



Investigating the mediator role of knowledge management intermediary in the relationship between environment and structure (Case Study: Holding Azam)

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Abstract: Human goals in Industrial and civil societies are defined in the organization. It is very difficult to think that human goals are realized without organization. Therefore, organizations are designed to realize the goals of its designers. Knowledge management is closely linked to kind of policy used in an organization and it can affect the organizational structure. Generally, the goal of this study was to investigate the impact of environmental uncertainty on organizational structure through knowledge management capabilities. The population of study consisted of all managers, experts, and subsidiaries of Auto Parts Group of Azam. The model of research was tested using Lisrel and SPSS software through data collected from Auto Parts Group of Azam included 136 samples of members of the group. Based on results obtained, the first and second hypotheses were confirmed, while the third hypothesis was rejected. The results showed that environmental uncertainty has significant positive correlation with organizational structure through knowledge management capabilities, but this relationship is not a significant and direct.

Keywords: knowledge management capabilities, environmental uncertainty, organizational structure, integration

Introduction

Organizational structure of many companies is derived from hierarchical structure and even change in concentration of power and teamwork in organizations. These changes reflect the role and the way information is processed. Research conducted in this field has been very optimistic increasingly on information processing role and considers it as a means to overcome the organizational structure. On the other hand, some studies state that there is no relationship between information processing process and organizational structure. More recently, organizations have provided innovative approaches to processing the information. This innovative approach has changed the tendency of past studies to information processing and they mainly examine the relationship between knowledge management and organizational structure. What distinguishes the examination of relationship between information processing and organizational structure and the relationship between knowledge management and organizational structure is that process of information focuses on collecting, processing and use of data, while management of knowledge emphasizes on organizing, collecting of the most important knowledge for decision-makers (Lia et al., 2011). In addition to information processing, knowledge management has close relationship with policy making in the organization and it can affect the organizational structure. Knowledge management not only affects organizational structures but also it can affect individual approaches. Increased environmental uncertainty changes the focus on organizational resource guides managers attention towards sustainable competitive advantage.

Therefore, environment variables can have important influences on knowledge management, and knowledge management applications are critical for competitive advantage (Willem and Buelens, 2009). The main goal of this study is to examine the impact of environmental uncertainty on organizational structure through knowledge management capabilities. In this study, it is assumed that environmental uncertainty has a significant impact on aspects of organizational structure. Then, in the second part of the study, theoretical principles of study are described. Then, in the third part of the study, methodology and data analysis method were expressed followed by conclusion made of study.

Theoretical principles of study

Appropriate organizing and structure are basic requirements of each management to achieve organizational goals tailored to the specific circumstances of the institution and the changes occurring in its internal and external environment. The organizational structure is one of the most effective factors in the organization. When organizational structure is concerned, it means a method by which individuals and businesses are combined and the relationship between them is determined. Pawar (2000) believes that organizational structure shows the distribution of power in the organization. In the organizational structure, the allocation of tasks are shown and it becomes clear who reports to whom and how works should be coordinated, the organizational evolution model is also determined (Farahani et al., 2004). In addition to the organizational structure, tasks of each organization are done based on statute articles of that organization, statute, regulation or contract agreed and determined for work process of a population. Statute of any organization represents the identity and character of that organization. As it is stronger and more integrated in which all affairs and tasks are stated clearly, the process of doing tasks and affairs will be done better and the possibility of achieving to organizational goals increases (Asefzadeh and Foruzan, 2007). Ghani (2010) defined organizational structure as the official allocation of tasks and roles in business and management mechanisms for controlling work activities. For organizational structure, several dimensions have been suggested that four common types of them are discussed here. These dimensions are formalization, concentration, complexity and integration. Formalization means to standard the work process and to measure and implementation of rules and procedures in the organization and an explanation of organizational behavior using these rules. Concentration refers to value of decisions made and evaluation of activities and accumulation of them in one part. This accumulation of power is to adopt the decision. The complexity refers to different performance and distinctive goals, business trends and the degree of organizational autonomy. Integration refers to separate activities of people in the organization that can be coordinated through formal mechanisms. Although these sectors are not the only organizational structure aspects, they are four of the most basic elements of organizational structure have a significant impact on overall organizational performance (Cortes et al., 2012). Levitt and Whistler (2000) predicted on organizational structure organizational levels in current organizations will be declining, middle management will be removed, and central decision-making will occur at the highest levels of the organization. In other words, decisions taken centrally and concentration will increase. Dimensions of organizational structure are very complicated, but overlap greatly with each other (Morton and Hu, 2008). Different factors can affect the organizational structure and its dimensions. One of the most important factors that can affect the organizational structure is environmental uncertainty. Environmental uncertainty is an important variable in organizational structure and knowledge management studies. Environmental uncertainty means inability to identify the environment and the impact of environmental factors on success and failure in decision-making and its performance in the organization. Environmental uncertainties include external forces that organization interacts with them. Processing of information and the investigation of the relationship between environment and structure are often used in the definition of environmental uncertainty (Lia et al., 2011). Duncan (2011) defined environmental uncertainty as hidden information in events or environmental and he stated that uncertainty means to predict external changes and its impact on the decisions of the organization. Managers are often in contact with the environment and they understand the uncertainty and risk in the environment. In general, environmental uncertainty can be divided into two general categories:

