

# Mediating Role of Knowledge Management Practices in Relation to Organisational Structure, Culture, Strategy and Organizational Effectiveness: A Study of Public Sector of Pakistan

Iffat Batool

Quaid-i-Azam School of Management Sciences (QASMS)  
Quaid-i-Azam University, Islamabad

Muhammad Sajid Saeed

Glasgow Business School, Glasgow Caledonian University, UK

## Abstract

The current study focused on analysing the association between organisational strategy, culture, structure, and organisational effectiveness through mediating role of knowledge management within public sector organisations of Pakistan. Quantitative methodology was applied for this study through close ended questionnaire. From public sector organisations, a sample of 180 managerial employees was chosen by applying convenience sampling technique for data collection. Data was analysed by using statistical software SPSS through correlation and regression analysis. Further, mediating role of knowledge management was tested through Sobel test. This study concludes that culture and strategy have positive association with organisational effectiveness within public sector organisations of Pakistan whereas organisational structure has negative relationship with organisational effectiveness in the same context. It is also concluded that knowledge management mediates relationship between strategy and organisational effectiveness whereas no mediating role of knowledge management was found between culture, structure and organisational effectiveness. It is recommended that effective knowledge management practices can influence organisational effectiveness when aligned with strategic factors of the organisation, organisations need to focus on creating effective knowledge based environment and organisations need to create a culture based on involvement, consistency, adaptability and mission for retrieving higher effectiveness.

**Keywords:** Strategy, structure, culture, knowledge management, organisational effectiveness

## 1. Introduction

Knowledge management is considered as an integrative and systematic process that coordinates organizational environment to accomplish its goals (Atwood, 2009). Both business practitioners and researchers have argued that; within current knowledge driven economy, implementation of knowledge management system enables organisations to reap competitive advantage (Liu and Lai, 2011; Lee et al, 2015), become innovative (He and Abdous, 2013), and deliver sustainable performance (Goel et al., 2010). This emphasises the need of implementing a systematic knowledge management approach within organisations. Researchers have argued that organisations need to fir knowledge management practices within organisational context to generate competitive advantage (Zheng et al., 2010).

The internal context of an organisation is very critical to define what kind of structure and strategy it deploys to pursue goals. Considerable research has been conducted to identify contextual factors that have long lasting impact on organisational performance. Internal context of an organisation comprises of controllable characteristics such as culture, management and structure that compose the environment to carry business activities (Morschett et al, 2015). Ample evidence is available in prior literature about how fit between organisational strategy and context can influence performance of the organisation (Sua et al., 2012). However, there has been missing links in literature about what intervening mechanisms may influence organisational effectiveness while considering organisational strategy and context. The emergence of knowledge and intellectual capital has minimised organisation's reliance on tangible resources for getting competitive advantage; thus resulted in paradigm shift from resource based economy to knowledge based economy. Knowledge management practices are context specific, as organisational context decides components and participants of knowledge management practices (Saifi, 2015). In this respect, knowledge management could be considered as an intervening variable that decides paths from organisational structure and strategy to organisational effectiveness. Prior literature lacks adequate evidence of knowledge management as mediator factor to influence organisational effectiveness. Hence, investigation of mediating role of knowledge management would provide better understanding of how it influences organisational ability to gain its goals through relevant structure and strategy. Therefore, this study is based on investigating missing links in literature regarding role of knowledge management as mediator that may influence association between organisational structure, strategy and organizational effectiveness. This study has aimed at analysing the association between organisational strategy,

culture, structure, and organisational effectiveness through mediating role of knowledge management.

