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Making an entity-relationship model of the knowledge management process with strategic thinking

Elaboración de un modelo de relación de entidad del proceso de gestión del conocimiento con pensamiento estratégico

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ABSTRACT:

The aim of this study is to present a model between knowledge management process and strategic thinking in department of sport and youth in Alborz province. The following project, in the aspect of collecting data is descriptive, from the goal aspect is practical and the relationship between variable research is obvious. The way of doing project is calibration. Accordingly, by considering the previous research, the variable research has been recognized. Then, the primary model of project was designed and based on that, the questionnaire has been made and results was confirmed by many experts via factor analysis method, and after determining the stability, they were given to the statistical analysis. The collected data measured by laser software and results illustrated that there is a relationship between the knowledge management processes including generation of knowledge, using and storage and strategic thinking in considered society.

KEYWORDS: using knowledge, sharing knowledge, strategic thinking, producing knowledge, storing knowledge.

AUTHOR NOTES

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RESUMEN:

el objetivo de este estudio es presentar un modelo entre el proceso de gestión del conocimiento y el pensamiento estratégico en el departamento de deporte y juventud en la provincia de Alborz. El siguiente proyecto, en el aspecto de la recopilación de datos es descriptivo, desde el aspecto del objetivo es práctico y la relación entre la investigación variable es obvia. La forma de hacer proyecto es la calibración. En consecuencia, al considerar la investigación anterior, la investigación variable ha sido reconocida. Luego, se diseñó el modelo primario del proyecto y, a partir de eso, se elaboró el cuestionario y muchos expertos confirmaron los resultados a través del método de análisis factorial y, después de determinar la estabilidad, se entregaron al análisis estadístico. Los datos recopilados medidos por el software láser y los resultados ilustraron que existe una relación entre los procesos de gestión del conocimiento, incluida la generación de conocimiento, el uso y el almacenamiento, y el pensamiento estratégico en una sociedad considerada.

PALABRAS CLAVE: uso del conocimiento, compartir el conocimiento, pensamiento estratégico, producir conocimiento, almacenar conocimiento.

INTRODUCTION

The most underlying characteristic of intelligent organizations in 21st century is emphasizing on knowledge and information. Despite past ones, new organizations have got advanced technology, need to acquire, management and utilization of knowledge in order to improve management and eternal changes. Knowledge is a powerful device which can make some changes in the world and create some innovations¹⁰. In the modern world, knowledge supposed to be the first beneficial source for organizations and it is an important competitive source, and for the time being, it is the competitive advantages for organizations and interested in knowledge management in many organizations is becoming more and more gradually⁴. The term of knowledge management for the first time goes back to 1994¹⁴. Knowledge management is a combination of Knowledge-based system, artificial intelligence, software engineering, improvement of business process, management of human resources and conception of organization behavior²⁶. The importance of knowledge management in this complicated world cannot be ignored. The organizations would be successful in future that they know how manage, disseminate and achieve information efficiently. Today, we are taking steps in the way that competitive benefits not just by achieving information but also most importantly by new knowledge would gain¹². In fact, by entering to the learning process, knowledge will become the most important organization resource and success of organizations depends on their capability of creating, gaining and disseminating of information¹⁵. The knowledge management is a process which includes creations, capture, disseminate and application knowledge. These four factors in the field of knowledge management for an educational organization can provide renewed education which commonly uses for creation, Capture, refinement, disseminating and generation of organization capability. In order to realizing the development criteria, knowing the knowledge process is important today. The following stages are to reveal the knowledge management process that had been illustrated by Bose in 2004.

Create knowledge: knowledge results from the experience and individual skills. Knowledge would create by the new ways of working or development of science. Sometimes, if there is no knowledge in an organization, the outer knowledge will be emerged.

- *Capture Knowledge*: the knowledge should be saved in the draft forms in archives. Most of organizations are using different resources for keeping their knowledge.

- *Disseminate Knowledge*: knowledge should be available for public in an organization, which makes an opportunity for people to use it

- *Application Knowledge*: generally, organization knowledge should be in line with services and process. If one organization cannot readily show a right definition of knowledge, it will face difficulties in other competitive areas⁷.