- Uncertainty in the business environment goals
- Uncertainty in perception of managers of the business environment

Considering the first group uncertainty, it can be said that managers have not understood the business goals well and considering the second group, it is said that managers do not know business environment correctly (Gamero et al., 2011).

Managers in organizations can overcome the environmental uncertainty through knowledge management and affect the organizational structure. Organizational structure in today organizations is affected by knowledge management. From the perspective of researchers, knowledge management plays as a mediator role in the relationship between the structure and environment. For this reason, many researchers study on knowledge management. All organizations need to acquire knowledge about the environment and their internal structure. Acquired knowledge can be an important source of innovation and strategic changes. Knowledge and degree of access to it is crucial in the making the decision. In theories expressed in this regard, the coordination between the knowledge required and management of that knowledge is useful and important for organizational effectiveness. In some studies, researchers consider knowledge management as a fundamental variable to examine organizational problems (Piri and Asefzadeh, 2006). Knowledge management capacity of a company means to create, share and use knowledge across organizational boundaries. This definition focuses mainly on knowledge management activities at organizational level rather than individual or team level, since the aim of this study is to understand the creation of value added to company activities through knowledge management. In general, knowledge management activities are divided into 3 parts:

- Knowledge creation
- Knowledge sharing
- Use of knowledge (Zheng et al., 2010)

According to the literature, we aim to find an answer to this question what is the impact of environmental uncertainty on organizational structure, taking into account the mediator role of knowledge management capabilities.

Methodology

In general, environmental uncertainty requires companies that revive knowledge management capabilities, change their structure to adapt a dynamic environment, and modify or create small changes in its organizational structure. As shown in Figure 1, knowledge management plays a mediator role in the relationship between organizational structure and environmental uncertainty.

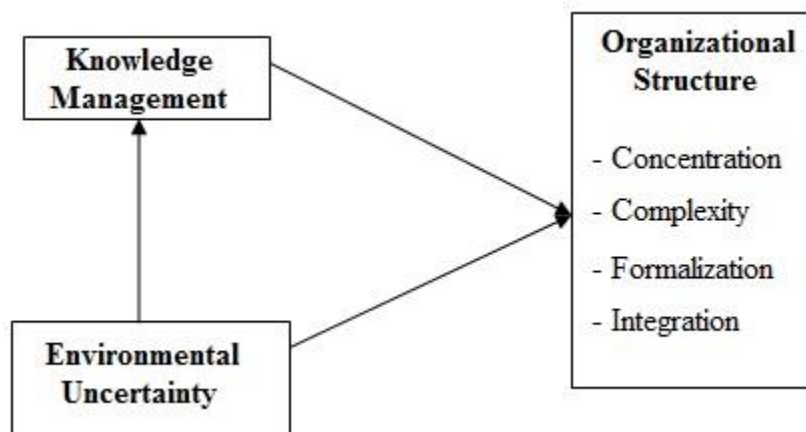


Figure 1) conceptual model of study

Given what was said, the following hypotheses are stated:

- H1:** Environmental uncertainty has a significant and positive effect on knowledge management capacities.
- H2:** Knowledge management capacities have significant and positive impact on organizational structure.
- H3:** Environmental uncertainty has a significant and positive effect on the organizational structure.

