

## The Relationship between Knowledge Management Practices and Organizational Performance: Evidence from Banking Sector of Southern Punjab, Pakistan

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### Abstract

The main objective of this study is to empirically investigate the relationship between knowledge management practices and organizational performance in the banking sector of districts of Punjab, Pakistan. Target population of the study was all the employees providing customer services of all banks located in the districts of Punjab province of Pakistan. Simple random sampling was used to select an appropriate and truly representative sample. Sample size of this research was 306 and out of 306 questionnaires, 291 were useful for the purpose of this research and hence making our response rate 95%. The reliability of data was tested by Cronbach's alpha and regression analysis was used for testing of hypotheses. All the hypotheses of the study were accepted which stated that information technology, organizational elements and knowledge have positive relationship with organizational performance and further this relationship was statistically significant. This study has been conducted in the banking industry which bars to generalize the results of this research to other business settings. The findings of this kind of study are possibly useful to decision making bodies within the Banking services and it is also helpful for the government policy makers to develop policies for the better operations of banking sector with the aim of growing banking industry. This study makes a contribution in knowledge management literature by empirically investigating the impact of knowledge management practices on organizational performance.

**Keywords:** Knowledge Management Practices, Information Technology, Organizational Elements, Knowledge, Organizational Performance.

### Introduction

Knowledge management (KM) is a new field which emerged in 1990s (King, 2009). KM is unique approach in the field of management. The chief cause after the evolution of this arena is the role of knowledge personnel in the development of knowledge economy (Jain and Moreno, 2015). Businesses are facing competition. Extensive burden is being generated by innovative encounters and worldwide rivalry among organizations. From knowledge management perspective, interior and exterior material assets are no longer only responsible to create durable competitive gain. The requisite of business at the moment is not merely what it keeps but also how it exploits knowledge in the best interest of the business. This concept, efficaciously employed in contemporary business is branded as knowledge management (KM).

The rivalry is getting firmer and sustainability turning out to be a problem in contemporary vibrant commercial environs. Knowledge management (KM) is being swiftly spread in educational spheres, along with the corporate domain which is giving rise to knowledge-based economy. Knowledge management enterprises have been propelled by a large number of corporations which mostly focus on technical angle of KM. Success of business is dependent on knowledge now-a-days. Knowledge management (KM), in simple words, means an organization's capability to learn from

previous experiences and use its knowledge effectively. Businesses are being knowledge concentrated and focus more on engaging “minds” than “hands”, and thereby enhancing the value of knowledge (Rual et al., 2005).

The main aim of this research study is to empirically investigate the relationship between knowledge management practices (KMP) and organizational performance (OP). KM consists of information technology (IT), Organizational elements and knowledge. I.T involves capturing of knowledge and usage of IT tools. Organizational elements have two constituents, first people and organizational climate, and second processes. Knowledge entails knowledge accumulation, knowledge utilization and knowledge sharing.

The period of speedy technical variation is similarly the stage of continuous tussle for upholding a competitive advantage. It is apparent that after land, labor and capital the knowledge is the main element of production (Abu-Jarad et al., 2010). Knowledge in simple words means “justified personal belief.” Knowledge is intellectual asset which may be either explicit or tacit. Explicit knowledge is in the form of rules, policies and procedures and it is therefore easy to copy and store such knowledge. On the contrary, the tacit knowledge which is in the minds of employees is the form of scholarly resource that cannot be copied easily. It therefore implies that if a worker chooses to quit the job, then the knowledge stored in his brain would also be lost. It would be a great loss to any business if its knowledge workers switch to another organization which offer them better opportunities and take advantage of their expertise which they have learned during their last job. A business should therefore not only attract, acquire, integrate and utilize knowledge but should also take steps to retain such knowledge and this is all related to knowledge management (Chen and Huang, 2007).

Knowledge conception, gathering, consolidating and utilization are known as KM that supports in attaining goals which in result accelerate business performance. Traditional ethics, workflow and stratagem too form part of KM (Chen and Huang, 2007). Change in organizational arrangements, practices, policies and expertise should be introduced so as to make the most of its value (Greiner et al., 2007).

Organizations introduce KMP due to its encouraging effect on business performance. Literature indicates there is positive relationship between KMP and OP (Ahmad et al., 2017). This relationship is proved in a study conducted in Croatia which suggests KMP leads to greater outcome in the form of worker development and enhanced OP (Kiessling et al., 2009). Several studies like (Marsh and Hocevar, 1985; Lin, 2000; Škrinjar et al., 2008; Čater and Čater 2009,) demonstrate that OP is positively affected by KMP but this link is hard to substantiate. The objective of this study is to empirically investigate the impact of KMP on OP of banking sector of southern Punjab, Pakistan.

There is dearth of systematic research in the field of KMP in the Pakistani context as compared to its importance. This study is an effort to fill the gap and inspect the relationship between KMP and OP. This study will empirically investigate the influence of KMP on firm performance.

This paper has been divided into seven parts. First part consists of introduction, research questions and objectives of the study. Second part consists of literature review theoretical framework and hypotheses are also conversed in this fragment. Research model is provided in part third. Fourth part comprises of research methodology. Results are enlisted in part fifth. Section six deals with discussion and conclusion while the limitations and future research directions are given in part seven.

### Theory and hypotheses development

There are different perspectives of KM i.e., business, industry, society and individual. KM came into being in 1950's and the concept was first used by Penrose in 1959. Variety of senses were assigned to concept. It is hard to express KM as the definition of KM is affected by certain situations. Khan K and Pillania (2008) defines KM as "The collection of processes that govern the creation, dissemination, and leveraging of knowledge to fulfill organizational objectives".

KBV posits the main cause of competitive advantage is knowledge (Grant, 1996; Michael, 1999). KM has gained significant attention in management spheres because of its ability to provide to organizations, strategic results linking to profitability, competitiveness and capability development (Oluikpe, 2012). Scholars of international repute are unanimous on the point that in this era of knowledge economy, competitive advantage can be achieved through knowledge assets of an organization (Monteverde and Teece, 1982). Apart from use of tangible assets, KM is also being applied by organization to get superior results (Lee and Sukoco, 2007). Variations in output describe how knowledge is achieved (Massingham, 2014). It is contended that organization can get profits from the growth of firm specific knowledge and for which workers must be inspired by the owner in the form of reward. KM specialists around the globe are determined that there is scarcity of research in KM regarding the relationship between KM and firm performance (Pérez Arrau and Muñoz Medina, 2014). In spite of the development in the hypothetical facet of KM, a need still exists there for more study and examination to augment the academic and applied research (Palacios Marqués and José Garrigós Simón, 2006).

