional economy. *Journal of World Business, 44*(4), 421-433.

Kline, R. B. (2011). *Principles and practice of structural equation modeling*: Guilford press.

Kumar, S., & Phrommathed, P. (2005). *Research methodology*: Springer.

Leary, M. R. (1995). *Self-presentation: Impression management and interpersonal behavior*: Brown & Benchmark Publishers.

Lee, S., Kim, B. G., & Kim, H. (2012). An integrated view of knowledge management for performance. *Journal of Knowledge management, 16*(2), 183-203.

Liao, C., Wang, H.-Y., Chuang, S.-H., Shih, M.-L., & Liu, C.-C. (2010). Enhancing knowledge management for R&D innovation and firm performance: An integrative view. *African Journal of Business Management, 4*(14), 3026-3038.

López-Nicolás, C., & Meroño-Cerdán, Á. L. (2011). Strategic knowledge management, innovation and performance. *International Journal of Information Management, 31*(6), 502-509.

Marques, D. P., & Simón, F. J. G. (2006). The effect of knowledge management practices on firm performance. *Journal of Knowledge management, 10*(3), 143-156.

Mehregan, M. R., Jamporazmey, M., Hosseinzadeh, M., & Kazemi, A. (2012). An integrated approach of critical success factors (CSFs) and grey relational analysis for ranking KM systems. *Procedia-Social and Behavioral Sciences, 41*, 402-409.

Meihami, B., & Meihami, H. (2014). Knowledge Management a way to gain a competitive advantage in firms (evidence of manufacturing companies). *International Letters of Social and Humanistic Sciences, 3*, 80-91.

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information systems research, 2*(3), 192-222.

Muhammad, N. M. N., & Ismail, M. K. A. (2014). Intellectual capital efficiency and firm's performance: Study on Malaysian Financial Sectors. *International Journal of Economics and Finance, 1*(2), p206.

Ng, A. H. H., Yip, M. W., & Bakar, N. A. (2012). Integrated Knowledge Management Strategy: A Preliminary Literature Review. *Procedia-Social and Behavioral Sciences, 57*, 209-214.

Niles, R. (2006). The programmer as journalist: a Q&A with Adrian Holovaty. *Online Journalism Review*.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science, 5*(1), 14-37.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*: Oxford university press.

Nuechterlein, K., Green, M., Kern, R., Baade, L., Barch, D., Cohen, J., . . . Gold, J. (2008). The MATRICS Consensus Cognitive Battery, part 1: test selection, reliability, and validity. *American Journal of Psychiatry, 165*(2), 203-213.

Nunnally, J. C., Bernstein, I. H., & Berge, J. M. t. (1967). *Psychometric theory* (Vol. 226): McGraw-Hill New York.

Özbağ, G. K., Esen, M., & Esen, D. (2013). The Impact of HRM Capabilities on Innovation Mediated by Knowledge Management Capability. *Procedia-Social and Behavioral Sciences, 99*, 784-793.

Pettersson, U. (2009). Success and Failure Factors for KM: The Utilization of Knowledge in the Swedish Armed Forces. *J. UCS, 15*(8), 1735-1743.

Pukkila, J. (2009). Critical Success and Failure Factors of Knowledge Management Implementation in a Large Multinational Company.

Rahman, A. A., Ng, S. I., Sambasivan, M., & Wong, F. (2013). Training and organizational effectiveness: moderating role of knowledge management process. *European Journal of Training and Development, 37*(5), 472-488.

Rašula, J., Bosilj Vukšić, V., & Indihar Štemberger, M. (2012). The impact of knowledge management on organisational performance. *Economic and Business Review, 14*(2), 147-168.

Rehman, W., Rehman, C. A., Rehman, A., & Zahid, A. (2011). Intellectual capital performance and its impact on corporate performance: an empirical evidence from Modaraba sector of Pakistan. *Australian journal of business and management research, 1*(5), 08-16.

Robson, C. (1993). Real world research: A resource for social scientists and practitioners-researchers.

Massachusetts: Blackwell Pushers.
Rulke, D. L., Zaheer, S., & Anderson, M. H. (2000). Sources of managers' knowledge of organizational capabilities. *Organizational Behavior and Human Decision Processes, 82*(1), 134-149.
Salimi, E., VahdatZad, V., & Abdi, F. (2012). Key dimensions to deploy a knowledge management system in an Iranian firm, a case study. *Procedia Technology, 1*, 268-274.
Sandhawalia, B. S., & Dalcher, D. (2011). Developing knowledge management capabilities: a structured approach. *Journal of Knowledge management, 15*(2), 313-328.
Sedransk, J., & Meyer, J. (1978). Confidence intervals for the quantiles of a finite population: simple random and stratified simple random sampling. *Journal of the Royal Statistical Society. Series B (Methodological)*, 239-252.
Shaabani, E., Ahmadi, H., & Yazdani, H. (2012). Do interactions among elements of knowledge management lead to acquiring core competencies? *Business Strategy Series, 13*(6), 307-322.
Singh, S., Chan, Y. E., & McKeen, J. D. (2006). *Knowledge Management Capability and Organizational Performance: A Theoretical Foundation.* Paper presented at the Conference at the University of Warwick, Coventry.
Sun, P. (2010). Five critical knowledge management organizational themes. *Journal of Knowledge management, 14*(4), 507-523.
Tare, M. (2003). *A Future for Human Resources: a Specialised Role in Knowledge Management.* School of Business, Swinburne University of Technology.
Theriou, N., Maditinos, D., & Theriou, G. (2010). *Knowledge Management Enabler Factors and Firm Performance: An empirical research of the Greek medium and large firms.* Paper presented at the International conference on applied business & economics ICABE.
Tseng, S.-M. (2014). The impact of knowledge management capabilities and supplier relationship management on corporate performance. *International Journal of Production Economics, 154*, 39-47.
Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation and firm performance. *Expert Systems with Applications, 39*(10), 8899-8908.
Yang, L.-R., Chen, J.-H., & Wang, H.-W. (2012). Assessing impacts of information technology on project success through knowledge management practice. *Automation in Construction, 22*, 182-191.
Yesil, S., & Kaya, A. (2013). The Effect of Organizational Culture on Firm Financial Performance: Evidence from a Developing Country. *Procedia-Social and Behavioral Sciences, 81*, 428-437.
Zaied, A. N. H. (2012). An integrated knowledge management capabilities framework for assessing organizational performance. *International Journal of Information Technology and Computer Science (IJITCS), 4*(2), 1.
Zaied, A. N. H., Hussein, G. S., & Hassan, M. M. (2012). The Role of Knowledge Management in Enhancing Organizational Performance. *International Journal of Information Engineering and Electronic Business (IJIEEB), 4*(5), 27.
Zheng, W., Yang, B., & McLean, G. N. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research, 63*(7), 763-771.
Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2012). *Business research methods*: Cengage Learning.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar