



Mediating Role of Knowledge Creation and Sharing between Organizational Culture and Performance: An Empirical Analysis of Pakistan's Banking Sector

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ABSTRACT

The present study investigates the extent of knowledge management (KM) practices in banking sector of Pakistan. In this regard, effects of organizational culture (combination of adaptability and involvement) on knowledge creation and sharing are scrutinized along with the affect of knowledge creation and sharing on organizational performance. There are in total 902 branches of all the banks out of which 732 are of local private banks, 136 are of local nationalized banks and 34 belong to foreign bank groups. Out of these branches, 244, 45 and 11 branches have been selected from local private, nationalized and foreign banks respectively. Branch managers, operations managers or any other key position holder have been targeted for data collection through a well structured questionnaire. 258 branches returned questionnaire completed in all respects. Different statistical techniques such as confirmatory factor analysis, reliability analysis, correlation analysis and structural equation model have been applied. The findings of the study reveal that organizational culture has significant positive effects on knowledge creation and knowledge sharing. Both these dimensions of KM significantly increase the performance of organization. Moreover, mediation of both knowledge management dimensions between organizational culture and organizational performance has been proved.

KEY WORDS: Organizational Culture, Knowledge Creation and Sharing, Organizational Performance, Banking Sector, Pakistan.

1. INTRODUCTION

In the contemporary business ambiance knowledge management (KM) is playing a critical role in the continuous changing conditions and adaption of new technologies in business organizations. Employees endeavor to improve their performance and efficiency in the business organizations by utilizing knowledge in a better way. KM is an effort for creation, retention, utilization, memorization, dissemination and handling of knowledge [1]. Moreover, it elaborates the different techniques to facilitate the employees who worked on various levels of organizations independently, in groups or in teams. KM provides them a course of action to manage what and how employees create, retain, share and apply knowledge systematically and consistently about organizational culture, IT infrastructure and processes capabilities [2].

KM has attained great attention from corporate management and academicians to improve the individuals and organizational performance. In this connection, various scholars analyzed the framework of KM capability in relationship with different enablers. For instance, a framework assessing the effects of knowledge infrastructure on organizational effectiveness has been developed [1, 3]. However, such studies did not provide a thorough explanation of KM practices with detailed organizational components and organizational success [4]. Gold, et al., [3] investigated culture in general perspective rather than with specific dimensions. Moreover, several research studies discussed the various aspects of organizational culture as an antecedents of KM process like trust, teamwork, collaboration, formalization, centralization, learning, expertise and innovativeness [5-7].

Zheng, Yang, & McLean, [8] viewed that there are some gaps in literature regarding the mediation of KM practices between different organizational components and corporate performance. To address such gaps, Zheng, et al., [8] explored the mediating role of KM practices between the relationship of organizational culture, structure and strategy with organizational performance. They used cultural dimensions such as consistency, mission, involvement and adaptability as the dimensions of culture introduced by Dension [9] in US and South Asian cultural context. In the same line, two of four cultural dimensions named as adaptability and involvement has been explored in the current study as KM enablers. The justification for choosing these two dimensions in the previous studies is [10] that consistency and mission are not contributing factors to the improvement of innovation. The plausible justification

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for these findings is that mission and consistency lead employees to have strategic focus and to follow standard operating procedures of organization despite of rapidly changing environment. On the other hand, Denison [9] defined involvement as employees are given opportunity to engage in organizational decision making and in return exhibit higher level of motivation. Similarly, adaptability is defined as adapting changes to address environmental changes. Both of these dimensions seem that they may increase KM practices so in the current study thus, taken as antecedents of knowledge creation and sharing in this study.

In order to fill literature gap, the current study is conducted to measure the effects of organizational culture (combination of adaptability and involvement) knowledge creation and sharing and then influence of knowledge creation and sharing on organizational performance. Moreover, the mediating role of knowledge creation and sharing between the relationship of organizational culture and organizational performance has also been measured. The next part of the study is about the previous relevant studies. Third part is about the research methodology used in this study. Fourth part consists of results and discussion following the conclusion part including implications, limitations and future area of this research which can be addressed in future.