KM literature has revealed its effectiveness in numerous areas. Individual knowledge is transformed into firm knowledge by Knowledge Management (Rašula et al., 2012). Previous studies proved that effective KM does not solely depends upon information technology. KM is incorporated into firms by greatest businesses devoid of giving ample consideration to the part and utility of KM (Paulin and Suneson, 2012; Obeidat and Abdallah, 2014; Hajir et al., 2015; Almajali et al., 2016). So as to thwart "imitation" by opponents growing consideration is being given on preservation of knowledge as the contemporary organizations take knowledge as a vital basis of sustained "competitive advantage" (Hackney et al., 2005).

KMP is need of time and mandatory for firm cos firm's collective awareness and the proficiency of its employees emend from KM. The creation of novel products and skills also come from KMP and previous studies on the topic supports this claim e.g. (Nonaka and Takeuchi, 1995; Argote et al., 2000). Michaelsen et al., (2002) are unanimous in their viewpoint that firm performance is accelerated by KMP. Sharing of knowledge by means of crafting fresh understanding, exploiting unsurpassed performs and trainings erudite results in greater firm performance.

Researchers like (McAdam and McCreedy 2000; Thompson and Walsham 2004; AlAmmary and Fung 2008), submit a number of advantages of KM by answering the question "why KM has gained strategic significance today". Ali and Ahmad in harmony with Cho (2001) clue that there are great benefits of KM and one of them is cost saving which comes from well knowledge distribution and quicker admittance to knowledge. This eventually leads to enhanced productivity and from enhanced profitability to innovative commercial prospects. Organization-based acknowledged particulars, causes of evidence and resolutions are effortlessly available to Personnel. The association between KM and their advantages is fairly intricate still we can try to look into that association. The benefit of KM established by Jarvenpaa and Staples (2001) as: Superior merchandise fame comes from successfully handling firm; further they claim that KM should be taken as vital plan of the business.

The objectives of KMP include upgrading and influencing the knowledge resources of firm which makes KMP effective, upgraded structural performances, improved conclusions and enhanced business performance. KM is basically affirm activity that put emphases on anything bosses may do to allow KM's aims to be attained, in what way they help inspire persons to contribute in realizing them and by what means they may generate public developments which would assist KM realization.

Most of the organization in Pakistan does not have devoted budget for KM and banking sector is also one of them. Riege (2005) mentioned thirty-nine prospective KM hurdles under three classes which are individual barriers, organizational barriers and technology barriers. On the basis of five well-proved cases of KM scheme miscarriage, Chua and Lam (2005) established that KM failure is due to following four factors, namely: "content, project management, culture and technology". Singh and Kant (2008) described the KM barriers under nine captions on the basis of literature review. Fahey and Prusak (1998) who have experience in KM application in hundred and more studies submitted that there are eleven lethal evils of KM that result in KM failure.

### ***Knowledge Management Practices***

KMP consists of information technology (IT), Organizational elements and knowledge that have been taken into account in this study.

#### ***Information Technology***

Literature review reveals that there are three constituents of KM and information technology (IT) is one of them (Sher, P. J. & Lee, V.C.2004; Hatzakis et al., 2005). IT is the greatest leading KMP (Hatzakis et al., 2005). The significance of IT systems is stressed by 70 % of research on KM that is advanced to achieve clear knowledge (Scarborough, 1998). KM writers whose major area of interest is not IT also indicated that IT is vital for fruitful KM (Almashari et al., 2002;Moffett et al., 2003; Sherif et al., 2006). To advance their markets and develop and sustain competitive advantage in the international markets, IT is the greatest ideal choice of almost every nation apart from other challenges. The computer was first used by "Packages Ltd." in Pakistan in 1957 for business purposes. The tradition of IT is growing steadily from that time. Pakistan introduced internet service in 1995. Since then public and private organizations perform assignment by utilizing IT and banks are no exceptions. Currently all the IT linked matters being supervised by ministry of IT.

Leader in the usage of IT seems to be fiscal area. One of the major investors in IT is monetary organizations. World's first Automated Teller Machine (ATM) which was invented by Barnes et al., (1973) which was fixed in New York at Chemical Bank (Shelly et al., 2004). Commercial banks contemplate the invention of ATM as great technological asset. Banking has been made easier for customers by ATM which is based on IT (Nsouli et al., 2002). In Pakistan, computer was presented to banking industry in 1965. The purchasing of computers by banks started to computerize their banking operations to enhance its efficiency. In banking industry, there is great investment in IT since that time (Akhtar, 2006). The Pakistani banks are now installing the most advance computerized "banking system like Misys, Sibel, and Fidelity" etc (Shaikh et al., 2004).

IT is one of KMP which enhances individual, group and firm effectiveness.

- Capturing knowledge: KMP deliver greater results when the level of apprehending knowledge by IT apparatuses is higher (Lee et al., 2005, Choi et al., 2008).

- Usage of IT tools: The impact of KMP on firm performance is better when the value of info, IT apparatuses, operator contentment, custom and approachability is greater (Almashari et al., 2002; Kulkarni and St Louis, 2003; Lee et al., 2005; Sherif et al., 2006,).

Therefore, we propose the following hypothesis:

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**H1.** There is positive relationship between information technology and organizational performance.

#### *Organizational Elements*

Knowledge management practices are significantly influenced by culture of business. The why and how of knowledge creation, distribution, and application in a business are owing to culture which governs the basic principles, ethics and standards of the firm. Knowledge creation and utilization by the workers and then incorporating this knowledge into processes of firm can help a business to realize and sustain competitive advantage.

- People & Organizational climate: creativeness, group effort, faith and cooperation amongst personnel are the factors upon which the success of KM is dependent (Scarborough et al., 1999; Kulkarni and St Louis, 2003; Moffett et al., 2003). KMP are greatly influenced by organizational elements which are made of two factors namely: first is people and organizational climate and the second is processes. People and organizational climate, which is the first part, it is general perception that KMP deliver better output when there is greater confidence, inventiveness, joint effort and partnership amid personnel.

- Processes: KM delivers encouraging upshots when KM deeds are assimilated into processes of business (Kulkarni and St Louis, 2003). Likewise, the greater the integration of KMP into business processes, the higher the results of KMP deliver (Scarborough et al., 1999, Kulkarni and St Louis, 2003). The inventive aptitude of the business is expanded by its vision statement and statement of purpose, rules and stratagems, its fundamental ethics and principles and finally by processes of business.