As the aim of this study is to investigate the relationships between variables of knowledge management, environmental uncertainty, and organizational structure, this study is applied in terms of goal of study, and it is descriptive-correlational in terms of data collection using structural equation modeling. To examine the relationships between variables, many methods have been suggested in recent years. One of these methods is structural modeling or multivariate analysis with latent variables. In the analytical model study, environmental uncertainty is exogenous variable and knowledge management is endogenous variables. On other hand, environmental uncertainty can be considered as the independent variable, knowledge management as a mediator variable, and organizational structure as dependent variable. The main tool of study is a questionnaire. Accordingly, for studied variables, respectively four questions of environmental uncertainty, 8 questions for knowledge management, 14 questions for organizational structure (5 questions for concentration, 3 questions for formalization, 3 questions for complexity, and 3 questions for integration) with the whole 5-point Likert were considered. In order to assess the reliability, an initial sample containing 20 samples was pre-tested. Then, data obtained from questionnaire were used to calculate reliability Cronbach's alpha that it was obtained for questions of variables, respectively, 80.3% for environmental uncertainty, 92.1% for knowledge management and 83.5 for organizational structure. These figures reflect that questionnaire is reliable. The population of current study includes all the experts and managers of Azam Holding (automotive parts manufacturer) and its subsidiaries. A total of 800 managers and experts are working in this company. In this study, due to the limited population size, Cochran formula was used to calculate the sample size. The number of samples based on this formula is 136 questionnaires, selected based on random sampling. Due to probability of lack of answer by some samples or inability to use the questionnaires, 200 questionnaires were distributed among the population. Out of 200 questionnaires distributed, 146 of them that can be used in statistical analyses were returned. Therefore, the rate of return is 73 percent. In order to assess the validity of questions, factor validity was used. For accuracy of the measurement models, confirmatory factor analysis was used that results showed that all factor loadings were higher than 0.3 (in permissive mode), which is indicative of convergent validity. Before entering into hypotheses testing stage and conceptual models, it is needed that the accuracy of the measurement models of independent variable (environmental uncertainty), mediator variables (knowledge management) and the dependent variable (organizational structure) to be ensured. Therefore, measurement models of these three variables are given that it was done by first and second order confirmatory factor analysis. Confirmatory factor analysis is one of the oldest statistical methods to examine the relationship between latent variables (factors obtained) and the observed variables (questions) and represents a measurement model (Byrne, 1994).

The results of first-order confirmatory factor analysis of knowledge management showed that measurement model of knowledge management is appropriate measures and all the numbers and parameters are significant. Fitness indices of measurement model indicate the suitability of the model for measuring knowledge management.