2. LITERATURE REVIEW

Knowledge management (KM) is described as “*a process that drives innovation by capitalizing on organizational intellect and experience*” [11, pp. 46]. KM has been classified in various dimensions among which knowledge creation and sharing have been considered in this study. For the survival of business organizations knowledge creation and sharing has a great importance [3]. Nonaka, [12] described knowledge creation as “innovation that can be better understood as a process in which the organizations create and define problems and then actively develop new knowledge to solve them” (p.14). Knowledge sharing involves transfer of personal and organizational knowledge from one person to another, from one group to another and from one department to another. Knowledge sharing is defined as the transmission and distribute of knowledge between individuals or among groups. Corporate members also collaborate with outer environmental resources because of knowledge sharing [13]. Organizational Performance is the outcome of several business factors, including work processes, team/group communication and interaction, corporate culture and image, policies, leadership, and a climate that promotes innovation, creativity, and loyalty [14].

2.1 Organizational Culture with Knowledge Creation and Sharing

The ideas of Knowledge Management (KM) will not get success if they are not supported by an organization's culture. Cultural facets must be considered when escalating KM strategies. Various studies explored the relationship of organizational cultural dimensions with KM. Researches during 1990s observed organizational culture as a primary facet of an organization's operation and a decisive driver of success [15, 16]. Apparently in the context of shared values, beliefs, assumption, thoughts, and code of conduct, organizational culture is hypothesized as significant in contributing to the establishment of organizational functions [17]; combining organizational activities in interrelated and interdependent manner [18]; and helping in accomplishment of organizational objectives [9].

Long & Fahey, [19] suggested that organizational culture is a major barrier in utilizing the intellectual assets. They explored this phenomenon in fifty organizations where knowledge managers recognized organizational culture as a major barrier to create and implement knowledge assets. The authors have proposed four ways in which an organization's culture influences its behavior towards knowledge creation, sharing and use. First is about the sharing factor of knowledge and its worth; second focuses on the relationship of an individual with its organization, third is about the individual's shared interaction which determines how knowledge will be used in certain situations and fourth is about the creation, distribution and legitimization of knowledge. Similarly, Seufert, Von Krogh, & Bach, [14] describe knowledge as individual and collective practices that create social interaction among society members and human developments. Both of these research groups concluded that the phenomenon of KM is knowledge created by people who are working together in organizational setup and creation process is strongly influenced by interaction of people and cultural factors. Alavi, et al., [5] examine that capability, formalization, collaboration, autonomy and innovativeness as the dimensions of organizational culture that direct to successful KM. Organizational culture is one of the most dominant variables that drives the organization to allow or obstruct KM. [20, 21]. Saeed, et al., [7] explored the relation between KM creation and organizational culture by using the dimensions of trust, learning, collaboration and formalization. The outcomes of the research exposed that formalization; collaboration and trust have positive and significant affect on KM practice. In order to go one step ahead in the same line of research with respect to the Pakistani cultural context, the current study explored the relationship of organizational cultural with knowledge creation and sharing process.

Denison's model [22] elaborates various facets of culture such as adaptability, consistency, involvement and mission. The joint effects of these traits assist the capability for synchronization and integration of resources which resides inside the organization and outside the organization to enhance the organizational performance. In addition, the composition of model elaborates three value dimensions of each trait. For example the involvement trait consists of elements of empowerment, team orientation and capability development. The factors that are valued by the firms include impact of employee initiative, individual ability and collaborative work of employees to achieve mutual goals. The adaptability trait which is the second dimension is concerned with the necessary changes to cope with the challenges of the external environment. Moreover, it is composed of the element catalog such as creating change, customer focus and organizational learning. The abilities of the adaptable companies are taking risk, capable to find and learn from their false moves and the ability and knowledge to develop and create change. The customer of these companies drives the procedures and play a significant role in adaptation process of organization [22]. Adaptability plays vital role in enhancing performance of the organizations [23]. Findings of the study conducted by Young, Sapienza, & Baumer, [24] support the positive relationship between firms' flexibility to change and KM. Organizational culture does not affect directly the organizational performance rather it influences by shaping the behaviors of the people of the organizations. Thus, it is expected that organizational cultural dimensions such as involvement and adaptability have significant and positive relation with knowledge creation and sharing. Thus, the following hypotheses are developed.