The second constituent of KM is Organizational elements (Rašula et al., 2008). There is variety of definitions of organization but this study defines organization as follow “a set of several key indicators, focused strictly on organizational climate elements (such as motivation and collaboration) and on organizational processes”. The first element of organization is People and the organizational climate which consists of faith, growth of inventive culture, creativeness, teamwork, part of managers and employees in policy-making, beliefs, cooperation, drive, and other significant features (Moffett et al., 2003; Carmeli and Tishler, 2004; Omar Sharifuddin Syed-Ikhsan and Rowland, 2004; Anantatmula and Kanungo, 2006). Conversely, the second constituent of organization is processes which are vital for effective KM (Rasula et.al, 2012).

Heisig (2009) describes KM as “set of four critical success factors (CSF) comprising of human-oriented aspects (culture, people, and leadership), firm-oriented aspects (processes and structures), technology-oriented aspects (infrastructure and applications), and management processes-oriented factors (strategy, goals, and measurement)”. According to Zack (1999) business strategy is strategic context of the firm which should be linked with KM to accomplish planned business performance. Lee et al., (2003) avow that actually slight pragmatic effort has been carried out to create link between knowledge approach and diverse KM practices, despite the too much argument existing on the topic. So there is ground for investigating what is the influence of KM policies on KM practices.

Therefore, we propose the following hypothesis:

**H2.** There is positive relationship between organizational elements and firm performance.

#### *Knowledge*

The idea of knowledge is equally important to management and academia alike. This study intends to search the avenues of knowledge and what is considered to be knowledge. Gao and Riley

(2010) described knowledge as;” information within a context”. One of business’s greatest valued resources is knowledge coos it represents instructions learned, way of problem solving, practices, best policies and innovative manners which are hard to imitate (Liebowitz and Wright, 1999).

Davenport and Prusak (1970) defines knowledge as “Knowledge is a mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information”. The question of utmost importance is: “why knowledge is necessary”. Knowledge alone is nothing until we do not take action on the basis of this knowledge i.e., gaining competitive advantage on the basis of this knowledge, utilizing knowledge to enhance firm performance and improving product features and quality etc. To cope with knowledge “is to identify, manage, and value items that the organization knows or could know: skills and experience of people, archives, documents, relations with clients, suppliers and other persons and materials often contained in electronic databases” (Week, 2000).

Applying unique methods may leads to fruitful KM. Knowledge is the third main element of KM (Rašula, et.al.2008). Knowledge is defined as “components of elements of knowledge accumulation, knowledge utilization and knowledge sharing” (Almashari et al., 2002). Internalization and externalization are sources of knowledge accumulation. Learning from past experience is knowledge utilization which includes individual and team knowledge. Knowledge sharing may be “formal” and “informal”. (Rašula et al, 2012). All elements of knowledge positively impact KMP and past studies support it.

Accumulation: KMP are more effective if knowledge accumulation is greater in the organization (Almashari et al., 2002; Lee and Choi, 2003; Lee et al., 2005; Choi et al., 2008). Nonaka and Takeuchi, (1995) describes externalization as follow: “process of articulating tacit knowledge into explicit concepts and metaphors are frequently used to facilitate the process”.

Utilization: KM yields better results in the presence of high knowledge utilization in the business (Kulkarni, and St, 2003). An additional vital element of knowledge is knowledge utilization. Wiig (1999) records that the worth of knowledge resources are appreciated once they are vended or merchandised for price or Spender (1996) once goods are generated or amenities are distributed. A pivotal constituent in KM Practice is Knowledge utilization. Owing to adhesiveness and implicitness of knowledge the worth of discrete and managerial knowledge is inherent in mainly on knowledge utilization from knowledge-based perspective (Spender, 1996). The exploitation and usage of knowledge in business’s value-addition method is known as knowledge utilization which entails the utilization of knowledge to generate and improve business proficiency. Likewise, knowledge utilization embraces adjusting, assimilating, and using knowledge to the business’s methods and produces. The capability of workers to employ knowledge with the objective of forming outlines for solution of tricky situations and dealing with trials in the business is described as knowledge utilization capability. Proper utilization of knowledge results in a reduced amount of errors or enhanced competence that leads to superior firm performance (Gold et al., 2001).

Sharing: Greater the sharing of knowledge either formal or informal leads to better KM effectiveness (Lee et al., 2005). Both to generate fresh knowledge by inversely joining prevailing knowledge and to grow into superior by using current knowledge is the objective of knowledge sharing. Knowledge sharing might be defined as “a social interaction culture, involving the exchange of employee knowledge, experiences, and skills through the whole department or organization”. Shared principles or social practices connected to the extent of knowledge amongst diverse personalities or elements inside an institute may be termed as knowledge sharing (Moorman and

Miner, 1998). Knowledge sharing is roughly in what way persons, crowds, and firms interconnect and study from one another.

Therefore, we propose the following hypothesis:

**H3.** There is positive relationship between knowledge elements and firm performance.

### ***Organizational Performance***

There is no consensus on the definition of organizational performance. Wheelen and Hunger (2000) describes performance as “an end result of an activity” while the organizational performance (OP) is the sum of all activities and process of organization. OP should be evaluated and measured by the administration so that the firm means and assets may be utilized in a superior fashion. Larsen and Wetherbe (1999) posits that “efficiency (productivity), organizational effectiveness and industry ranking” are the utmost commonly employed methods of OP. Robbin & Coulter (2003) defines efficiency as “minimum utilization of resources and getting maximum output” and effectiveness is “how well the job gets done”. Organizational performance (OP) or firm performance is a sign that gauges how well businesses attain their goals (Hamon, 2003). According to Ho (2008) the definition of OP is: “how well an organization accomplishes its objectives”.

### ***Organizational commitment***

Organizational commitment is the enthusiasm to place every exertions to attain the business objectives, standards and uphold the constructive bond and dwelling into business (Mowday et al., 1982). The bond amongst worker and the administration is revealed by the indication of Organizational commitment (OC). Apposite recompense proposal, prizes and additional inherent motivations and doles can boost OC. To hold the value personnel and to have them inspired, OC is mandatory. Organizational commitment and job satisfaction are two core reasons behind employees’ turnover. Job insecurity leads to little level of self-assurance which may result into frustration with the work and dissatisfaction with the occupation may leads to organizational commitment (Hackman and Oldham, 1975).

Emotional attachment with the firm is known as organizational commitment (O’Reilly and Chatman, 1986). Hochwarter et al., (2003) claim there is durable affiliation amongst political affairs, organizational commitment and turnover. Superior organizational performance leads to competitive advantage. Today banking environ is very competitive and if a bank is indifferent to its performance, it will fail to gain competitive advantage.

Organizational commitment has acknowledged considerable devotion in previous readings owing to its noteworthy impression on employment outlooks for instance “job satisfaction, performance, absenteeism, and turnover intentions”. All the HRM variables that are associated with commitment have been investigated in the work of information technology enterprises in India by (Paul and Anantharaman, 2004). Hislop et al., (2013) postulates that to hold workers and bring in them advanced stages of commitment; corporations are continuously involved in formulating service methods.

