

The Modifying Role of Knowledge Management in Relationship among Environment and Organizational Structure

Mohammad Reza Azadehdel^a, Farzin Farahbod^b, Mehrdad Rahimi^c

^{a,b} Assistant Professors, Public Administration Department, Islamic Azad University, Rasht Branch, Iran

^c Master on human resource management, Islamic Azad University, Rasht Branch, Iran

ABSTRACT

This article in the results of research projects which is called "effect of environment on organizational structure by the emphasis on knowledge management in 2011". The objectives of the research were to evaluate the extent of environmental uncertainty, dimensions of organization structure, and the degree of Knowledge management usage within public Organizations. Furthermore, the impact of environmental uncertainty and knowledge management on structural dimensions in statistical society considered. In terms of methodology, this paper conducted based on a descriptive, and applied, and the data's accumulation is field. Populations of target group are public organizations of Guilan province (the major province in Iran), and 69 organizations were recognized as a sample. Questionnaire tool was used for gathering the data. The data were analyzed by soft wares LISREL and SPSS. Findings of this paper support the ability of Knowledge management as a modifier in relation between environmental uncertainty and structural characteristics. In addition, the environmental uncertainty increases the organizations' need to develop of knowledge management capabilities. This case reveals the necessity of changes about the organizational structure more.

KEYWORDS :Environmental uncertainty, aspects of organizational structure. Knowledge management. Knowledge Management necessity.

INTRODUCTION

The organizational structures were transformed in many modern Organizations. The need and dependence of organizations on structure, and dependence on decreasing and their process, is toward more trust on employees, decentralization, upgrading of humanity resource's authorities, and team working. The change of top level manager's approach is because of changing in modern, complicated and competitive environment, increasing of education level and effective communication systems, and consequently increasing of employees' knowledge (through knowledge management). Many organizations have implemented knowledge management to increase organizational agility (seng, 2010) and lead to innovativeness (Maqsood & Finegan, 2009; Alwis, & Hartmann, 2008).

The concept of knowledge will be more important in modern, complicated and global environment step by step (Ghelichli, 2010). The new field of thinking capital attracts managers' attention to itself. According to strategic approach, thinking capital can be used in creating and applying of knowledge to increase an organization's value, and the organization's success depends on the ability to manage this exceptional source. Now and future success in competition between organizations are based on strategic allocation of physical and financial sources to some extent and based on strategic knowledge management more. Also the organization's environment has important affect on structure's designing. Stability and predictability capability of uncertainty of environment has a direct effect on organization's ability to do its' responsibilities. If the Environment were unstable and changed rapidly, the predictability would be fewer. The organization should have the ability of compatibility with environment; it should provide a flexible structure to create more coordination among its units. This, will not be met unless by wing of knowledge employees who should have high repaid adaptability (Daft, 1998).

Organizational structure and its output

The dimensions of organizational structure are dependent variables in this paper. The four main dimensions are including: formalization, complexity, centralization, and organizational integration which are focused and tried to explain, interpret and annotate the affects of inflexibility and environmental uncertainty on them.

Some of Iranian writers (Robbins, 2008), acknowledge the organizational structure specifies how the responsibilities should be delegated. Who should report to whom? And which are the formal

*Corresponding Author: Mohammad Reza Azadehdel, Assistant Professors, Public Administration Department, Islamic Azad University, Rasht Branch, Iran. E-mail: reza_azadehdel@yahoo.com Tel/Fax/Mob:0098911-235-4885

coordination mechanisms and also organizational interactive patterns should be considered? The structure's designing is one of the management's risky responsibilities, and depends on how to be performed, can lead to success or failure of an organization (Barati *et al.*, 2008). The complexity here includes the importance of unit's number, the technology of giving services, and publicities. The formalization includes the rate of reliance and strength of rules and provisions, the employees' trust and confidence about rules and the extent of Manager's toleration for aggressive employees. Also, centralization implies the degree of using budgets for long-term investments, the rate of attention to reliable policies and the rate of reliance on changes in process of giving services by an organization's management. Furthermore, the integration includes the level of using especially committees and coordination between people and related jobs together and the rate of attention to human resources the coordination among them.