Hypothesis 1a: Organizational culture has positive impact on knowledge creation.

Hypothesis 1b: Organizational culture has positive impact on knowledge sharing.

2.2 Knowledge Creation and Sharing with Organizational Performance

A large body of research focused on Knowledge Management(KM) practices as a strong determinant of organizational performance (OP) [OP - 25]. It is reported that KM practices influence OP through its contribution in developing intellectual capital that leads to the competitive edge [26]. [6] suggested that KM processes like knowledge creation have important implications for OP. In addition, Nonaka, [12] reported that knowledge creation process has significant positive impact on OP. He conceptualized knowledge creation in a spiral model consisting of socialization, externalization, combination and internalization. Darroch, [27] proposed another model of KM that include knowledge acquisition, knowledge responsiveness and knowledge dissemination in the relationship of OP and reported overall KM model to have positive effects on OP. However, the study indicated that acquisition and dissemination has insignificant effects on OP while responsiveness is found to have positive significant effects on OP. Yang, [28] found significant support for the relationship of KM and strategic performance of a firm.

Researchers in various countries focused mostly on the aspect of organizational effectiveness [3, 4, 8, 29] but all of these studies considered organizational effectiveness rather than on OP. Zheng, et al., [8] investigated the role KM dimensions as mediators between enablers of KM and organizational effectiveness. The findings of this study explored the intervening effect of KM for the enhancement of organizational effectiveness. The result of this study is positive and significant but it only focused on the overall effect of km and does not take organizational performance into account. So the studies exploring these relationships are yet incomprehensible [30]; hence there exists a research gap of analysis of impact of KM on firm performance. [28]. As far the research in the area of KM is concerned, scholars have also focused on pivotal role played by KM in enhancing OP [7, 31, 32]. However, this concept is still vague and needs further research to explore the effects of different dimension of KM like creation and sharing on organizational performance. Based on the above stated theories and empirical findings, it is expected that:

Hypothesis 2a: Knowledge creation has positive impact on organizational performance.

Hypothesis 2b: Knowledge sharing has positive impact on organizational performance.

2.3 Mediating role of Knowledge Creation and Sharing between Organizational Culture and Organizational Performance

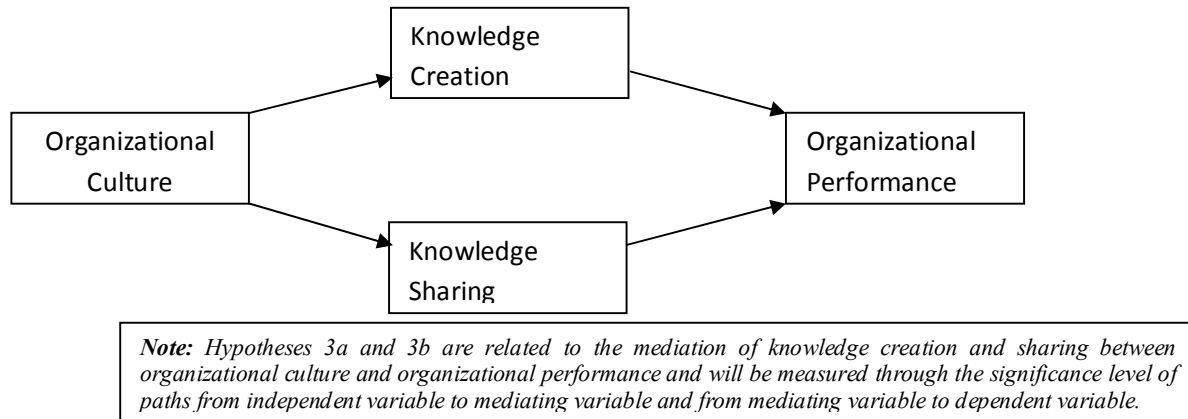
Zheng, et al., [8] suggested that the mediating effects of KM practices should be measured between the relationship of organizational culture and organizational performance. Moreover, it is hypothesized above that the organizational culture has positive effect on knowledge creation and sharing and in result knowledge creation and sharing enhance the performance of organization. Thus it is hypothesized that:

Hypothesis 3a: Knowledge creation has significant mediating role between organizational culture and organizational performance.