### ***Job Satisfaction***

In simple words, job satisfaction means the amount of return that a firm offers to its staff and it should not be little than which she/he anticipated. Hackman and Oldham (1975) enumerated five facets of job satisfaction which are: “talent diversity, task implication, task individuality, independence and liberty”. Nature of the work doesn’t prove that you are contented or discontented it depends that how much the human resources were paid for the work (Hochwarter et al., 2003). The intensity of job satisfaction would augment if a worker is given intrinsic prize in the form of pecuniary return (Mulinge and Mueller, 1998). Lee et al., (1999) specified various aspects which have

an effect on the work performance of the personnel which are remuneration of the human resources, communiqué of the superior, functioning milieu that corporation offer to its workers.

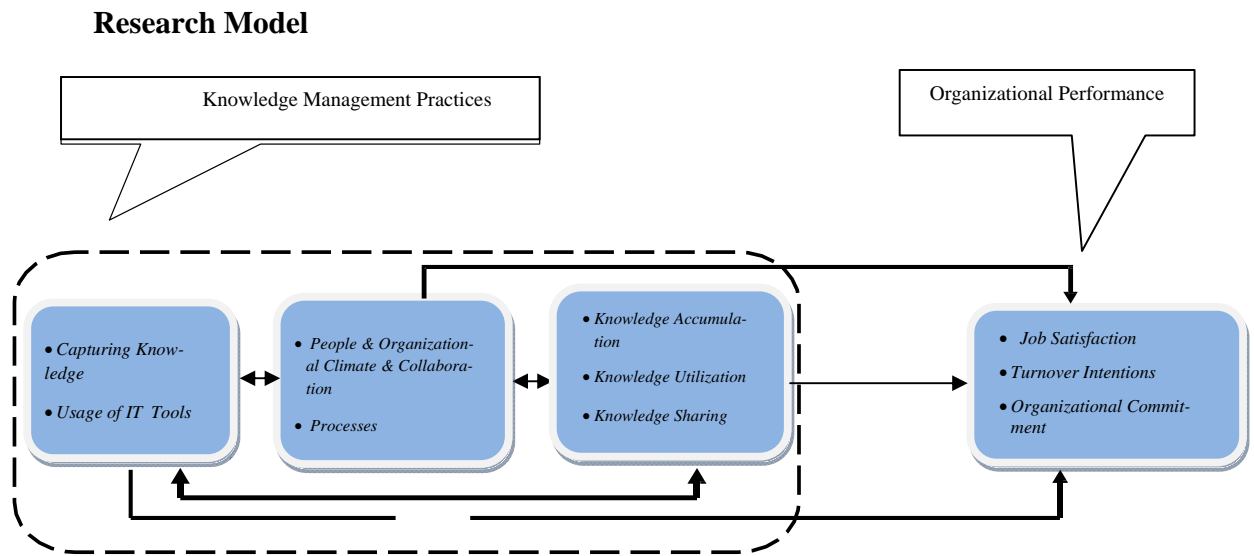
Compensation is offered by corporations to their workers for motivation to work hard. Compensation may be either in monetary or non-monetary form but usually workers are motivated by monetary compensation. Kathawala et al., (1990) conducted a study in the automobile sector and shed light upon very exciting outcomes which is that labourers and manual workers are solitary inspired by fiscal returns like pecuniary benefits. Businesses desires to inspire their human resources they must offer reimbursement schemes in the shape of appreciation, currency and when workers get this sort of prize they involuntarily get motivated with their employment (Zobal, 1998).

Scholar Herzberg (1966) is differing with the perception of Margulies. He claimed that both job satisfaction and reward are immaterial things while what actually matters is “working conditions” which is the blend of diverse things like work place offered by firm to its human resources, policies and laws of the business and safety measures adopted for workers. According to Arnolds and Boshoff (2001) the working condition also entails corporation temperature, noise and illumination of the business.

#### *Turnover Intensions*

Prior studies demonstrate the reasonable and vital relationship regarding the work satisfaction and turnover intensions. For instance, Wright and Bonett (1991) contends that discontented workers would like to quit the present work and looking for the new prospects that let them have lofty stage of satisfaction. Violent bahaviour, little interest in work and delaying tactics at work are some of the most common things that results from little job satisfaction. An employee discontented with his work would most likely to switch that job for another one that would offer him high stage of satisfaction. If a worker is also misfit there, she/he would look for another job that fits her/his personality. An individual would keep switching jobs until she/he finds a desired work. According to author, discontented workers have low morale that results in lower employee output and eventually workers leave the job. This phenomenon is known as worker turnover intentions and it also influences organizational performance negatively. Organizational goals cannot be achieved in the presence of dissatisfied workers that are unable to perform their duties efficiently and effectively (Griffeth et al., 2000). Lee and Mitchell (1994) contends in their study that there is direct and inverse link between job satisfaction and turnover intentions. Low level of work satisfaction results in higher turnover intentions. Businesses can diminish their recruitment, selection and training expenses by minimizing turnover intentions which will enhance employee satisfaction that will result in greater firm performance (Abelson and Baysinger, 1984). Hinkin and Tracey (2000) posit that a business have to bear five percent extra due to turnover intentions. Social scientists claim that job stress and dissatisfaction with work are two factors that enhance turnover intentions (Brotheridge and Grandey, 2002)





**Figure Research Model**

$$OP = \beta_0 + \beta_1IT + \beta_2OE + \beta_3KN + \mu$$

Where

OP = Organizational Performance

IT = Information Technology

OE = Organizational Elements

KN = Knowledge

$\mu$  = Error term

### Methodology

The instrument used to conduct this research is adopted from Rasula et al., (2012) which contains twenty one questions on KMP which are measured on five point Likert scale. Tool to measure OP is adopted from (Abu-Jarad et al., 2010) which contains thirteen questions on OP on five points Likert scale. Instrument used in this research comprises of two parts: first parts entails questions regarding demographic profile of participants while second part consists of KMP and OP questions.

The study is cross-sectional in nature that allows gathering data at one point in time. Survey is the design of this research and quantitative technique was used to conduct this research. The data was collected by self-administered questionnaire from Multan, Bahawalpur and Vehari districts of southern Punjab, Pakistan. Target Population, for this study, only those employees providing customer services, of all branches of all banks located in southern Punjab, Pakistan. Employees providing customer services include branch manager, assistant manager, assistant manager operations, deputy manager, operations manager, relationship manager, banking officer, agricultural officer, Mobile credit officer (MCO), Officer in-charge administration (OICA), loaning officer, assistants and tellers etc. Pilot study was performed to ascertain the method that would be used in a bigger level study (Leon et al., 2011). Data was gathered in almost three months. The sample size for study was 306. Simple random sampling technique was employed to gather data. 15 questionnaires were discarded for not being entirely filled. 291 questionnaires were useful for the purpose this study which makes a response rate of 95%. Analysis of the test was performed by using SPSS version

18. Validity and reliability was computed by performing exploratory factor analysis (EFA) and Cronbach's alpha respectively.