Although, above dimensions are not the only effective Structural factors on organization's designing. The main four factors are controllable and coordinated, so they are vital and necessary for organization's function (Lee & Grover, 2000). The previous researches (Gordon and Narayanan, 1984), about mutual affect between environment and organization show the important affect of environment on organization's Structure. According to Monavariyan *et al.* (2007), The organizational structure should be more broad than available definitions, more emotional than comprehensive rationality, more interactive, more flexible, trustful axis and more informal. Traditional understandings can not supply the challenges and new needs at economics. However, we need the high levels dimensions to develop and draw the new Structural forms organizations which can cover new needs of environment's Knowledge axis. Informal relations have an important role in definition and understandings of structural activities.

Environmental uncertainty important & Knowledge Management necessity

Generally, every organization work in an environment. The organization's environment includes all changes which can effect on its condition or it would be influenced (Liao *et al.* 2011). The environment in this paper includes those external factors such as: multiplicities and diversity of competitors, the extent of ingredients' using, the degree of other organizations partnership in giving services. In this sense, the environment is important as all of them is not the same. They are different from each other based on uncertainty. The environmental uncertainty is an important, understanding variable (Germain, 2001), which implies the diversity of outer forces that an organization should have mutual relations with those forces (Kearns & Lewler, 2004). Daft (1998) proclaimed the organizations should put up with the environmental uncertainty to be effective and try to control all those factors.

Regarding to Organization's process of Changing, they remain on their traditional process. So they lead to study the relationship between knowledge management, and organizational Structure (Bucley & Cater, 2002). Knowledge management includes performing the issues wisely, the rate of division, Sharing, Collecting and transferring of knowledge to the employees and also the effect of knowledge sharing by them, with paying compensation to them, and finally the extent of using knowledge process in solving new problems of organization. Knowledge management is a dynamic category and need suitable collections of factors such as: human resources, processes and organizational infra structure (Golchinpoor, 2008). Some of world universities' researches (Campton, 2001; Reaganz & Evily, 2003) highlighted the importance of knowledge management in Contemporary organizations. Ernest Perez (2009), defined knowledge management for knowledge's gathering, rational Capabilities, the people's experiences of an organization, and creating the capability of retrieval as an organizational capital. Knowledge management has influence on personal ' work style (Birkinshaws 2002). Therefore, the impact of knowledge management on organizational Structure should be investigated. Counter and Mckintosh (Adli, 2006), Focused on importance of knowledge management. They recognized knowledge management as Organizational Systematic process for getting, Organizing and transferring of explicit and figurative knowledge between employees, with the purpose at using it by others for an effectiveness and productivity. Knowledge management gathers a widespread slope of majors and technologies and includes the composition of various fields' elements and iteration between two or several various fields with the purpose at responding to questions and practical issues in an organization and the world. This field tries to have kind of relation with other linked fields (Faghihi, AlizadeSani, 2007).

Some of researchers (Piri, Asefzade, 2006) focused on effective implementation of knowledge management in Organizations for three background dimensions such as: creating a strong culture for acceptance and reinforcement of knowledge management, definition of effective strategies to use all knowledge resources and Information Technology (I.T). It should be considered that managers should select one of the knowledge management strategies to implement in organizations, and it should be appropriate one for organizational structure (Aarabi, Mousavi, 2010).

The most of public organizations unlike the private organizations won't sell their goods, their goods are exclusive. There is less freedom for managers in public organizations in practice. The values at employees are different from each other in these Organizations, and finally, Public organizations' effectiveness is less than in private sector (yao et al., 2007). However the organizations at public sector like private quarter need better access to information or internal and external knowledge for effective decision making, more ability for innovations and adaptation to the uncertain environment (Rubenstein, Buchwalter, Liebowitz, 2001). Therefore, these organizations by using the knowledge management, try to achieve competitive advantage, innovation and their outcomes (Argote, McEvily, & Reagans, 2003; Seyyed-Naqavi, & Fayazi-Azad, 2009).