Capability of Interpretation of irrelevant and Unplanned events would be one of the most successful activities of managers in the following organizations that these capabilities are like strategic thinking showing a substantial deficit to reach an organization to their goals. This strategic capability helps the employees to distinguish, realize, anticipate, and control the prospective activities, and instead of being affected changes, they can create future changes which can control them²¹. In literature of strategic management, there have been many definitions for the conception of strategic thinking; some authors use conception of strategic thinking for other reasons such as strategic planning, strategic management²⁵. Others concentrated on the strategic management process and expressed that a strategic planning would contribute in strategic thinking²² or accepted that a designed strategic management can facilitate a strategic thinking in an organization²⁴. Mintzberg, who believes in clear distinguish between strategic thinking and strategic planning, announces that strategic planning is not a strategic thinking. He, in fact, believes that strategic planning focuses on analysis and it would be considered as interpretation, expansion of details and common strategic configuration. On the other hand, strategic thinking emphasizes on combination, using intuition and creativity for making a fixed shape of organization, and it proves that a strategic planning seems to be a process that would become from strategic thinking¹⁷. Ohmae in his famous book entitled the thinking of a strategist claimed that if you are not able to detect the remarkable subjects, it ends up failing and confusing; even if you put many physical and spiritual pressure on your own and your employees. It has been revealed by Cristina et al at 2014 in their work entitled "Exploring the role of knowledge management practices on exports: A dynamic capability view" the ways of knowledge managements affect exports significantly, in a way that to improve exports, existence of knowledge management will be an essential requisite but not a sufficient one¹¹. In this regard, Alexia at 2014 reviewing the theory of knowledge management and prospective directions expressed that efficiency in organizations depends on the capability of managers for making new knowledge, and knowledge would be the key factor in production not machinery. In addition, they confirmed that in a new business atmosphere, profits of a company vastly depend on utilizing the knowledge management processes⁵. In another research by Gelard in 2014 has been proved that there are strong ties between transformational leadership and all aspects of that with knowledge management¹³. Moreover, in 2014 Naser showed that knowledge management and its factors affect organizational learning. He confirmed that among all knowledge management mentioned before, the most effective cause on organizational learning would be knowledge contents¹⁹. In 2014 Shu-Mei, in a research with the aim of considering the effects of knowledge management and source connected management on the company's functions, concluded that knowledge management can have a big impact on big company achievement²³. In another survey, Keng (2014) represented that there is a strong relationship between this two factors strategic planning, human resources management and aspects of knowledge management. They also showed process management can have considerable impacts on the business knowledge and disseminated knowledge¹⁶. Angela and their team in their work with the aim of realizing how knowledge management can affect project efficacies revealed that knowledge management on achieving to project management aims would be effective⁶. Charles and coworkers in 2014 revealed that the more using the knowledge management in an organization increase, the faster that organization would progress⁹. Gamal at 2014 also showed that knowledge management and its aspects has impacts on operational function. Also, innovative operations can play intermediary role between the knowledge management and operations¹⁸.

Goodarzi et al in 1388 in a survey entitled "the connection of organizational culture and knowledge management of managers in Physical Education Administration" illustrated that there is no connection between the shared culture and knowledge production; However, there seems to be a positive relationship between the shared culture and transferring knowledge. Furthermore, there believes to be a mean association between knowledge management components³. In this area, Ansari in 1390 revealed that knowledge

management and creativity in general directorate is in the middle level and there is a positively mean relationship between knowledge management and creativity and among the quadruplet aspects of knowledge management, extraction and socialization have got the significant relationship with the creativity¹. Azarin et al in 1391 in a research project entitled "regression analysis of the relationship between knowledge management constitutes and human resources operation" approved that among three variables in a model, educational variable has the most effective influence in anticipating of amount of human resources in general directorate of physical educational organization in eastern Azerbaijan in Iran.

For those who are going to change their future and space, authority on strategic thinking would be so important. Strategic thinking is a beginning point. Managers and planners can make a prospective future in employees strategic thinking and for happening it they can use a proper strategy. For this reason, realizing the organizational factors and variables resulting in strategic thinking in employees is so important, as we mentioned before, in our country many research work has been done in the area of knowledge management and its connection with other variables such as organizational culture, creativity and human resources operation; but, till now there is no reports of a connection between knowledge management and strategic thinking in sport organizations; therefore, the importance of doing a research in this regard would be tangible. Accordingly, the aim of the current project was to distinguish of a relationship between knowledge management and strategic thinking in the employees of sport and youth organization in Alborz province.

Model of Research Conception: In this research, knowledge management variable considered as an independent variable; and strategic thinking variable would have considered as a dependent variable. By path analysis technique (structural models), the relationship of knowledge management variable and strategic thinking achieved. By factor analytic methods, the measured models turned into latent variable.