### Results

Normality of data is precondition for regression analysis. The normality of data was tested by performing skewness and kurtosis tests. The values for skewness were in the range of -0.513 to -1.572 and kurtosis values were from 0.109 to 1.448. The cut-off value for skewness and kurtosis range from zero to  $\pm 2$  indicates that data is normally distributed demonstrating that normality of data was not an issue in our data. Common method bias (CMB) has been checked by performing Harman's single factor test Williams and Anderson (1994) for using single source of data which verified that CMB was not a problem in the data. To guarantee the suitability of the factor analysis, Kaiser-Meyer-Olkin (KMO) test was conducted to check the sampling adequacy and Bartlett's test was performed to assess the homogeneity of variances for the measurement items (Hair et al., 2010). The outcomes of the KMO test indicated that figures for all the items were higher than the cut-off value of 0.50 and Bartlett's test of sphericity unveiled significant figures for all the items ( $p < 0.05$ ) implicating that factor analysis was apposite. The smallest value of exploratory factor analysis (EFA) was 0.535 while the highest value was 0.894. Results of regression analysis are possibly influenced by multicollinearity owing to lofty correlation among the predictor variables. Multicollinearity has been gauged by performing variance inflation factor (VIF). The value of VIF for independent and dependent variables was 1.007 which is below the threshold value of 2.5 as recommended by (Allison, 1999). Hence multicollinearity was not an issue in the data. Further the outcomes of demographic variables, Cronbach's alpha, correlation, regression analysis and ANOVA has been given and discussed below along with tables.

**Table 1. Demographics characteristics of respondents**

Description	Number of respondents	Frequency		Percent
Gender	Male	291	251	86.3
	Female		40	13.7
Age	18–30	291	155	53.3
	31–40		92	31.6
	41–50		35	12.0
	Above 50		9	3.1
Marital Status	Single	291	102	35.1
	Married		189	64.9
Qualification	MS	291	24	8.2
	Master		170	58.4
	Bachelors		82	28.2
	Inter		15	5.2
Years of Services	Less than 5 years	291	145	49.8
	6-10		87	29.9
	11-15		27	9.3
	More than 15 years		32	11.0
Designation	Operation manager	291	31	10.7
	Branch manager		28	9.6

Teller		23	7.9
GBO		21	7.2
	Relationship manager	18	6.2
	Loan officer	12	4.1
	Customer services officer	22	7.6
	Other	136	46.7

**Table 2 Pearson Correlations and Reliability Statistics**

	IT	KN	OE	OP	A
IT	1.000000				0.75
KN	0.638986	1.000000			0.76
OE	0.464675	0.526868	1.000000		0.85
OP	0.537226	0.708672	0.614467	1.000000	0.87

\*Correlation is significant at the 0.01 level (two-tailed)

Correlation matrix is shown in Table 3. The results indicate all the three elements of KMP have positive correlation with OP. Knowledge has strong correlation with OP (i.e.,  $r=0.708$ ), OE has second strong correlation with OP (i.e.,  $r=0.614$ ) and IT has moderate positive correlation with OP (i.e.,  $r=0.537$ ) respectively. Nunnally (1978) contends that a data is more reliable if the value of Cronbach's alpha is greater than 0.07. In present research work, the value of Cronbach's alpha of all independent and dependent variables is higher than benchmark value of 0.07 which signifies that all the items are reliable.

**Table 3 Regression Analysis**

Regression Analysis									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.765 <sup>a</sup>	.492	.443	.36745	.492	48.547	3	287	.000
a. Predictors: (Constant), KN, IT, OE									
b. Dependent Variable: OP									

R square is also known as coefficient of determination that explicates the variation amid dependent variable (organizational performance) which may be elucidated by independent variables (knowledge management practices). It may be perceived from Table that 49.2% variation in organizational performance of banking sector of southern Punjab, Pakistan is due to Knowledge Management Practices. This research detected that Knowledge Management Practices has explicated 49.2% variations in organizational performance subsequent to making modification founded on number of forecaster.

Table 4 demonstrates that f value is 48.547 and sig is =  $0.000 < 0.05$  which is less than the value of alpha 0.05. As a result we may reach on conclusion that this model is fit and valid.

**Table 4 ANOVA Model**

ANOVA <sup>a</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34.731	3	7.742	48.547	.000 <sup>b</sup>
	Residual	46.390	287	.147		
	Total	81.121	290			
a. Dependent Variable: OP						
b. Predictors: (Constant), KN, IT, OE						

**Table 5. Coefficients of Regression Analysis**

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.824	.489		4.686	.000
	IT	.239	.069	.199	3.454	.000
	OE	.253	.042	.353	6.057	.001
	KN	.297	.107	.145	2.772	.006
a. Dependent Variable: OP						

The outcome of linear regression reveals that positive and significant relationship exists between knowledge management practices and organizational performance. All the KMP namely, IT, OE and KN has a p-value of less than 0.05 which is less than the value of alpha 0.05. As a result we may come to conclusion that IT, OE and KN has positive significant effect on organizational performance of banking sector of southern Punjab, Pakistan.

The coefficients of IT is 0.239, OE is 0.253 and KN is 0.297 which means that for every unit augment or progress in the information technology, organizational elements and knowledge, the organizational performance would be accelerated by 0.239, 0.253 and 0.297 times while keeping all other variables constant.

### Discussion and conclusions

The outcomes of the study demonstrate that Knowledge Management Practices which consists of information technology, organizational elements and knowledge have positive significant impact on business performance. The upshot of this study is in line with previous studies like Rasula et al., (2012) which investigated the impact of Knowledge Management Practices on Firm performance and found positive significant link between knowledge management and organizational performance. Sangari et al., (2015) investigated the impact of knowledge management practices on supply chain in Iranian companies and established positive significant relationship amid KMP and firm performance. Positive significant association among knowledge management practices of information technology, organizational elements and knowledge with the organizational performance has been ascertained by this study. Literature also supports the outcome of this research which maintains that there is positive relationship amid KMP and organizational performance. Most of the studies investigating the impact of KM practices on OP have been conducted in advance countries but current research has examined the influence of KMP on OP in the banking sector of southern Punjab, Pakistan. There is dearth of systematic research in the field of KMP in the Pakistani context as compared to its importance which gave motivation to the scholar for undertaking this research.