Public organizations in Iran follow rational making strategy, and to achieve this important goal, they focus on organization's knowledge assets, gathering of solutions and creating structures in organizations. Several researchers have emphasized the pivotal role of the knowledge management, particularly in creating an internal working environment that supports innovation (Amabile, Conti, Coon, Lazenby, & Herron, 1996). The literature indicates the need to formulate a method within a framework, to confront empirical data in the interest of pursuing further insights into the complex relationship between environmental uncertainty and organizational structure that modified by knowledge management. About the relationship between independent and dependent variables in this study there are several researches such as (McEvily, & Reagans, 2003; Subramaniam, Youndt, 2005; Xu, J.; Houssin, R.; Caillaud, E.; Gardoni, M. 2010; Argote,). According to above discuses can be presented the hypothesis that exist bilateral relations between variables mentioned above. Therefore, in rationalizing to minimize physical structures; while, the extent of risk and environmental uncertainty are high, they should pay enough attention to expand their knowledge structures. It is tried to give a solution to decrease uncertainty by interfering knowledge management process and making knowledgeable the organization's Structure this paper use a framework to shape the relationship among variables of study (Figure 1).

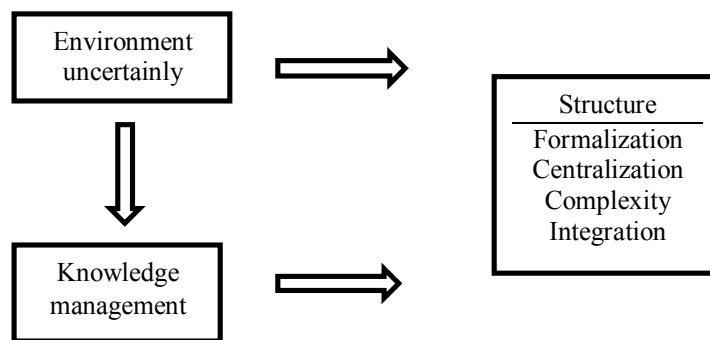


Figure (1) theoretical framework

The main variables in this research were environment uncertainty, organizational structure and knowledge management (following the liao et al., 2011). According to the paper environment uncertainty plays the main role in Success or failure of organization. Knowledge management capabilities also create and divide organization's knowledge resources and use it in all over the practical boundaries. Meanwhile this research focuses on four aspects of the mast important Structural aspects including: Centralization, Formalization, Complexity and integration. Data analysis shows that environmental uncertainty has a direct effect on the Knowledge management capability, and Complexity as one at organizational structure's dimension and there is no significant relationship with formalization, centralization and intentions.

In terms of the problem statement, the objective of this paper is as fallows:

Evaluation at knowledge management's affect on the relation between organizational structure and environment in Guilan Province's public organizations also, regarding purposes of the followed hypotheses will be examined:

- 1 .Environmental uncertainty is related to centralization.
- 2 .Environmental uncertainty is related to formalization.
3. Environmental uncertainty is related to Complexity.
- 4 .Environmental uncertainty is related to integration.
5. There is relationship between environmental uncertainty and Knowledge management.
6. Knowledge management is an effective modifier in relation between uncertain environment and centralization.

- 7. Knowledge management is an effective modifier in relation between uncertain environment and formalization:
- 8 .Knowledge Management is an effective modifier in relation between uncertain environment and complexity.
- 9 .Knowledge management is an effective modifier in relation between uncertain environment and integration.

MATERIALS AND METHODS

This paper forms based on a comparative study, (equation modeling) in terms of a descriptive method, and according to the objective, it is an applied research. Population group at this study included Guilan province's public organizations which their numbers were about 210 in the province. Sampling in this research was an improbably way was done and the Sample group equivalent to 69 Organizations were analyzed. Standard questionnaire was used to collect the necessary data for testing research hypothesis. In this research closed questions (Liao et al, 2011 :reference) included 23 questions was used. analytical method of data in this research was Structural Equivalent Sampling

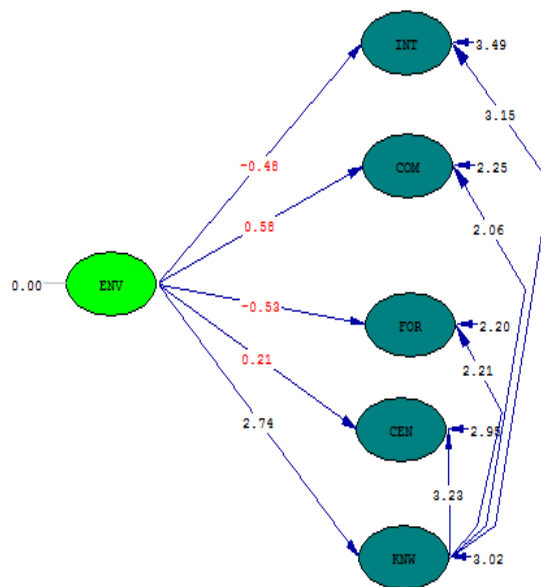
Variable name	environment	Knowledge management	centralization	formalization	complexity	integration
Alfa index	0 /77	0 /843	0 /789	0 /851	0 /801	0 /817

The explanation at extracted results of models responses used related Soft wares which Showed acceptability of this Sample.

RESEARCH RESULTS

Hypothesis testing results shows that:

- 1 .Environmental uncertainty has relationship with Centralization. Regarding to the diagram (1), the model is seen in a meaningful situation, the rate at *t* is equivalent to 0/21, so this hypothesis was rejected.
- 2 .Environmental uncertainty has relationship with Formalization. Regarding to the diagram (1), the model is seen in a meaningful situation, the rate of *t* is equivalent to -0/53, so this hypothesis won't Confirmed.
- 3 .Environmental uncertainty has relationship with Complexity. Regarding to the diagram (1), the model is seen in a meaningful situation, the rate at *t* is equivalent to 0/58, so above hypothesis was rejected.
- 4 .Environmental uncertainty has relation with organizational Integration :regarding to the diagram (1), the model is seen a meaningful situation, the rate at *t* is equivalent to -0/48 which shows above hypothesis don't confirmed.



This diagram (1) shows the model in a meaningful situation

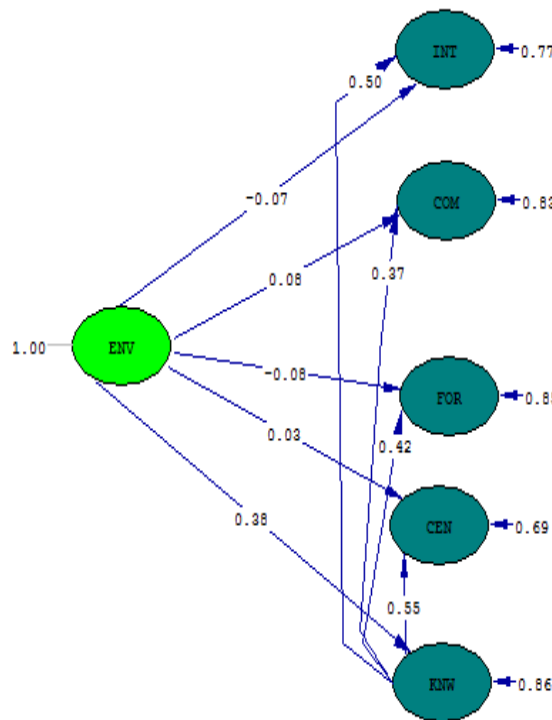
5 .Environmental uncertainty has relationship with Knowledge Management's ability. Regarding to the diagram (2), the model is seen in a meaningful situation, the extent of t is equivalent to $2/72$. So this hypothesis will be confirmed .The result shows the extent of the relation is equivalent to $0/38$.

6 .Knowledge Management Connects between uncertain environment and Centralization as a modifier. Regarding to the diagram (2), the model is seen in a meaningful situation that relationship between uncertain environment and Knowledge, also Knowledge Management and Centralization are meaningful. The extent of uncertain environment's impact on Centralization through Knowledge management regarding to model and in Standard situation is equivalent to $0/209$.

7 .Knowledge management connects between uncertain environment and Formalization as a modifier. Regarding to the model in a meaningful situation the relationship between uncertain environment, also knowledge management and Formalization are meaningful. The extent of uncertain environment's impact on Formalization through knowledge management regarding to the model is equivalent to $0/1596$ in a standard situation {diagram (2)}.

8 .Knowledge management connects between uncertain environment and Complexity as a modifier. Regarding to the model the relationship between uncertain environment and knowledge management, also knowledge management and Complexity are seen in a meaningful situation. The extent of uncertain environment's impact on Complexity through knowledge management is equivalent to $0/1406$ regarding to the model and in a standard situation {diagram (2)}.

9 .Knowledge management Connect between uncertain environment and integration. Regarding to the model the relationship between uncertain environment and knowledge management, also knowledge management and organizational integration are seen in a meaningful situation. The extent of uncertain environment's impact on integration though knowledge management is equivalent to $0/19$ regarding to the model and in a standard situation {diagram (2)}.



The diagram (2), shows the model in the standard situation

DISCUSSION AND CONCLUSION

The output of data analysis about the dependent variables of complexity, formalization, centralization, and integration variables –as organizational Structure's dimensions, and the independent variable of the model (environmental uncertainty) – Showed that these variables in target organization evaluated higher than average or about normal. It is also reveals that the variable of knowledge management is not in the acceptable range, then it is not an important and serious factor organizations of population group. Regarding to the result at data analysis and based on the perception of the respondents about knowledge management items, as an only controllable factor in the study, and also regarding to the received answers to propounded questions, the least averages belong to the importance of employees’ knowledge sharing in paying bonus to them. Therefore, it seems that the managers

should consider the extent of employees' effort in Sharing Knowledge and their skills with others to allocate compensation rewards.

Regarding to the result, it seems that the methods, provisions and written procedures in organizations should be examined and clarified. Informal relations and interactions in organizations should be reinforced to facilitate the knowledge's sharing. The employees' authorities on performing related tasks should be reexamining by top level management. The extent of employees' Self -reliance and decision making abilities should be empowered. The important thing that allocated a lower score than expected average is an environment for supporting innovative ideas.