## 2. Literature Review

Within literature review, two theoretical aspects are discussed that are critical to gain competitive advantage. One is resource based view, while the other is knowledge based view. According to Barney (1991) cited in Becker (2011), the resource based view assumes that an organisation can gain competitive edge only, if it posses valuable and imitable tangible and intangible resources. These resources may include organisational culture, structure, strategy, assets, processes and organisational capabilities. Within prior literature, adequate evidence is available regarding association between organisational resources and organisational effectiveness; however, how resources decide their influential path towards organisational effectiveness is somehow questionable. Contrary to this, the knowledge based view suggests that an organisation's capability to create, hold, store, and disseminate knowledge is the critical source for creating competitive advantage (Becker, 2011). This view holds that in today's uncertain environment, the only source of creating and sustaining competitive advantage is knowledge. Resource based view stated that the competitiveness of the firm depends upon its tangible and intangible resources that are vital, difficult to copy, and sustainable (Barney, 1991). Firms control their all resources assets, capabilities; organizational skills organization process attributes information, knowledge (Daft, 1995). Organizations encompass unique culture, organizational strategy and structure that are considered crucial for the organization effectiveness. These factors influence on organizational performance and their effectiveness. Although prior studies have analysed association between organisational culture, structure, strategy and organizations, the mediating role of knowledge management with these contextual factors has remained unstudied.

Atwood (2009) defined knowledge management as a process that aims at creating, acquiring, sorting, storing, sharing, diffusing and deploying knowledge by individuals and groups within organisations. On the other hand, Davenport and Prusak (1998) discussed knowledge management process into three activities that include knowledge generation, sharing and storing knowledge. The current researches refer to these activities for measuring knowledge management practices in the case organisation. Previous studies have confirmed a significant association between knowledge management practices and organisational effectiveness (e.g. Zheng et al., 2010; Turner, and Minonne, 2010). In the same vein, others confirm that effective knowledge management system leads to innovations, improved performance, reduced product defects, higher product development, and higher efficiency (Jafari and Suppiah, 2015; Cohen and Olsen, 2015).

Organisational culture is defined as the sum of shared assumptions, symbols, norms and values followed within an organisation (Schein, 2010). Prior studies confirm that organisational culture is a vital source of getting competitive advantage and organisational effectiveness (Chan et al., 2004). These studies agreed that organisational culture does not exert influence on organisational effectiveness, rather by shaping behaviour of members of the organisations. As far as association between knowledge management and organisational culture is concerned, prior studies have suggested a positive association between the two (Saifi, 2015). However, others argued that the association from knowledge management to organisational effectiveness is conditioned by organisational culture because behaviours and norms of members decide the extent and ways by which information is created, shared and deployed for achieving organisational goals (Zheng et al., 2010).

Organisational structure takes two dimensions i.e. centralisation and decentralisation (Morschett et al., 2015). The centralised structure is the one in which decisions are referred to top level management whereas decentralised structure is the one in which decision making power is distributed between top and lower level management (Morschett et al, 2015). Literature evidence suggested that decentralised organisational structure facilitates knowledge management processes; thus, positively influence organisational effectiveness (Chen and Huang, 2007). Unlike this, others reported negative association between centralised organisational structure and knowledge management (Zheng et al., 2010).

Organisational strategy describes the plans by which an organisation operates in competitive environment to realise its goals (Morschett et al., 2015). Literature evidence suggested that organisational strategy can be discussed in terms of plans and strategies for creating, storing, deploying and capitalising knowledge across the organisations to achieve short and long term goals (Zheng et al., 2010).

In the market, firms play their role to boost up their knowledge, and create the knowledge to achieve higher rank. In order to accomplish this task, firms need to develop an absorptive capacity to examine the usefulness, importance of the new information on the basis of their previous knowledge, as well as adapt this new information, analyse it create new knowledge and capabilities (Zheng et al., 2010). Basically all resources including knowledge that created through a generic process exchange and combination, creation of new knowledge is require a social capital that is sum of actual and potential resources embedded within, available through and derived from network of relationship possessed by a social unit.

