To Examine the Relationship between Infrastructure of the Organizational Structure and Knowledge Management Strategy in Education

1Javid Mehr Mahmoud, 2Bahramzadeh Saeid, 3Bahramzadeh Hossein Ali
1Department of Education Management, Sabzevar Branch, Islamic Azad University, Sabzevar, Iran.
2Young Researcher and Elite Club, Aliabad Katoul Branch, Islamic Azad University, Aliabad Katoul, Iran.
3Assistant Professor, Department of Education Management, Bojnourd Branch, Islamic Azad University, Bojnourd, Iran.

ABSTRACT

Upon entering to no boundaries environments, the organizations are faced with a plurality of data and information that gradually leads them to strategic problems and confusions. These conditions remind the managers and policy maker, the necessity of implementing an organizational change program not just a technique to avoid such a crisis. The program is called knowledge management; that of course the requirement of its strategy-driven deployment, has introduced this organizational program beyond a technique. A successful program of knowledge management as a strategy needs to some preparations that necessarily techniques to improve the performance or management modes (such an empire in a new community) as a tool in the hand of managers, aren’t depend on it. This paper explores the relation between the organizational structure arguments as an independent variable and knowledge management strategy as the dependent variable that include two main activities such as production and distribution of knowledge. Infrastructure of the organizational structure consists of three dimensions: complexity, centralization and formalization. Therefore, the results obtained by addressing the corresponding relationships between the mentioned variables that confirm the necessity of infrastructure for the implementation of knowledge management strategy.

INTRODUCTION

Since beginning until now, human established presence in an evolutionary way that during various periods, the effects of this evolution have been reflected in his artifacts and thinking. The works like thinking revolution in Renaissance, to create the industry and the machine, post-industrial age and electronics, and then knowledge and information age. So it can be a continuous and gradual process of human evolution in long time domain. This modern civilization makes a profound revolution in thinking methods, formulas, ideologies, and dogmatic rules of organization. Hence, our organizations have taken a step to transition that is quickly changing. But what is the strategy out of these environmental changes? Undoubtedly, it’s by knowledge and information. Maybe, by drawing attention to mentioned critical conditions, information means seem optimistic. We don’t recommend using this means. But the result of a self-regulating power is human evolutionary process that it always has been motivated by obligation and has founded the treatment. Providing the fields, infrastructure and causes that fit with requirements of family, and produce, distribute and manage knowledge intrinsic not extrinsic and accidental which we are looking for that in this study, is the most obvious one that led to create a learning and knowledge creation organization and not an organization that act based on capturing the knowledge of the other ones (as adaptive learning rather than creative learning). This requires a change in organizational thinking method rather towards creative tension. But providing the organizational infrastructure to achieve the desires, in which organization? Certainly in an organization that knows its own mission; the training the correct approach to produce and distribute the knowledge and before that the correct thinking approach; an organization that has always been effective for the society not affected by that. The organization always with both family and society form the mechanisms of a nation’s behavior and character by the induction of cultural standards since elementary education.

Corresponding Author: Bahramzadeh Hossein Ali, Assistant Professor, Department of Education Management, Bojnourd Branch, Islamic Azad University, Bojnourd, Iran.
E-mail: bahramzadeh_hosein@yahoo.com
**Knowledge Management:**

Knowledge management is defined as a conceptual framework of the activities and the perspectives to progress, to apply and to benefit from knowledge capital of company. Mc Neab (2007) believes that knowledge management about the information management is to apply the innovative answers for the old and new questions to create the maximum knowledge in an organization. Dibawsky (2006) defines it as an identifying, collecting, organizing and distributing process of Intellectual capital that are vital for long term performance of the organizations. Knowledge management is production, present, storage, transmission, transformation, application, and maintenance of the organizational knowledge. Turban (2003), believes that knowledge management is to create, to storage and to distribute knowledge so that it can be possible to benefit from it in the organization. Hendli (2000), believes that it’s a general description of the culture, processes, infrastructures and technologies available in an organization that makes it possible to attract, to develop and to optimize the knowledge of organization to achieve the strategic goals.