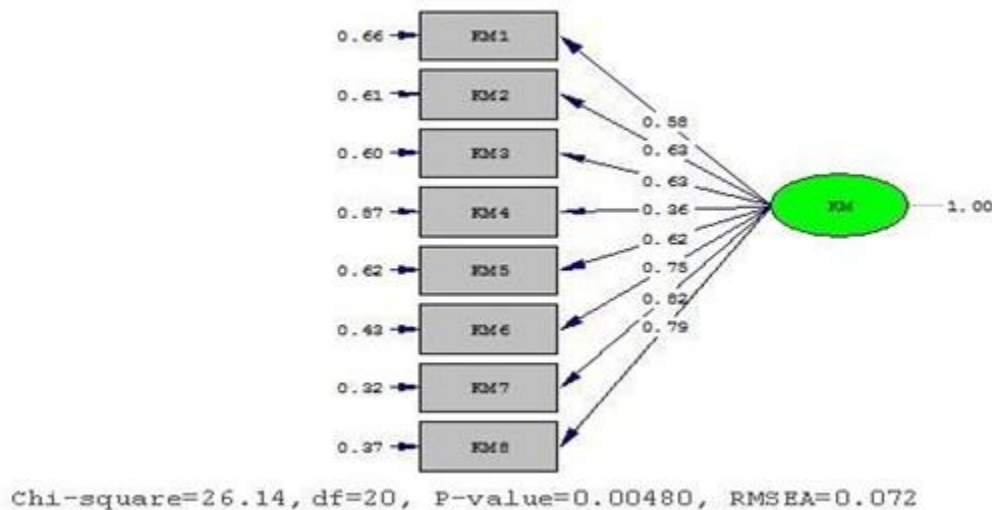
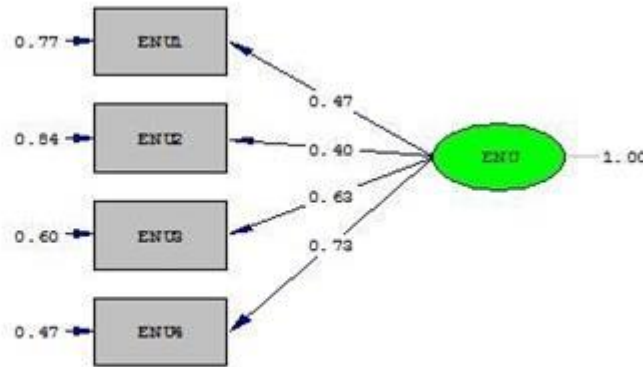


Figure 2) standard estimation model of knowledge management capacity

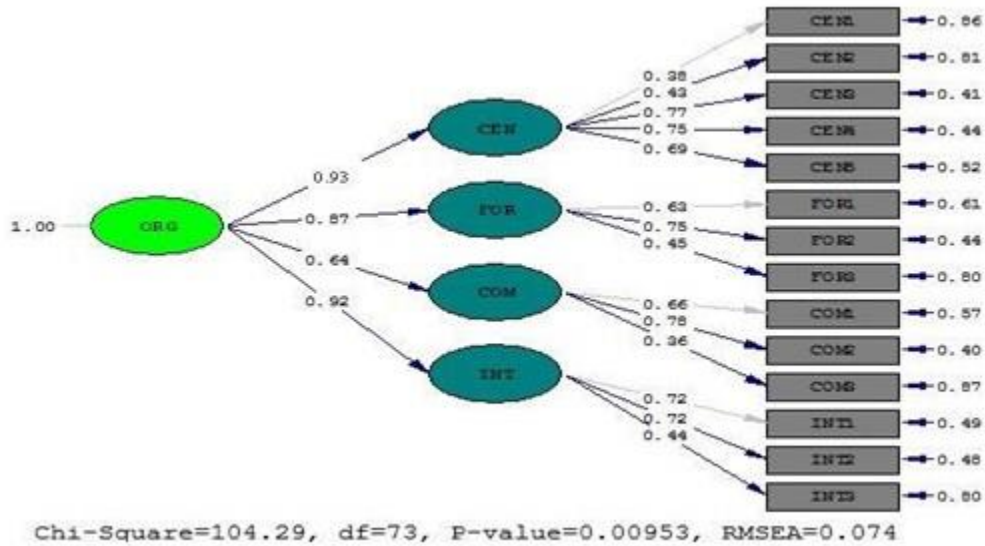
First order confirmatory factor analysis results showed environmental uncertainty measurement model was suitable and all the numbers and parameters are significant. Fitness indices of measurement model indicate the suitability of the measurement model of environmental uncertainty.



Chi-square=3.14, df=2, P-value=0.00003, RMSEA=0.075

Fig. 3) standard estimation model of environmental uncertainty

Second order confirmatory factor analysis results showed that measurement model of organizational structure was suitable and appropriate and all the numbers and parameters are significant. Fitness indices of measurement model represent the suitability the measurement model of organizational structure.



Chi-Square=104.29, df=73, P-value=0.00953, RMSEA=0.074

Figure 4) standard estimation model of organizational structure

The last part of the output of software LISREL is for evaluation of validity of measurement scales of model's fitness indices. Some of the most important indices along with their standard values for decision are shown in Figures 5 and 6.