Organizational knowledge and organization strategic characteristic are crucial to develop new products and services to increase organisational efficiency and higher the effectiveness (Nonaka et al., 2000). Researchers

suggest that knowledge based view is a challenging as it requires a higher coordination among employees. The design of organization shows a boundary between division of task between individuals and department and their specification (Grant, 1996). These dimension of organization designs is considered crucial dimension organization structure strategy constitute and organization culture their influence on organizational effectiveness might be not a directed it may be routed through knowledge management. Current literature indicates that the relationship between culture of organization and knowledge management is a positive (Zheng et al., 2010).

It is studied that the transfer of knowledge influences positively on flexible environment of the organization and researchers argument that with the help of consistency is easy for organization to infer the information across the unit (O'Reilly's et al., 1989). If they identify the significance of the information it will helpful for the innovation (O'Reilly's et al., 1989). Knowledge management directed toward the clarity of the vision, therefore it stated knowledge management is positively associated with the culture of the organization (Zheng et al., 2010). The role of knowledge management is to process the internal and external information, plan how to observe, organize and incorporate them and finally utilize obtained information for different organisational activities.

Although the relationship between organizational structure and knowledge management is questionable (Tasi et al., 2002), it observed that decentralized structure is supportive for success of knowledge management system (Deal et al., 1982; Gold et al., 2001). Interaction among members of organization is lower while centralization is high (Gold et al., 2001), individual lose the opportunity, progress and chances to innovate in this culture (Kennedy, 1983), and inhabit to innovative solution of the problem (Deal et al., 1982). In contrast, decentralization is restrictive to innovation and supports to avail the opportunity and provide higher level of creativity (Bennett at al., 1999).

Following hypotheses are derived for the study:

- H1: Knowledge management fully mediates the association between organizational culture, structure, strategy and organizational effectiveness
- H2: Knowledge management has positive association with organizational effectiveness.
- H3: Organizational culture relates positively with organizational effectiveness.
- H4: Organizational structure relates negatively to organizational effectiveness.
- H5: Organizational strategy relates positively to organizational effectiveness
- H6: Organisational structure, culture and strategy positively relate with knowledge management

### **3. Research Methodology**

#### *3.1 Research Approach*

The researcher adopted deductive approach to test the hypothesised association between organisational strategies, structure and organisational effectiveness within context of public sector organisations. The rationale of choosing this approach is to test prior propositions regarding impact of knowledge management on organisational effectiveness; and also about extent of relationship between strategy, culture, structure and organisational effectiveness.

#### *3.2 Research Methods*

This study involved quantitative methods to get factual evidence of mediating role of knowledge management in linking organisational structure, strategy and effectiveness within public sector organisations. With quantitative methods, the researcher gathered data in numerical form from research participants for statistical testing. This study aimed at testing hypothesis within context of public sector organisations, which provides underlying principle of applying quantitative methods.

#### *3.3 Data Collection*

Primary data was collected from managerial staff of public sector organisations regarding organisational strategy, structure, organisational effectiveness and knowledge management system implemented within public sector organisations. Survey strategy was applied to reach target population for collecting data. The survey is suitable strategy to reach a huge population with a single questionnaire.

Close ended questionnaire using Likert scale was used for conducting survey. Basically, questionnaire was adapted from prior studies on organisational structure, strategy, effectiveness and knowledge management. The questionnaire included two main parts where the first part was aimed at getting personal information of participants whereas the second part focused on getting information regarding research variables.

#### *3.4 Sample and Population*

The target population of this study was composed of workforce of chosen public sector organisations in Pakistan. From this population, managerial staff was targeted for data collection. Managerial employees have better understanding of organisation's strategy, culture, structure, knowledge management practices and organisational

performance; hence, they are suitable for collecting data. From this population, a sample of 200 managerial employees was chosen by applying convenience sampling technique that focuses on targeting only those research subjects who are easily accessible.