Hypothesis 3b: Knowledge sharing has significant mediating role between organizational culture and organizational performance.

In addition the research model as reflected in figure 1, has been developed to be tested in the following study.

Figure 1: Research Model



3. Research Design

3.1 Sample

The unit of investigation in this study was banking sector. Target respondents for this study were employees of banking sector of Pakistan. The population of this study was 31 banks out of which 22 were local private banks, 4 were local nationalized, and 5 were multinational banks. This segregation was made through simple cluster sampling technique. According to the list of State bank of Pakistan the total numbers of branches of banks in Lahore region were 902 out of which 732 branches belong to local private banks, 136 belong to the nationalized banks and 34 branches were of foreign banks. Lists of branch network of each bank were obtained from their respective websites. A proportionate random sampling technique was followed to select 300 branches. We selected 244 branches from local private banks, 45 branches from nationalized banks and 11 branches from multinational banks. After selection of branches, we targeted preferably branch managers but in case of their unavailability, operations managers or any other key position holders were approached for data collection purpose. The selection of branch managers or operation managers was made on the basis of criterion sampling because bank managers were well aware about the organizational culture, knowledge creation and sharing exercised in their respective branches and their branch performance.

3.2 Measurement and Instrumentation

In the present study organizational culture is represented by two traits i.e. involvement and adaptability. To measure these cultural dimensions, twelve items were adapted from organizational cultural survey developed by Dension, [22]. The item scale discussed the business planning process, cooperation between different departments, synchronization between organizational goals and employee job activities, delegation of authority to employees, assessing the capabilities of employees as competitive advantage, response to the change in environment and competition, adoption of new ways for doing work activities, encouragement of employees for direct interaction with customer, how valuable are the recommendations from the customers to the organization, how much are the employees rewarded on the generation of new ideas, risk they bear, how far are the organizations learning from their unsuccessful projects and hence improve their practices. Five and four items to measure **knowledge creation and sharing** respectively have been adopted from knowledge management scale developed by Bontis, Crossan, & Hulland, [33]. The concept of knowledge creation is measured through the degree of generation of new ideas by the employees, adaptability to the changes according to the customer requirements, if innovation process becomes regular part of the teams, whether research and development is utilized in its true spirit. Knowledge sharing item scale is about the components that describe the sharing of knowledge through employee communication; knowledge is also shared among different teams of different departments through management and employees by sharing their ideas with each other, whether true spirit of knowledge sharing is appreciated by offering rewards. **Corporate Performance** has been measured by five items of corporate performance adopted from the study of Yang, [28]. The scale constructs describe the quick response of market demand and changing environment, predict the new prospect

for products and services, strong position of firm in the industry, competitive edge over competitors and substantial market share in term of its major rivals.

3.3 Data Collection and Analysis Procedure

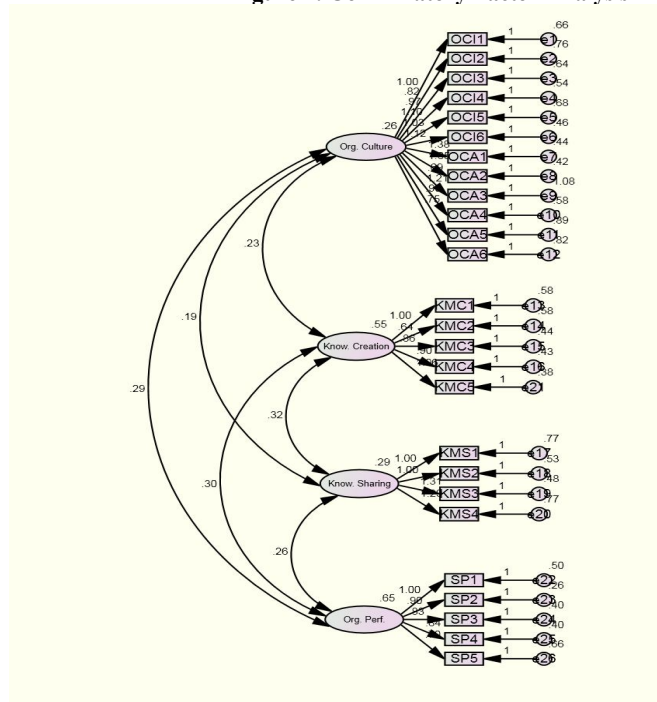
A well- structured questionnaire had been distributed among 300 employees who were working at managerial positions in all three types of banks working in Lahore region. We contacted respondents of the study personally by taking appointments from the branch managers. They were briefed about the objective, methodology and potential implications of the study. Moreover, they were assured about the confidentiality of data. Any query regarding the questionnaire was addressed at the spot by the researcher. Total 300 questionnaires were distributed out of which we received 258 questionnaires completed in all respect. The response rate was 86%. After collection of data, it has been entered into Statistical Program for Social Sciences (SPSS 17) and various test such as reliability analysis, confirmatory factor analysis, correlation analysis and structural equation model have been applied to analyze the data and draw the inference.