It is the IT that makes the work easier and interesting for worker and improves the efficiency of worker. Enhanced employee performance results in greater firm performance. Greater the usage and quality of IT, better the worker productivity and greater the firm performance. This study confirmed that IT significantly influences business performance in a positive manner. Researchers like (Parthasarthy and Sethi 1993; Kelley, 1994; Elliott and O'Dell 1999) also have investigated the impact of IT on firm performance and found positive impact.

Valmohammadi and Ahmadi (2015) contend that organizational elements such as people, culture and processes contribute to firm performance. In this research, the organizational elements demonstrate the positive significant link with the performance of banking sector of districts Multan, Bahawalpur and Vehari. The KMP is very much contingent upon the faith, inventiveness, collaboration, and partnership amongst workers that in unison incorporated the effect on firm performance. Greater level of the confidence, alliance, cooperation and creativeness among the workers, greater is the business performance. Second part of organizational elements is processes which entails recycling of knowledge. In accordance with Nonaka and Takeuchi a technology- focused policy should be executed for a KM process which entails clear knowledge and workers focused policy should be implemented for KM process that entail implied knowledge. Greater the business integrates knowledge into its processes, greater the organizational performance. The results of this empirical research is similar to (Kopelman et al., 1990).

Gold et al. (2001) established in his study that knowledge has positive effect on business performance. Likewise, Lawler III and Mohrman 2003; Zack et al., (2009) ascertained in their study that knowledge has positive link with firm performance. Lin 2000; Lee and Yu (2004) also suggested that elements of knowledge positively affect organizational performance.

This empirical research adds to current literature that KMP of banking sector of southern Punjab would result in diminishing the link between knowledge management practices and organizational performance. Even though prior reading relating knowledge management practices to business performance, there is slight empirical support on the topic of the liaison between knowledge management practices and organizational performance of human resources in the banking industry of Pakistan. This research work offer confirmation with reference to this association.

This research revealed that information technology has positive and significant bond with organizational performance of banking sector of southern Punjab, Pakistan. It signifies that if banks offer their workers inventive place of work having state of the art information technology systems, and human resources perform their duties with full loyalty and dedication, this produces enhanced employee output which in turn leads to accelerated organizational performance. The outcomes of this research is corresponding to (Shaukat and Zafarullah 2009; Rasula et al., 2012) which contends that IT has positive significant effect on firm performance.

Organizational elements consisting of people and processes also influence the firm performance in a positive manner. The results of organizational elements are in line with (Valmohammadi and Ahmadi 2015; Ahmed et al., 2017) which claim that organizational elements like people, culture and processes have positive relationship with organizational performance.

In accordance with the results of this research, knowledge as well has the positive significant impact on the organizational performance of banking sector of southern Punjab, Pakistan. It indicates the degree to which the businesses generate, utilize and share knowledge. If a firm has a greater level of knowledge creation, utilization and sharing, it will have better firm performance as compared to those businesses that do not encourage knowledge creation, utilization and sharing in their business. So businesses should focus on creating, utilizing and sharing knowledge in order to get superior organizational performance. The results of this study are in line with (Zack et al., 2009;

Rasula et al., 2012; Ahmed, et al., 2017) and which claims knowledge is positively associated with organizational performance.

To sum up, this empirical research may conclude that KMP which consists of information technology, organizational elements and knowledge found to have been the positive and significant predictor of organizational performance of banking sector of districts of southern Punjab.

### **Limitations and future research**

First, there is lack of time and funding for the research and sample size for the study is also comparatively slight which bars to generalize the results of this study to other settings. Future research can be conducted by replicating this study in other sectors like small and medium enterprises (SMEs), hotel sector etc to enhance the generalizability of this research. Second, this project takes into account only non-financial measure to detect organizational performance (OP) while further studies can employ both financial and non-financial measures to determine OP. Quantitative method was adopted to conduct this study while future research can employ both qualitative and quantitative methods. Future studies can include mediators like organizational learning or organizational innovation in the model. Future study can also entail moderator like organizational culture in the model. Last but not the least, it was a cross sectional study while further study can be cross sectional research to generalize these results.

### **References**

- Abelson, M. A. & Baysinger, B. D. (1984). Optimal and dysfunctional turnover: Toward an organizational level model. *Academy of management Review*, 9, 331-341.
- Abu-Jarad, I. Y., Yusof, N. A. & Nikbin, D. (2010). A review paper on organizational culture and organizational performance. *International Journal of Business and Social Science*, 1.
- Ahmad, N., Lodhi, M. S., Zaman, K. & Naseem, I. (2017). Knowledge management: a gateway for organizational performance. *Journal of the Knowledge Economy*, 8, 859-876.
- Akhtar, S. (2006). Pakistan's Financial Services Sector-A Future Perspective'. *Money Plus*, July, 31, 2006.
- Alammary, J. & Fung, C. C.(2008). Knowledge management strategic alignment in the Gulf Cooperation Council countries. *The Electronic Journal of Knowledge Management*, 6, 75-84.
- Allison, P. D.(1999). *Multiple regression: A primer*, Pine Forge Press.
- Almajali, D. A., Masa'deh, R. E. & Tarhini, A. (2016). Antecedents of ERP systems implementation success: a study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, 29, 549-565.
- Almashari, M., Zairi, M. & Alathari, A. (2002). An empirical study of the impact of knowledge management on organizational performance. *Journal of Computer Information Systems*, 42, 74-82.
- Anantatmula, V. & Kanungo, S. (2006). Structuring the underlying relations among the knowledge management outcomes. *Journal of knowledge management*, 10, 25-42.
- Argote, L., Ingram, P., Levine, J. M. & Moreland, R. L. (2000). Knowledge transfer in organizations: Learning from the experience of others. *Organizational behavior and human decision processes*, 82, 1-8.
- Arnolds, C. & Boshoff, C. (2001). The challenge of motivating top management: A need satisfaction perspective. *SA Journal of Industrial Psychology*, 27, 39-42.