**To generate Knowledge and to Distribute It:**

The effective knowledge management is the one that by applying the processes and appropriate structures provides the possibility of knowledge generation. Knowledge generation is a spiral process; an interaction between abstract and explicit knowledge. The interaction between these two types of knowledge leads to the production of a new knowledge. The Standard European Committee (2004), introduce knowledge generation as a result of social interaction, like: education, learning, solving of common problems or the brainstorming. In organizational and administrative level, innovation processes generate new knowledge for products and services in the case of improving the activities focused on processes and internal procedures. Knowledge generation can be located within the research and development function by establishment of expert groups that is called technical community. According to this, knowledge is key element of knowledge management and manager must pay attention to generate it.

When knowledge is worthy that been spread and applied. Knowledge distribution is transfer knowledge between individuals and organizations that can occur by formal and informal processes. More formal activities focus on distribution of explicit knowledge, while the informal activities focus on distribution of abstract knowledge. The purpose of this phase is transferring knowledge to the right place, at the right time with a good quality. Knowledge sharing can occur in many different ways. Knowledge can be added to database or be distributed by documents. Knowledge sharing is transfered with useful mobility information process from a person to another. Knowledge distribution is a process when people exchange their abstract and explicit knowledge mutually and generate new knowledge commonly. Therefore, knowledge distribution is a key element of innovation. Every knowledge distribution process consists of two parts: presentation and collection. Knowledge presentation can be described as “communication with the others that is dependent on intellectual capital”.

**Organizational Infrastructure:**

Nonaka, Takyvchy (1995), Nonaka and Kouno (1998), and Kouno & Toyama (1998), in their model of knowledge generation presented the key element of Ba that is a Japanese word and means spatial, place, conditions and is necessary background to generate knowledge, along with two key elements SECI & knowledge assets. Conceptually, Ba element can be considered similar to organizational infrastructure variable to manage knowledge in organization. In the other words, the process of knowledge generation in this model (SECI) requires the availability of key layer Ba that is base of this study (note to figure 1 and 2).
Fig. 1: Three layers of knowledge generation

While companies are experiencing the rapid growth and globalization, computer networks are useful to generate and distribute knowledge. But human element can lead to create the new infrastructure in knowledge management. Hence, to generate the organizational knowledge is associated with many systems and processes that combine with the organizational infrastructure. Three types of infrastructure are used in many organizations: management, technical and social. Gold, Malhotra & Sgars (2001), examine the effective knowledge management subject from the perspective of organizational facilities. They mention that organizational infrastructure includes technology, structure, and culture with a knowledge process structure including acquisition, transition, application and maintenance. The necessary facilities and pre-requisites of organization are effective to manage knowledge. Sharifzade and Bouldlai (2008), indicate that it’s necessary to create the infrastructures such as knowledge strategies, knowledge-oriented organizational structure, the education and training of knowledge-oriented human resources, knowledge-oriented organizational culture, and IT to establish an integrated system of knowledge management. Ton & Hang (2006), have considered infrastructures such as IT, human resources and organizational structure related to knowledge management process. And finally Sharif 0 Din & Rouhld (2004) introduced infrastructures such as organizational culture, organizational structure, technology, and political guidance in their model. Many studies have identified the infrastructures of knowledge management. The results of examination of a large European company about major success factors of knowledge management indicate that structure of the organization is one of the main providers of knowledge management.

Organizational Structure:

The internal structure of an organization can promote or prevent of the success of knowledge. The organizations must have good organizational structure in order to manage knowledge effectively. Rybnýk & Sayrk (2007) believe that abstract knowledge can be effective when it’s within a particular organizational culture and structure and a set of processes and routines. Centralization level, formalization, how information flows among departments, and the state of confidential documents are important structural dimensions that their situation and features directly influence on generation, transmission, storage and applying knowledge in the organization. Management encyclopedia (2000), defines the organizational structure like this: the organizational structure is associated with the way that organizes people and businesses in an organization in order to do their functions. Rabinz(2008) believes that the organizational structure indicates how functions are allocated. Who report to whom, and also what formal coordination mechanisms are which organizational interaction patterns should be followed. He defines the organizational structure as a component of the organization including complexity, formalization and centralization elements. The organizational structure is important to apply the technical structure. Although the organizational structure is the planned logical reasoning of departments and people’s tasks in an organization, but the structural elements often have unintentional and unexpected results that hinder cooperation and distributing knowledge among internal boundaries of the organization. Indeed, the optimization of knowledge distribution in a task environment can reduce the distribution of knowledge within the organization in many cases. It is important that the organizational structure is designed for flexibility because in this case, the employees increase knowledge distribution and corporation among boundaries of the organization and the supply chain. During 20th century, the organizational structure have been fluctuated between two basic types: bureaucracy (bureaucratic) and working group (work-temporary). Saymon (1947) & Vebr (1992) state the bureaucratic structure is based on classification of human forces and hierarchical distribution of authority and responsibility. Bureaucratic is suitable to direct the chores efficiently, when the situation is stable. But when it’s facing to rapidly and uncertain changing, it can’t perform the tasks well. Therefore, the companies with bureaucratic organizational structure will face to the difficulties in generating new knowledge. It’s when they are faced to uncertain fundamental changes because they don’t attempt then don’t know what they need. In traditional task structures, the communications are directed vertically. The other costs of bureaucracy to Glnrd (1954), Mrton (1940), and Selznick ((1949) include: internal resistance, cumbersome regulations and procedures, part orientation, reduction of employee’s responsibility sense, the issue of the proper ways to achieve goals. In contrast with the working group that is a flexible, adaptable, dynamic and participatory organizational structure. The working group is an official group or team that is located together as representatives from members of different sectors for a hard task deal with a temporary issue in many cases. But the organizational structure of the working group has some weaknesses; because the special nature of the working group is not suitable for implementation and continuous transition of knowledge across an integrated and comprehensive organization. When many various small working groups are combined with each other, the organization will fail to achieve the goals and perspectives on the organizational level. Hence, more bureaucracy in the implementation, application of new knowledge is efficient and effective, however the working group is self-made and more effective in generating new knowledge. A manufacturer organization must be efficient as a bureaucratic organization and also it must be flexible as a working group organization. According to what was stated before, Nounka et al (1993), and Nounka & Takuchi (1995), presented an
organizational structure as an infrastructure. As it’s illustrated in figure 3, an infrastructure organization can bring an organization to visualize in three layers: knowledge base, bureaucracy system and project team. The lowest layer of infrastructure organization is the knowledge base that is both abstract knowledge dependent on organizational culture and explicit knowledge that covers archival system, computerized database etc in the form of documents. This layer acts as an archive to generate knowledge of the organization. The second layer is an administrative system in a usual place and acts normally. The highest level is the project team that describes the weak link of the self-made project teams’ share by the common perspective of the organization. Thus, according to the observations, infrastructure organization adopts various forms dependent on the perspective. Generating of the organizational structure is a dynamic cycle of the information and knowledge that is moving among three layers diagonally. Staff’s project team has been selected in the top layer among sections and different functions of administrative layer. Based on the company’s vision offered by the top management, they (the staff) apply the interaction of generate knowledge activities with other project team. Suddenly the team’s tasks are completed and staff moves the down, it means the layers of knowledge base and assets of the generated knowledge in the project. After classification, documenting, and indexing of new knowledge, they come back to administrative system and will be involved in daily operations until another project. Therefore, it’s needed a key design for an infrastructure organization to form this type of the organization staff’s circular motion. Obviously, such a structure with such a logical mechanism is a very suitable provider to generate and distribute the organizational knowledge.

Research Hypotheses:
The Main Hypothesis of the Study:
There’s a significant relationship between the organizational structure and knowledge management strategy in Education Office of North Khorasan Province.

The Secondary Research Hypotheses:
The first hypotheses: there’s a significant relationship between the organizational structure (formalization, centralization and complexity) and generating knowledge in the Education Office in North Khorasan province.
The secondary hypotheses: there’s a significant relationship between elements of the organizational structure (formalization, centralization and complexity) and the distribution of knowledge in the Education Office in North Khorasan Province.

The Research Methods:
According to the nature of the problem, and to adapt its features with different categories of research methodology, it can be said that the type of this study is applied in terms of objective. Also it should be noted that this study is descriptive, survey, field and correlation, based on the method. To examine the relationship between the variables and testing hypotheses after data collection through questionnaires, SPSS statistical software has been used.