4. RESULTS AND DISCUSSION

4.1 Validity and Reliability Testing

Confirmatory Factor Analysis model as shown in figure 2 has been computed to measure the validity of each item statement in its respective construct. The criteria for an item statement to have acceptable factor loading is 0.50 and according to this criteria, each items of all measurement scale has factor loading greater than 0.50 thus no item has been removed from any of the scales. As far as reliability of the scales are concerned, the Cronbach alpha scores of organizational culture, knowledge creation, knowledge sharing and organizational performance were 0.83, 0.82, 0.71, and 0.84 respectively. Thus, all measurement scales are found to be reliable enough as per the suggestions of [34].

Figure 2: Confirmatory Factor Analysis



Fitness Ratios: CMIN = 1039.675; Degree of Freedom (DF): 293; CMIN/DF = 3.55; RMR = 0.08; GFI = 0.77; NFI = 0.68; CFI = 0.74; RMSEA = 0.10

4.2 Mean, Standard Deviation and Correlation among Variables

Table 1 shows the means and standard deviation of research variables and coefficient of correlations among these variables. Spearman correlation (two tailed) has been used for this analysis through SPSS 17. It is reported that means of all variables was around 3.50 like means scores of organizational culture, knowledge creation, knowledge sharing, and organizational performance were 3.60, 3.36, 3.47, and 3.72 respectively. Moreover, the correlation analysis shows positive and significant associations among all variables. It indicates that positive change in one variable will cause significant increase in other variables. If organizational culture, KM practices (creation and sharing) will be good, the corporate performance of organization will be higher.

Table 1: Mean, Standard Deviation and Correlation Matrix

Sr. No.	Variable	M	SD	1	2	3
1	Organizational Culture	3.60	0.59	-		
2	Knowledge Creation	3.36	0.73	0.50***	-	
3	Knowledge Sharing	3.47	0.74	0.56***	0.60***	-
4	Organizational Performance	3.72	0.75	0.55***	0.46***	0.48***

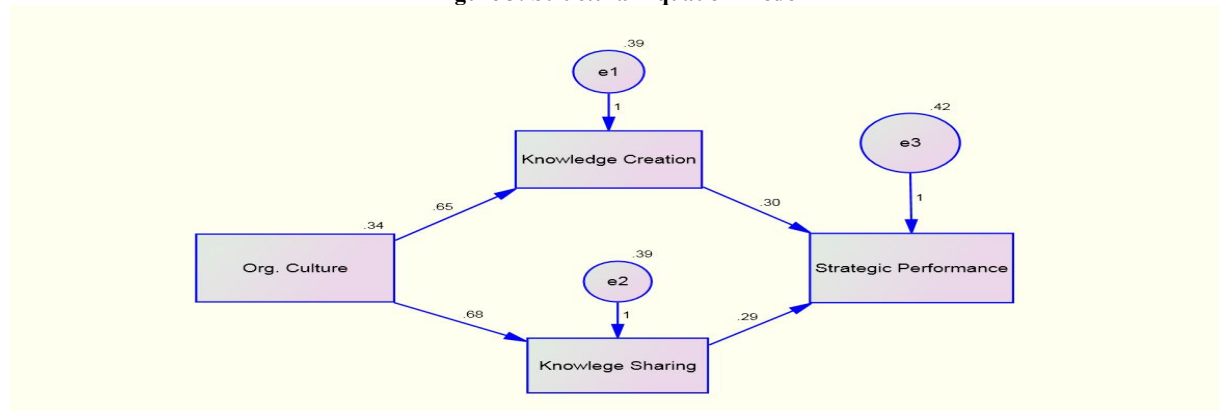
** . Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.3 Hypotheses Testing