### 3.5 Data Analysis

Data was analysed by using statistical software SPSS. Correlation analysis and regression was applied to evaluate extent of association between organisational structure, strategy, knowledge management and organisational effectiveness. For testing mediating role of knowledge management, Sobel test was applied whose formula is given below:

$$Z = \frac{a * b}{\sqrt{b^2 * Sa^2 + a^2 * Sb^2}}$$

a= unstandardised regression coefficient between IV and mediator

Sa= standard error of a

b= unstandardised coefficient for the association between the mediator and the DV (when the IV is also a predictor of the DV).

Sb= standard error of b

## 4. Results and Discussions

Data was collected from public sector organisations within manufacturing and service industry. From 200 research participants, a total of 152 completely filled questionnaires were received resulting in 76% response rate. This response rate was adequate to analyse results of the research and draw conclusion whether knowledge management mediates relationship between organisational culture, structure, strategy and organisational effectiveness.

### 4.1 Demographics

The demographical profile revealed that 51.3% of respondents were males whereas 48.7% were females. As far as age profile is concerned, 18.4% respondents were up to 30 years, 37.5% were between 31-40 years, 21.7% were between 41-50 years and 22.4% were above 50 years of age. Further, results revealed that 16.4% respondents had employment experience of less than 1 year, 29.6% had 1-5 years, 26.3% had 6-10 years, 19.7% had 11-15 years of experience and 7.9% had more than 15 years of experience in their respective organisations. Table 1 presents demographical profile of respondents.

Table 1: Demographical Profile

	Frequency	Percent	Valid Percent	Cumulative Percent
<b>Gender</b>				
Female	74	48.7	48.7	48.7
Male	78	51.3	51.3	100.0
Total	152	100.0	100.0	
<b>Age</b>				
Up to 30 years	28	18.4	18.4	18.4
31-40	57	37.5	37.5	55.9
41-50	33	21.7	21.7	77.6
Above 50 years	34	22.4	22.4	100.0
Total	152	100.0	100.0	
<b>Employment Duration</b>				
less than 1 year	25	16.4	16.4	16.4
1-5 years	45	29.6	29.6	46.1
6-10 years	40	26.3	26.3	72.4
11-15 years	30	19.7	19.7	92.1
above 15 years	12	7.9	7.9	100.0
Total	152	100.0	100.0	

The Cronbach alpha test was applied for assessing reliability of the instrument. With 0.813 Cronbach alpha's score, the instrument was found to be statically significant and reliable. Further, descriptive statistics of variable are tested through student's T test. The results are presented in Table 2.

Table 2: Student's T test

Variables	N	Mean	Std. Deviation	Test value = 0		
				t	df	Sig. (2-tailed)
Organisational Culture	152	1.8573	.43684	52.418	151	.000
Organisational Strategy	152	1.6908	.56306	37.022	151	.000
Organisational Effectiveness	152	1.8632	.70172	32.735	151	.000
Knowledge Management	152	1.7456	.54149	39.745	151	.000
Organisational Structure	152	2.4434	.74901	40.219	151	.000

4.2 Regression analysis between organisational strategy, culture, structure and organisational effectiveness:

In order to assess impact of organisational culture, structure, and strategy on organisational effectiveness, regression analysis was performed. The higher value of R Square (0.597) suggests that the model fits the data. Further, the results of ANOVA model reveal that model is significant and there exists positive relationship between organisational culture, structure, strategy and organisational effectiveness (p value=0.000). Furthermore, the Durbin-Watson value is 1.063 that is below critical value of 2 implying that there exists positive correlation between organizational culture, structure, strategy and organizational effectiveness.