- Barnes, T., Chastain, G. & Wetzel, D.(1973). Credit card automatic currency dispenser. Google Patents.
- Brotheridge, C. M. & Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of “people work”. *Journal of vocational behavior*, 60, 17-39.
- Carmeli, A. & Tishler, A. (2004). The relationships between intangible organizational elements and organizational performance. *Strategic management journal*, 25, 1257-1278.
- Čater, T. & Čater, B. (2009). (In) tangible resources as antecedents of a company's competitive advantage and performance. *Journal for East European Management Studies*, 186-209.
- 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, 104-118.
- Cho, Y. (2001). Monopoles and knots in Skyrme theory. *Physical review letters*, 87, 252001.
- Choi, B., Poon, S. K. & Davis, J. G.(2008). Effects of knowledge management strategy on organizational performance: A complementarity theory-based approach. *Omega*, 36, 235-251.
- Chua, A. & Lam, W. (2005). Why KM projects fail: a multi-case analysis. *Journal of knowledge management*, 9, 6-17.
- Davenport, T. & Prusak, L. 1970. L.(2000). *Working Knowledge: How Organizations Manage What They Know*.
- Elliott, S. & O'dell, C.(1999). Sharing knowledge and best practices: the hows and whys of tapping your organization's hidden reservoirs of knowledge. *Health Forum Journal*, 1999. 34.
- Fahey, L. & Prusak, L.(1998). The eleven deadliest sins of knowledge management. *California management review*, 40, 265-276.
- Gao, Y. & Riley, M.(2010). Knowledge and identity: A review. *International Journal of Management Reviews*, 12, 317-334.
- Gold, A. H., Malhotra, A. & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of management information systems*, 18, 185-214.
- Greiner, M. E., Böhmman, T. & Krcmar, H.(2007). A strategy for knowledge management. *Journal of knowledge management*, 11, 3-15.
- Griffeth, R. W., Hom, P. W. & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of management*, 26, 463-488.
- Hackman, J. R. & Oldham, G. R. (1975). Development of the job diagnostic survey. *Journal of Applied psychology*, 60, 159.
- Hackney, R., Desouza, K. & Loebbecke, C. (2005). Cooperation or competition: knowledge sharing processes in inter-organizational networks. *Knowledge Management: Nurturing Culture, Innovation, and Technology*. World Scientific.
- Hair, J. F., Anderson, R. E., Babin, B. J. & Black, W. C. (2010). *Multivariate data analysis: A global perspective (Vol. 7)*: Pearson Upper Saddle River. NJ.
- Hajir, J., Obeidat, B. Y., Al-Dalahmeh, M. A. & Masa'deh, R. (2015). The role of knowledge management infrastructure in enhancing innovation at mobile telecommunication companies in Jordan. *European Journal of Social Sciences*, 50, 313-330.
- Hatzakis, T., Lycett, M., Macredie, R. D. & Martin, V. A. (2005). Towards the development of a social capital approach to evaluating change management interventions. *European Journal of Information Systems*, 14, 60-74.
- Heisig, P. (2009). Harmonisation of knowledge management—comparing 160 KM frameworks around the globe. *Journal of knowledge management*, 13, 4-31.

- Herzberg, F. I.(1966). Work and the nature of man.
- Hinkin, T. R. & Tracey, J. B. (2000).The cost of turnover: Putting a price on the learning curve. *Cornell hotel and restaurant administration quarterly*, 41, 14-21.
- Hislop, H., Avers, D. & Brown, M.(2013). *Daniels and Worthingham's Muscle Testing-E-Book: Techniques of Manual Examination and Performance Testing*, Elsevier Health Sciences.
- Hochwarter, W. A., Kacmar, C., Perrewe, P. L. & Johnson, D.(2003). Perceived organizational support as a mediator of the relationship between politics perceptions and work outcomes. *Journal of Vocational Behavior*, 63, 438-456.
- Jain, A. K. & Moreno, A. (2015). Organizational learning, knowledge management practices and firm's performance: an empirical study of a heavy engineering firm in India. *The Learning Organization*, 22, 14-39.
- Jarvenpaa, S. L. & Staples, D. S. (2001). Exploring perceptions of organizational ownership of information and expertise. *Journal of Management Information Systems*, 18, 151-183.
- Kathawala, Y., Moore, K. J. & Elmuti, D. (1990). Preference between salary or job security increase. *International Journal of Manpower*, 11, 25-31.
- Kelley, M. R. (1994). Productivity and information technology: The elusive connection. *Management science*, 40, 1406-1425.
- Khan K, A. & Pillania, R. K. (2008). Strategic sourcing for supply chain agility and firms' performance: A study of Indian manufacturing sector. *Management Decision*, 46, 1508-1530.
- 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, 421-433.
- King, W. R. (2009). Knowledge management and organizational learning. *Knowledge management and organizational learning*. Springer.
- Kopelman, R. E., Brief, A. P. & Guzzo, R. A. (1990). The role of climate and culture in productivity. *Organizational climate and culture*, 282, 318.
- Kulkarni, U. & St Louis, R. (2003). Organizational self assessment of knowledge management maturity. *AMCIS 2003 Proceedings*, 332.
- Larsen, T. J. & Wetherbe, J. C. (1999). An exploratory field study of differences in information technology use between more-and less-innovative middle managers. *Information & Management*, 36, 93-108.
- Lawler Iii, E. E. & Mohrman, S. A. (2003). HR as a strategic partner: What does it take to make it happen? *People and Strategy*, 26, 15.
- Lee, H. & Choi, B.(2003). Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination. *Journal of management information systems*, 20, 179-228.
- Lee, K. C., Lee, S. & Kang, I. W. (2005). KMPI: measuring knowledge management performance. *Information & management*, 42, 469-482.
- Lee, L. T.-S. & Sukoco, B. M. (2007). The effects of entrepreneurial orientation and knowledge management capability on organizational effectiveness in Taiwan: the moderating role of social capital. *International Journal of Management*, 24, 549.
- Lee, T. W. & Mitchell, T. R.(1994). An alternative approach: The unfolding model of voluntary employee turnover. *Academy of Management Review*, 19, 51-89.