RESEOURCES

1. Aarabi, S.M, Mousavi, S, 2010. Knowledge Strategy, Tehran Mahkameh Publications.
2. Adli, fariba , 2006. Knowledge Management at going to Knowledge's beyond, Tehran Farashenakhti Andisheh publications.
3. Alwis, R. S.; Hartmann, E, 2008. "The use of tacit knowledge within innovative companies: knowledge management in innovative enterprises", *Journal of Knowledge Management*, 12(1):133-147.
4. Amabile, T. M, Conti, R, Coon, Lazenby, H, J Herron, M, 1996. Assessing the work environment for creativity, *Academy of Management Journal*, No. 39: 1154-1184.
5. Argote, L.; McEvily, B.; Reagans, R, 2003. Managing knowledge in organizations: an integrative framework and review of emerging themes, *Management Science*, 49(4): 571-582.
6. Barati A, Turani, S, Zahiri, M, 2008. Organizational Structure designing of entrepreneurship Centers in medical Universities in Country , *Science – Project Season of healthy Management* , 23: 41 -50
7. Birkinshaw J, Nobel R, Ridderstrale J, 2002. knowledge as a contingency variable :do the characteristics of knowledge predict organization structure "*organ science*, 13(3):274-289
8. Buckley PJ, Carter MJ, 2002. Process and structure in Knowledge management practices of British and us multinational enterprises, *INT manage*, 8:29-48.
9. Liao C, Chuang, S.H, To, p, 2011. "how knowledge management mediates the relationship between environment and organizational structure." *scinedirect*, 64
10. Daft, R. L, 1998. The theory basic and organization's designing, Parsaiyan, A, Aarabi, S .M, 2007. Tehran's Cultural Projects Publications .
11. Faghihi, A, Alizade Sani, M, 2007. The Crisis identity in Public Management field Challenges and answers, *Seasonal Magazine at Iran's Management Sciences*, 2nd year, (6):25-43
12. Fareed H, Caro L, M. Asif Ali, 2004. Managing Knowledge Effectively. *Journal of Knowledge Management Practice*.
13. Germain R, Drøge C, Christensen W, 2001. The mediating role of operations knowledge in the relationship of context with performance .*J Oper Manage*, 19:453-469
14. Ghelichli, B, 2010. Knowledge management at Creature's process, Sharing and applying at thinkable investment in business, Tehran, Management Publications.
15. Golchinpoor, M, 2008. examining the reasons at Knowledge management's failure an Organizations, *Parks' Specialty Seasonal magazine -and the Centers at technology's growth*, 3rd year, No 37-40,
16. Gordon L.A, Narayanan VK, 1984. Management accounting systems, perceived environmental uncertainty and organizational structure :an empirical investigation .*Acc Organ Soc*: 33–47.
17. HasanZadeh, M, 2009. Examining at Knowledge management's infrastructure factors in Islamic Republic of Iran, *Bimonthly Daneshvar Raftar* , Shahed university , 16 th years No 1:27- 35
18. Kearns GS, Lederer AL, 2004. The impact of industry contextual factors on IT focus and the use of IT for competitive advantage .*Inform Manage*, 41

19. Lee CC, Grover V, 2000 .Exploring mediation between environmental and structural attributes :the penetration of communication technologies in manufacturing organizations .*J Manage Inform Syst*; 16(3):187–217.
20. Maqsood, T.; Finegan, A. D, 2009. "A knowledge management approach to innovation and learning in the construction industry", *International Journal of Managing Projects in Business*, 2(2): 297-307.
21. Monavvariyan, A, Asgari, N,Ashena ,M, 2007. Structural and Conceptual aspects at Knowledge axis organizations, the first Knowledge management's Conference.
22. Piri, Z, Asefzadeh, S, 2006.How Can apply, Knowledge Management?, *Science Magazine of Qazvins medical university* , 40 th tear , (1): 124-132.
23. Reagans R, McEvily B, 2003 .Network structure and knowledge transfer :the effects of cohesion and range .*Admin Sci Quart*, 48.
24. Robbins, S. p, 2008 .*Organization Theory: The Structure and Design of Organizations*, Alvani, M, DanayiFard, Tehran, Saffar Publications.
25. Rubenstein-Montano, B., Buchwalter J., Liebowitz J, 2001. Knowledge Management: A U.S .Social Security Administration Case study .*Government Information Quarterly*; 18 (3):223-253.
26. Seyyed-Naqavi, M. A.; Fayazi-Azad, A, 2009. The assumptions for implementations of knowledge management strategies considering with organizational structure, *Management Studies*, 19(59).
27. Subramaniam, M, Youndt, M. A, 2005. The influence of intellectual capital on the types of innovative capabilities, *Academy of Management Journal*, 48(3): 450-463.
28. Tseng, Sh. M, 2010. "The correlation between organizational culture and knowledge conversion on corporate performance", *Journal of Knowledge Management*, 14(2): 269-284.
29. Yao L.J., Kam .T.H.Y., Chan .S.H, 2007. Knowledge Sharing in Asian Public Administration Sector :the Case of Hong Kong .*Journal of Enterprise Information Management*, 20(1): 51-69.
30. Xu, J.; Houssin, R.; Caillaud, E.; Gardoni, M, 2010. Macro process of knowledge management for continuous innovation, *Journal of Knowledge Management*, 14(4): 573-591.