Table 3: Model Summary<sup>b</sup>

Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.773 <sup>a</sup>	.597	.589	.45001	1.063

a. Predictors: (Constant), CULTURE, STRUCTURE, STRATEGY

b. Dependent Variable: OEFFECTIIVENESS

ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.382	3	14.794	73.053	.000 <sup>a</sup>
	Residual	29.972	148	.203		
	Total	74.354	151			

a. Predictors: (Constant), CULTURE, STRUCTURE, STRATEGY

b. Dependent Variable: OEFFECTIIVENESS

4.3 Mediating role of Knowledge Management

To assess the mediating role of knowledge management in association between organisational culture, strategy, structure and organisational effectiveness, Sobel Test was applied after running linear regression. The results revealed that culture, strategy and structure are statistically significant towards organisational effectiveness. However, knowledge management does not mediate relationship between culture to effectiveness and structure to effectiveness (as Z score is below critical value of 1.96). As shown in Table 4, knowledge management partially mediates the relationship between organisational strategy and organisational effectiveness as direct (S to OE) and indirect (S to KM to OE) are significant (Z value=4.8675 that is >1.96).

Table 2: Mediating role of Knowledge Management

Hypotheses		Coefficients			Sobel Test
		B	Std.	Sig.	Z
H1a	OC to OE				1.6580
	Constant	.625	.228	.007	
	OC	.667	.119	.000	
	KM on (OC to OE))				
	Constant	.279	.134	.039	
	OC	.320	.090	.001	
	KM	1.248	.073	.000	
165					
H1b	OS to OE				1.7064
	Constant	1.666	.195	.000	
	OS	.081	.076	.292	
	KM on (OS to OE)				
	Constant	.256	.147	.083	
	OS	.092	.041	.028	
	KM	1.085	.057	.000	
H1c	S to OE				4.8675**
	Constant	.978	.142	.009	
	S	.479	.070	.000	
	KM on (S to OE)				
	Constant	.977	.142	.000	
	KM	.423	.068	.047	
	S	.109	.050	.000	

\*\* Significant at the 0.01 level

OS=Organizational Structure, KM=Knowledge Management, OE=Organizational Effectiveness, S=Strategy, OC=organizational Culture

## 5. Conclusion and Implications

This study sheds light to uncover multiple aspects that had not been covered in literature from Pakistani context. It is concluded that culture and strategy have positive association with organisational effectiveness within public sector organisations of Pakistan whereas organisational structure has negative relationship with organisational effectiveness in the same context. The study also concludes that knowledge management mediates relationship between strategy and organisational effectiveness whereas no mediating role of knowledge management was found between culture, structure and organisational effectiveness. Considering these findings, it is suggested that knowledge management intervenes association between organisational contextual factors i.e. strategy and organisational effectiveness. This endorses the knowledge based perspective of literature that emphasises that knowledge management can leverage influence of strategy on organisational effectiveness. However, lack of supportive culture and centralised structure within Pakistani organisations have restricted mediating role of knowledge management on organisational effectiveness.

Within public sector of Pakistan, many organisations believe in launching knowledge management through software programs without having in-depth consideration of contextual factors of the organisation. This may result in ineffective knowledge management practices that are less likely to have significant impact on organisational effectiveness. By analysing relevant contextual factor, this study has put significant insights for public sector organisations of Pakistan for creating a knowledge based environment. These findings have significant implications for policy makers and practitioners in the public sector of Pakistan. First, effective knowledge management practices can influence organisational effectiveness when aligned with strategic factors of the organisation. Second, organisations need to focus on creating effective knowledge based environment through appropriate tools and mechanisms that assist in retrieving effective benefits from organisational resources. Third, among contextual factors, culture has highest association with knowledge management practices stressing that it is pivotal to creating knowledge based environment in the organisations. Hence, organisations need to create a culture based on involvement, consistency, adaptability and mission for retrieving higher effectiveness. The results of this study are subjected to limited generalisability as a small sample was targeted for data collection. Future researchers can expand scope of this study by incorporating a large sample from organisations in different sectors to analyse how strategic and contextual factors of organisations influence organisational effectiveness with mediating role of knowledge management practices.