To assess the validity of collection data tools (questionnaires 1 and 2), due to the pattern set to make the questionnaire, we applied the content validity method; and the Cronbach’s Alpha Method has been applied to determine the reliability coefficient. This method is applied to calculate the internal consistency of the measuring tools such as questionnaire. Hence, with calculation of the numbers related to 30 initial samples from the respondents in pre-test, the reliability coefficient of measuring tools in this study for the questionnaire 1 is 0.904 and for the questionnaire 2 is 0.894.

Community and the Samples:
The samples of this study, it meant the employees of the North Khorasan Education Organization are 208 people. Therefore based on this, and corresponding with Morgan Table and the related calculation formula, the sample size is 136 people. Also to determine the sample size is as follows.

The Research Findings:
Descriptive Statistics:
Among 208 employees of the organization, 196 are female and 12 are male. Also in terms of the education level, 22 have diploma degree, 16 have foundation degree and 170 have bachelor’s degree.

Inferential Statistics and Relationship between Variables:
In order to test the hypothesis, the statistical methods such as Spearman correlation coefficient and Wilcoxon were used; in each method has two procedures based on the type of the questionnaire.
The first sub hypothesis: there’s a significant relationship between the organizational structure (formalization, concentration and complexity) and generating knowledge in North Khorasan Education.
The results of the tables (the first method) and (the second method) show that the correlation coefficient between the organizational structure and generating knowledge are 0.218 and 0.181. So there’s a significant relationship between the organizational structures and generating knowledge in the first method with confidence level of 99% and in the second method with confidence level of 95%. In Wilcoxon Test the obtained result from the tables (the first method) and (the second method) show that the correlation coefficient between the elements of organizational structure and generating knowledge are 420, -10 and 385, -10. So there’s a significant relationship between the elements of the organizational structure and generating knowledge in the first method with the confidence level of 99% and in the second method with the confidence level of 99%.

The second sub hypothesis: there’s a significant relationship between the elements of the organizational structure (formalization, concentration and complexity) and generating knowledge in North Khorasan Education.

The obtained results from the tables (the first method) and (the second method) show that the correlation coefficient between the elements of the organizational structure and the generating knowledge are 0.103 and 0.183. So there’s not a significant relationship between the elements of the organizational structure and the generating knowledge in the first method with the confidence level of 95% and there’s a significant relationship in the second method with the confidence level of 95%.

Conclusion:

Compared with the findings of the research background, and according to the relative verification of the main hypotheses of the research that has been measured under the different tests and methods, there’s a significant relationship between the organizational structure and the generation and distribution of knowledge and consequently the knowledge management strategy. Therefore, the results of the present study indicate that the considered infrastructure with different values and sizes associated with knowledge management strategy is concerning the generation and distribution of knowledge. Hence, these two sets of variables in different situations and conditions are affected by the interaction cycle. It’s always important the direct and indirect relationship established between them. Also the relationship between the research variables shows that the organization needs to provide the suitable infrastructure of the organizational structure in order to benefits from sustainable advantages of knowledge management. It’s provides kind of knowledge management. The knowledge staff needs a flat structure, strong shared values and an effective balance between people and the community. The organizational structure aren’t always made so that to be appropriate with the needs of knowledge management. It’s maybe difficult or impossible the efficient distribution of knowledge by the geographical or functional barriers that have been developed in the past. Domain of knowledge distribution must be proportional with the form of organization. However, there’s no such thing as an ideal structure. The structures and systems are always a compromise between conflicting goals. For example, decentralization raises freedom and it may have positive effects on internal knowledge development. However, it reduces the independence of distributed knowledge across the world. As a result, their application is limited. So decisions about the structure in their effects on the fundamental elements of knowledge management can be contradictory. Discussion regarded to the choice of an appropriate organizational structure has always been inconsistent. In the other words, an infrastructure organization has been a flexibility that is proportional for knowledge management strategy in generation and distribution dimensions.

REFERENCES

Sharifzade, Fatah, H. Boudelaei, 2008. Knowledge Management in Administrative, Production and service Organizations, Tehran, Jahad Daneshghahi Publication- Allameh Tabatabai Department, 1st Edit