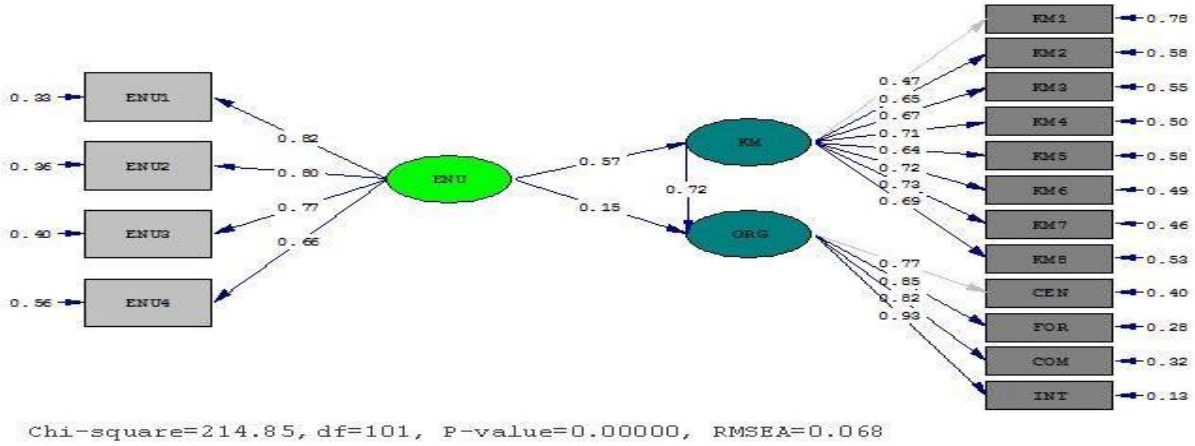


Figure 5) Final Standard Model of Research

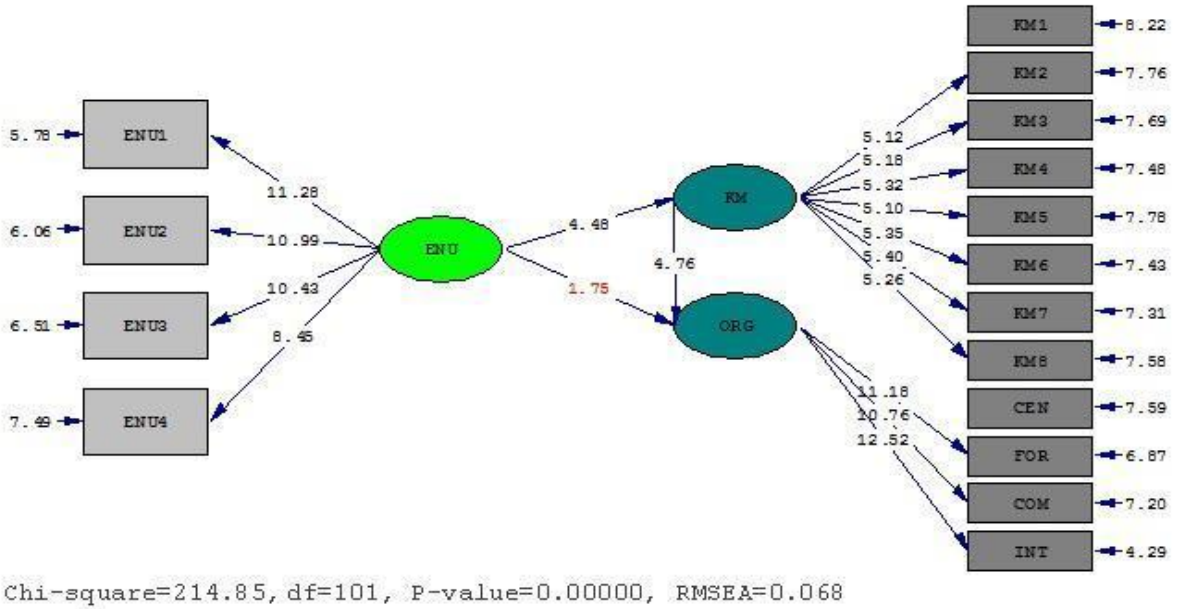


Figure 6) final significant numbers model of study

As you can see, the model is appropriate in terms of fitness indices. Considering relationship between the model's components, the following results were obtained:

1. Environmental uncertainty has a significant positive impact on knowledge management capabilities (equals to 0.57) (**Hypothesis 1 was confirmed**).
2. Knowledge management capacities have a significant positive impact on the organizational structure (equals to 0.72) (**Hypothesis 2 was confirmed**).
3. The environmental uncertainty has a significant positive on the organizational structure (equals to 0.15) (**Hypothesis 3 was rejected**).

If the model coefficients in a significant number are larger 1.96 or smaller than the - 1.96, the relationship is statistically significant that in this study, first and second hypotheses of study had significant numbers greater than 1.96, therefore, they are confirmed.

Conclusion and recommendation

Structural equation modeling results on variables of study showed that first and second hypotheses were confirmed and third hypothesis was rejected. This means that environmental uncertainty has significant and positive impact on knowledge management capabilities (with statistic of 0.57). As the statistic (0.72) obtained from the relationship between knowledge management and organizational structure, it can be stated that knowledge management capacities have significant and positive impact on organizational structure. On the other hand, the significance relationship between environmental uncertainty and organizational structure was not confirmed on the base of the results. Analysis carried out confirms the mediating role of knowledge management. It refers to the extent that organization businesses have been standardized and it has been defined as the extent that rules, procedures and guidelines have been written. It can be concluded that environmental uncertainty among manufacturers of automotive parts have a significant positive impact on the organizational structure through knowledge management capabilities and environmental uncertainty can have positive impact on four subsets of organizational structure, including complexity, concentration, formalization and integration. According to the statistical results, this relationship is not directly significant. Uncertainty in environment imposes pressures on company and thereby strengthens the knowledge management capabilities in organization. Previous studies have also confirmed the mediator role of knowledge management. The researchers suggest that the development of knowledge management capabilities would respond to changes in the environment. Significant relationship between knowledge management capability and organizational structure means that as knowledge management capability is greater, environmental uncertainty will reduce. In such cases, formalization develops, complexity expands, and mechanisms of integration increase. Formalization is external phenomena for staff, that is, rules and procedures are clearly defined and directly implemented under monitoring of management. Knowledge management in organization leads to saved knowledge in organization. Formalization is a method for appropriate distribution of knowledge in organization. Organizations faced with uncertainty tend to knowledge management capabilities and satisfy its needs in company in such circumstances so that daily current affairs of company to be facilitated and correct organizational decision making to be ensured. Enhancing capabilities of organization allows organization to take steps to changes its environment and can even predict it. Generally, companies are looking for simplification and less hierarchical structure. Therefore, they tend to re-engineering of structures. The results of this study showed that environmental pressures strengthen the management capabilities in knowledge in organizations. This leads to increased formalization, complexity, concentration and integration in organization and organizational structure. Some researchers argue that knowledge management capabilities directly affect the structural attitude. First, knowledge management capacity provides the basis for functionality and helps managers in redesigning their organization. Using innovative technique, knowledge management can provide a method to achieve the simple and functional structure. Second, knowledge management applications may be a reflection of the status quo. In other words, conditions and type of interaction of knowledge creator and knowledge application can determine the way knowledge is used. Due to widespread application of knowledge, organizations should try to provide enough information and training to employees and individuals. Over time, organizations need to develop knowledge management strategies for business development so that they can provide new opportunities for organizations or revive organizational structure. The third hypothesis was not confirmed in this study. It is suggested that the impact of environmental uncertainty on organizational structure to be separately measured and its relation to the dimensions of the organizational structure to be examined. In addition to environmental uncertainty, strategic orientations of companies also affect the organizational structure through knowledge management capabilities. Therefore, it can be discussed in future research. The extent and the way knowledge management is developed, and its impact on organizational structure dimensions can also be discussed in future research.

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