Structural Equation Model (SEM) has been applied through AMOS 17 to test the hypotheses. SEM has largely been used in the area of knowledge management to compute models. The fitness ratios of the models were quite good by model as shown below with the SEM model.

Figure 3: Structural Equation Model



Fitness Ratios: CMIN = 48.23; Degree of Freedom (DF): 10; CMIN/DF = 4.28; RMR = 0.05; GFI = 0.87; NFI = 0.86; CFI = 0.82; RMSEA = 0.07

Note: Hypotheses 3a and 3b are related to the mediation of knowledge creation and sharing between organizational culture and organizational performance and is measured through the significance level of paths from independent variable to mediating variable and from mediating variable to dependent variable.

It is substantiated that organizational culture is the most significant and positive predictor of knowledge creation $\{\beta = .256, p\text{-value} < .01\}$ [9]. **Thus hypothesis 1a** is supported. It is shown by the proposed model that 25% of the variance in knowledge management creation is due to the organizational cultural practices. This finding suggests that perceived level of culture contributes to higher level of knowledge creation. It is also reported that organizational culture has positive and significant effects on knowledge sharing $\{\beta = 0.482, p\text{-value} < .01\}$. The findings of the study reveal that organizational culture contributes positively and significantly in the enhancement of knowledge sharing practices among employees which leads to the acceptance of **hypothesis 1b**. The findings of the study aligned with previous findings which show organizational culture to be the main determinant of successful knowledge creation [6-8]. However, the current study extended the same domain by exploring the effects of organizational culture consists of adaptability and involvement on knowledge creation and sharing. The possible justification for these findings is that organizational culture consisting of adaptability and involvement is considered to provide assistance in renewal and change of an organization. There is a need of social setting to share the

knowledge in the organization. Supportive organizational culture becomes back bone of organization in knowledge sharing activities. Knowledge sharing helps the team members to enhance and exchange their existing knowledge. Organizations can become innovative and increase their learning with strong networks of knowledge sharing. Organizations encourage employees to share their knowledge to make organizations more competitive. Management offers incentives to employee to encourage sharing of knowledge. Knowledge sharing helps support the flow of knowledge from firm to individuals and from individuals to individuals who worked on different levels in the organization. It brings huge benefits to organizations as well as to employees.

The knowledge management practices have a significant effect on organizational performance. The study shows that knowledge creation has positive and significant influence on organizational performance $\{\beta = .169, p\text{-value} < = .01\}$, thus **hypothesis 2a** is accepted. It is further revealed that knowledge creation positively and significantly contributes in overall performance of the organization. Knowledge creation mechanism in organizations encourages the employees to generate new ideas. Adaptation of new work practices for customer satisfaction increases the customer ratio. When employees link KM practice to corporate performance, it formulates a favorable situation for espousing and producing new ideas for implementing and demonstrating knowledge management and its advantages [35]. The firms that have potential and teamwork to create innovative processes grasped the potential market opportunities in their true spirit. Successful organizations create the competitive advantage over their competitors. The SEM analysis revealed that knowledge sharing has significant and positive effects on the corporate performance of the organization $\{\beta = .199, p\text{-value} < = .01\}$. It is further explained that sharing of new ideas and knowledge contribute significantly in enhancement of organizational performance thus, **hypothesis 2b** is supported. The findings of the study is also aligned with those of previous studies [e.g. 3, 36].

To measure the mediation of knowledge creation and sharing between the relationship of organizational culture and organizational performance, it is suggested by Karriker & Williams, [37] that in SEM, path from independent variable to mediator and path from mediating variable to dependent variable both must be significant. Thus, it is found that both paths from organizational culture to knowledge creation and sharing are significant at 1% level of significance (0.01 levels) and paths from knowledge creation and sharing to organizational performance were also significant at 1% level (0.01 levels). Thus it is reported the knowledge creation and sharing has significant mediating role between organizational culture and organizational performance which leads us to accept **hypotheses 3a and 3b**. The decisions of all hypotheses are reflected in the **Table 2**.