## References

- Atwood, C., (2009). *Knowledge Management Basics*. American Society for Training and Development
- Bergeron F, Raymond L, Rivard S. (2004). Idea patterns of strategic alignment and business performance. *Information and Management*.41:1003–20.
- Bennett R, Gabriel H. (1999). Organizational factors and knowledge management within large marketing departments: an empirical study. *Journal of Knowledge Management*. 3(3):212–25.
- Barney, J., (1991). Firm resources and sustained competitive advantage. *Journal of Management*.17 (1):99-120.
- Becker, G., (2011). *The Oxford Handbook of Human Capital*. OUP Oxford
- Cohen, F, and Olsen., K. (2015). Knowledge management capabilities and firm performance: A test of universalistic, contingency and complementarity perspectives. *Expert Systems with Applications*. 42:1178–1188
- Chen., C. and Huang, J. (2007). How organizational climate and structure affect knowledge management: The social interaction perspective. *International Journal of Information Management*. 27: 104–118
- Chan, L., Shaffer, M., and Snape, E., (2004). In search of sustained competitive advantage: the impact of organizational culture, competitive strategy and human resource management practices on firm performance. *The International Journal of Human Resource Management*. 15(1): 17–35
- Deal, A., Kennedy, A. (1982). *Corporate culture*. Reading, MA: Addison-Wesley.
- De Long W., Fahey L., (2000). Diagnosing cultural barriers to knowledge management. *Academy Management Excellence*.14(4):113–27.
- Daft, L., (1995). *Organizational theory and design*. St. Paul: West Publishing.
- Davenport TH, Prusak L. (1998). *Working knowledge: how organizations manage what they know*. Boston: Harvard Business School Press.
- Gold H., Malhotra A, Segars H., (2001). Knowledge management: an organizational capabilities perspective. *Journal of Management and Information System*. 18(1):185–214.
- Grant, M., (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*. 17:109–11.
- Goel, A., Rana, G., and Rastogi, R. (2010). Knowledge Management as a Process to Develop Sustainable Competitive Advantage. *South Asian Journal of Management*. 17(3). 105-116
- He, W. and Abdous, M. (2013), An online knowledge-centred framework for faculty support and service innovation, *Vine*, 43(1): 96-110.
- Jafari, S., and Suppiah, M., (2015). The Effect of Knowledge Management Practices on Employees' Innovative Performance. *International Journal of Management Science & Technology Information*. 16, p81-92.
- Kennedy, A., (1983). The adoption and diffusion of new industrial products: a literature review. *European Journal of Marketing*. 17(3):31–88.
- Lee., A., Chen., H., and Chen., S. (2015). Suitable organization forms for knowledge management to attain sustainable competitive advantage in the renewable energy industry. *Energy*.89: 1057–1064
- Liu, D. and Lai, C. (2011), Mining group-based knowledge flows for sharing task knowledge, *Decision Support Systems*, 50(2):370-386.
- Morschett, D., Schramm-Klein, H., and Zentes, J. (2015). *Strategic International Management: Text and Cases*. Springer
- Nonaka I, Toyama R, Konno N. Seci, B, (2000) Leadership: a unified model of dynamic knowledge creation. *Long Rang Plan*.33:5-34
- O'Reilly C. (1989). Corporations, culture, and commitment: motivation and social control in organizations. *California Management Review*.18:9-25.
- Schein, E., (2010). *Organizational Culture and Leadership*. 4th Ed. John Wiley & Sons
- Sua, Z., Yanga, D., and Yang, J., (2012). The match between efficiency/flexibility strategy and organisational culture. *International Journal of Production Research*. 50(19) 1, 5317–5329
- Saifi., S. (2015). Positioning organisational culture in knowledge management research. *Journal of knowledge management*. 19(2). 164-189
- Saunders, M., Lewis, P., and Thornhill, A. (2015). *Research Methods for Business Students*. Pearson Education Limited
- Turner, G and Minonne, C. (2010). Measuring the Effects of Knowledge Management Practices. *Electronic Journal of Knowledge Management*. 8(1): 161 - 170
- Zheng, W., Yang, B., Gary N. and McLean, G. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research*. 63:763–771