- Lee, T. W., Mitchell, T. R., Holtom, B. C., Mcdaneil, L. S. & Hill, J. W. (1999). The unfolding model of voluntary turnover: A replication and extension. *Academy of Management journal*, 42, 450-462.
- Lee, Y., Kozar, K. A. & Larsen, K. R. (2003). The technology acceptance model: Past, present, and future. *Communications of the Association for information systems*, 12, 50.
- Leon, A. C., Davis, L. L. & Kraemer, H. C. (2011). The role and interpretation of pilot studies in clinical research. *Journal of psychiatric research*, 45, 626-629.
- Liebowitz, J. & Wright, K. (1999). Does measuring knowledge make “cents”? *Expert systems with applications*, 17, 99-103.
- Lin, Z. (2000). Organizational restructuring and the impact of knowledge transfer. *Journal of Mathematical Sociology*, 24, 129-149.
- Marsh, H. W. & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological bulletin*, 97, 562.
- Massingham, P. (2014). An evaluation of knowledge management tools: Part 1—managing knowledge resources. *Journal of Knowledge Management*, 18, 1075-1100.
- Mcadam, R. & Mccreeedy, S. (2000). A critique of knowledge management: using a social constructionist model. *New technology, work and employment*, 15, 155-168.
- Michaelsen, L. K., Knight, A. B. & Fink, L. D. (2002). *Team-based learning: A transformative use of small groups*, Greenwood publishing group.
- Moffett, S., Mcadam, R. & Parkinson, S. (2003). An empirical analysis of knowledge management applications. *Journal of knowledge Management*, 7, 6-26.
- Monteverde, K. & Teece, D. J. (1982). Supplier switching costs and vertical integration in the automobile industry. *The Bell Journal of Economics*, 206-213.
- Moorman, C. & Miner, A. S. (1998). Organizational improvisation and organizational memory. *Academy of management Review*, 23, 698-723.
- Mowday, R. T., Porter, L. W. & Steers, R. M. (1982). Employee-organization linkage. *The psychology of commitment absenteeism, and turn over* \_ Academic Press Inc. London.
- Mulinge, M. & Mueller, C. W. (1998). Employee job satisfaction in developing countries: the case of Kenya. *World Development*, 26, 2181-2199.
- Nonaka, I. & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*, Oxford university press.
- Nsouli, M. S. M., Rached, M. M. & Funke, M. N. (2002). *The speed of adjustment and the sequencing of economic reforms: Issues and guidelines for policymakers*, International Monetary Fund.
- Nunnally, J. (1978). *Psychometric methods*. New York: McGraw-Hill.
- O'reilly, C. A. & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of applied psychology*, 71, 492.
- Obeidat, B. Y. & Abdallah, A. B. (2014). The relationships among human resource management practices, organizational commitment, and knowledge management processes: A structural equation modeling approach. *International Journal of Business and Management*, 9, 9.
- Oluikpe, P. (2012). Developing a corporate knowledge management strategy. *Journal of Knowledge Management*, 16, 862-878.

- Omar Sharifuddin Syed-Ikhsan, S. & Rowland, F.(2004). Knowledge management in a public organization: a study on the relationship between organizational elements and the performance of knowledge transfer. *Journal of knowledge management*, 8, 95-111.
- Palacios Marqués, D. & José Garrigós Simón, F. (2006). The effect of knowledge management practices on firm performance. *Journal of knowledge management*, 10, 143-156.
- Parthasarthy, R. & Sethi, S. P. (1993). Relating strategy and structure to flexible automation: a test of fit and performance implications. *Strategic Management Journal*, 14, 529-549.
- Paul, A. & Anantharaman, R. (2004). Influence of HRM practices on organizational commitment: A study among software professionals in India. *Human Resource Development Quarterly*, 15, 77-88.
- Paulin, D. & Suneson, K. (2012). Knowledge transfer, knowledge sharing and knowledge barriers—three blurry terms in KM. *The Electronic Journal of Knowledge Management*, 10, 81-91.
- Pérez Arrau, G. & Muñoz Medina, F. (2014). Administración de recursos humanos en pequeñas y medianas viñas en Chile. *Ciencia e investigación agraria*, 41, 141-151.
- Rašula, J., Bosilj Vukšić, V. & Indihar Štemberger, M. (2008). The integrated knowledge management maturity model. *Zagreb International Review of Economics & Business*, 11, 47-62.
- Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of knowledge management*, 9, 18-35.
- Rual, J.-F., Venkatesan, K., Hao, T., Hirozane-Kishikawa, T., Dricot, A., Li, N., Berriz, G. F., Gibbons, F. D., Dreze, M. & Ayivi-Guedehoussou, N. (2005). Towards a proteome-scale map of the human protein–protein interaction network. *Nature*, 437, 1173.
- Sangari, M. S., Razmi, J. & Zolfaghari, S. (2015). Developing a practical evaluation framework for identifying critical factors to achieve supply chain agility. *Measurement*, 62, 205-214.
- Scarborough, H. S. (1998). Predicting the future achievement of second graders with reading disabilities: Contributions of phonemic awareness, verbal memory, rapid naming, and IQ. *Annals of Dyslexia*, 48, 115-136.
- Scarborough, H., Swan, J. & Preston, J. (1999). Knowledge management and the learning organization. *London: IPD*.
- Shaikh, B. T., Kahloon, A., Kazmi, M., Khalid, H., Nawaz, K., Khan, N. & Khan, S. (2004). Students, stress and coping strategies: a case of Pakistani medical school. *EDUCATION FOR HEALTH-ABINGDON-CARFAX PUBLISHING LIMITED-*, 17, 346-353.
- Shaukat, M. & Zafarullah, M. (2009). Impact of information technology on organizational performance: An analysis of qualitative performance indicators of Pakistan’s banking and manufacturing companies. *European Journal of Economics, Finance and Administrative Sciences*, 16, 36-49.
- Shelly, G.B, & M.E. Cashman. (2004). ‘Discovering Computers: A gateway to information Web Enhanced’, Thomson Course Technology Boston, U.K. 39: 74-78.
- Sherif, K., Hoffman, J. & Thomas, B. (2006). Can technology build organizational social capital? The case of a global IT consulting firm. *Information & management*, 43, 795-804.
- Singh, M. & Kant, R. (2008). Knowledge management barriers: An interpretive structural modeling approach. *International Journal of Management Science and Engineering Management*, 3, 141-150.
- Škrinjar, R., Bosilj-Vukšić, V. & Indihar-Štemberger, M. (2008). The impact of business process orientation on financial and non-financial performance. *Business Process Management Journal*, 14, 738-754.

- Spender, J. C.(1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic management journal*, 17, 45-62.
- Thompson, M. & Walsham, G. (2004). Placing knowledge management in context. *Journal of Management Studies*, 41, 725-747.
- Valmohammadi, C. & Ahmadi, M. (2015). The impact of knowledge management practices on organizational performance: A balanced scorecard approach. *Journal of Enterprise Information Management*, 28, 131-159.
- Week, B. (2000). Knowledge management and new organization forms: A framework for business model innovation. *Knowledge management and virtual organizations*, 2, 13-27.
- Wheelen, T. L. & Hunger, J. D. (2000). *Strategic Management and Business Policy–Entering 21st Century Global Society*, 7-th edition. Prentice-Hall, New Jersey.
- Wiig, K. M. (1999). What future knowledge management users may expect. *Journal of knowledge management*, 3, 155-166.
- Williams, L. J. & Anderson, S. E. (1994). An alternative approach to method effects by using latent-variable models: Applications in organizational behavior research. *Journal of applied psychology*, 79, 323.
- Wright, T. A. & Bonett, D. G. (1991). Growth coping, work satisfaction and turnover: A longitudinal study. *Journal of Business and Psychology*, 6, 133-145.
- Zack, M. H. (1999). Developing a knowledge strategy. *California management review*, 41, 125-145.
- Zobal, C. (1998). The “ideal” team compensation system-an overview: Part I. *Team Performance Management: An International Journal*, 4, 235-249.