Table 21: Decisions of Hypotheses

Hypothesis No.	Independent Variable	Mediating Variable	Dependent Variable	Regression Co-efficient	Decision
1a	Organizational Culture	--	Knowledge Creation	0.65**	Accepted
1b	Organizational Culture	--	Knowledge Sharing	0.68**	Accepted
2a	Knowledge Creation	--	organizational Performance	0.30**	Accepted
2b	Knowledge Sharing	--	organizational Performance	0.29**	Accepted
3a	Organizational Culture	Knowledge Creation	Organizational Performance	0.65** 0.30**	Accepted
3b	Organizational Culture	Knowledge Sharing	organizational Performance	0.68** 0.29**	Accepted

** . Significant at the 0.01 level.

* . Significant at the 0.05 level.

5. Conclusion

The present study explored the effects of organizational culture on knowledge creation and sharing and the effects of knowledge creation and sharing on organizational performance in banking sector of Pakistan. It is concluded that organizational culture significantly improve the knowledge creation and sharing practices. Similarly, knowledge creation and sharing contribute significantly in enhancement of organizational performance. Moreover, the mediation of knowledge creation and sharing has been proved between the relationship of organizational culture and organizational performance. The findings of the study validate the recommendations of [8] about the mediating role of knowledge management between organizational factor and its performance. The findings of the study provide significant insights to banking management to get benefits from organizational culture and knowledge

management practices in enhancement of organizational performance. Moreover, the banking management can also utilize the findings of the study in order to formulate strategies to cultivate a knowledge oriented environment. As far as limitations of the study are concerned, first the data has been collected from single source which may have problem of biasness. Secondly, the data has been collected from Lahore region only so the results may have problem in order to generalize the findings over the entire banking sector of Pakistan. The study can further be extended by taking in to account some other organizational factors such as IT infrastructure, management support, and communication as antecedents of knowledge management practices.

5. REFERENCES

1. Alavi, M. and D.E. Leidner, *Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues*. MIS quarterly, 2001: p. 107-136.
2. Milam Jr, J.H., *Knowledge Management for Higher Education*. ERIC Digest. 2001.
3. Gold, A.H., A. Malhotra, and A.H. Segars, *Knowledge management: An organizational capabilities perspective*. Journal of management information systems, 2001. **18**(1): p. 185-214.
4. Khalifa, M. and V. Liu, *Determinants of successful knowledge management programs*. Electronic Journal of Knowledge Management, 2003. **1**(2): p. 103-112.
5. Alavi, M., T.R. Kayworth, and D.E. Leidner, *An empirical examination of the influence of organizational culture on knowledge management practices*. Journal of management information systems, 2006. **22**(3): p. 191-224.
6. Lee, H. and B. Choi, *Knowledge management enablers, processes, and organizational performance: An integrative view and empirical examination*. Journal of management information systems, 2003. **20**(1): p. 179-228.
7. Saeed, T., et al., *Knowledge Management Practices: Role of Organizational Culture*. Proceedings of ASBBS, 2010. **17**: p. 1027-1036.
8. Zheng, W., B. Yang, and G.N. McLean, *Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management*. Journal of Business Research, 2010. **63**(7): p. 763-771.
9. Denison, D.R. and A.K. Mishra, *Toward a theory of organizational culture and effectiveness*. Organization science, 1995: p. 204-223.
10. Yilmaz, C. and E. Ergun, *Organizational culture and firm effectiveness: An examination of relative effects of culture traits and the balanced culture hypothesis in an emerging economy*. Journal of World Business, 2008. **43**(3): p. 290-306.
11. Duffy, J., *The KM technology infrastructure*. Information Management Journal, 2000. **34**(2): p. 62-66.
12. Nonaka, I., *A dynamic theory of organizational knowledge creation*. Organization science, 1994: p. 14-37.
13. Garvin, D.A., *Building a learning organization*. Harvard business review, 1993. **71**(July-August): p. 78-91.
14. Tjong Kim Sang, E.F. and F. De Meulder. *Introduction to the CoNLL-2003 shared task: Language-independent named entity recognition*. 2003: Association for Computational Linguistics.
15. Schein, E.H., *Organizational culture*. American psychologist, 1990. **45**(2): p. 109.
16. Schein, E.H., *Three cultures of management: The key to organizational learning*. na, 1996: p. 37.
17. Jarnagin, C. and J. Slocum, *Creating corporate cultures through mythopoetic leadership*. SMU Cox School of Business Research Paper Series No. 07-004, Organizational Dynamics, Vol. 36, No. 3, 2007, 2007.
18. Day, G.S., *The capabilities of market-driven organizations*. the Journal of Marketing, 1994: p. 37-52.
19. Long, D.W.D. and L. Fahey, *Diagnosing cultural barriers to knowledge management*. Academy of Management Executive, 2000. **14**(4): p. 113-127.
20. Cummings, T., *en CG Worley (2005)*. Organization development and change, 2005.

21. Iftikhar, Z., I. Eriksson, and G. Dickson, *Developing an instrument for knowledge management project evaluation*. Electronic Journal of Knowledge Management, 2003. **1**(1): p. 55-62.
22. Denison, D., H. Cho, and J. Young, *Diagnosing organizational cultures: A model and method*. 2000, International Institute for Management Development Lausanne.
23. Fey, C.F. and D.R. Denison, *Organizational culture and effectiveness: can American theory be applied in Russia?* Organization science, 2003: p. 686-706.
24. Young, G., H. Sapienza, and D. Baumer, *The influence of flexibility in buyer-seller relationships on the productivity of knowledge*. Journal of Business Research, 2003. **56**(6): p. 443-451.
25. McEvily, S.K. and B. Chakravarthy, *The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge*. Strategic Management Journal, 2002. **23**(4): p. 285-305.
26. Ndlela, L. and A. Du Toit, *Establishing a knowledge management programme for competitive advantage in an enterprise*. International Journal of Information Management, 2001. **21**(2): p. 151-165.
27. Darroch, J., *Knowledge management, innovation and firm performance*. Journal of Knowledge Management, 2005. **9**(3): p. 101-115.
28. Yang, J., *Antecedents and consequences of knowledge management strategy: the case of Chinese high technology firms*. Production Planning and Control, 2008. **19**(1): p. 67-77.
29. Smith, T.A., *Knowledge management and its capabilities linked to the business strategy for organizational effectiveness*. 2007, Nova Southeastern University.
30. Choi, B., S.K. Poon, and J.G. Davis, *Effects of knowledge management strategy on organizational performance: a complementarity theory-based approach*. Omega, 2008. **36**(2): p. 235-251.
31. Ali, I., et al., *Effects of knowledge management practices on organizational innovativeness and performance: Evidence from SME Sector of Pakistan*. Actual Problems of Economics, 2010. **12**(2): p. 144-151.
32. Lodhi, S.A., *Culture Based Knowledge Sharing Model*. 2005.
33. Bontis, N., M.M. Crossan, and J. Hulland, *Managing an organizational learning system by aligning stocks and flows*. Journal of management studies, 2002. **39**(4): p. 437-469.
34. Nunnally, M.H., J.M. D'Angelo, and S.W. Craig, *Filamin concentration in cleavage furrow and midbody region: frequency of occurrence compared with that of alpha-actinin and myosin*. The Journal of cell biology, 1980. **87**(1): p. 219-226.
35. Carrillo, P.M., et al., *IMPACT: a framework for linking knowledge management to business performance*. Electronic Journal of Knowledge Management, 2003. **1**(1): p. 1-12.
36. Zaim, H., E. Tatoglu, and S. Zaim, *Performance of knowledge management practices: a causal analysis*. Journal of Knowledge Management, 2007. **11**(6): p. 54-67.
37. Nonaka, I., R. Toyama, and P. Byosièrè, *A theory of organizational knowledge creation: Understanding the dynamic process of creating knowledge*. Knowledge Creation Diffusion Utilization, 1998(Pfeifer): p. 491-517.