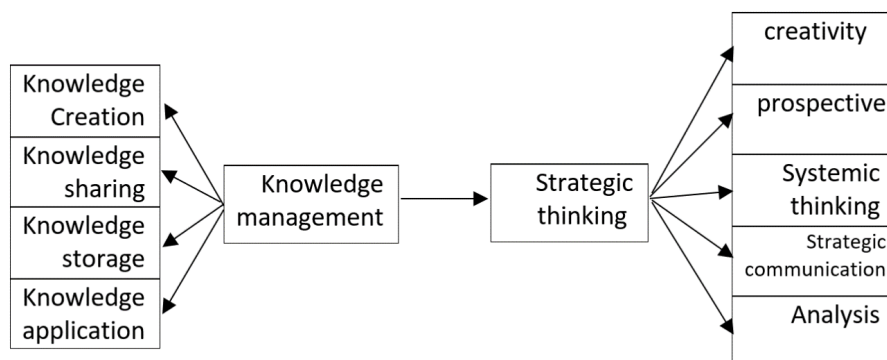


FIG. 1.
the model of research conception

RESEARCH METHODOLOGY

Current research from the way of collecting data is descriptive, from the goal aspect is practical and the relationship between variable research is obvious. The way of doing project is calibration that the most important advantages of that is generalization of results. Research methodology includes: knowledge management is like independent variable and strategic thinking is like dependent variable.

Devices for gathering data: In order to consider the link between knowledge management and strategic thinking, the data and findings achieved by two questionnaires. Questionnaire 18 considered as analysis of knowledge management and questionnaire 14 designed for strategic thinking. Furthermore, to validity of questionnaires, the factor analysis was used. Knowledge management measured in 4 aspects including knowledge creation, knowledge sharing, knowledge storage and knowledge utilization and in the five Likert

scale. Strategic thinking variable considered in 5 aspects including creativity, prospective, systemic thinking, strategic connections and strategic analysis.

validity and reliability: validity of knowledge management questionnaire and strategic thinking would specify and prove by faculty members and as claimed before in factor analysis, the validity was measured too and it showed that all questions have high correlation to the latent variable (factor loading in all mentioned above was more than 0.7).

In reliability of questionnaires, Cronbach's α was estimated for distributed 30 primary questionnaires. For knowledge management and strategic thinking, it was 0.87 and 0.82 respectively which showed it was sufficient and great questionnaire.

Statistical Population: In this project, the statistical population was the all employees in sport and youth department in Alborz province (n=190) that based on Morgan table, 127 people was considered accidentally simple as statistical samples. Both measurement instruments were distributed among 127 employees and among them just 125 questionnaires were selected and analyzed.

Data analysis: In this survey, structural equation modeling was used. In this way the causal relationships of knowledge management and strategic thinking was estimated by SEM $\pm$ means with laser software and based on that they answered to whole answers. Overall, first factor analysis, second one (measuring models) and path analysis were utilized during which in order to validity of knowledge management conception and strategic thinking, the first and second factor analysis was done. Then, by pathway analysis, the correlation between knowledge management and strategic thinking were measured.

Findings: Structural model: Having assured of validity of measured models (factor analysis of knowledge management conceptions and strategic thinking), the main questions of research was evaluated. In fact, relationships between knowledge management and strategic thinking were estimated that mentioned in the following model.

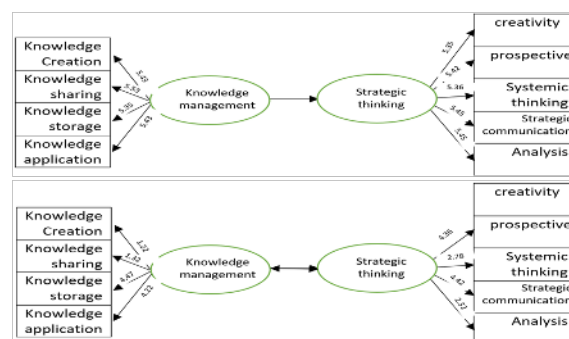


FIG. 2.

The relation between knowledge management and strategic thinking.

Study of the relationship between variables

For this purpose, the relationship between model variables (creation, sharing, utilizing, storage and strategic thinking) from the structural models and in special pathway analysis. It is noteworthy that to answer the research questions, the SEM $\pm$ mean had been used. In addition, for whole pathways coefficient of confidence was 95% and error levels was 5%. As it is shown in table.1, the effect of knowledge management on strategic thinking and all four aspects was significant and the relationship between knowledge management and strategic thinking was also clear and straightforward.

We used different indices χ^2 , df, P value and RMSEA. The best index in laser software is χ^2/df that if it was less than 3, model fitting is much better. RMSEA index which is the mean squared error and would make based on model errors. The limited amount of that is 0.80 which means less than it can be acceptable and less than 0.05 is great.

Meaning	Standard coefficient	Pathway	Question
5.75	0.73	Strategic thinking	Knowledge management
5.07	0.61	Strategic thinking	Knowledge Creation
5.25	0.71	Strategic thinking	Knowledge sharing
7.60	0.69	Strategic thinking	Knowledge storage
7.67	0.74	Strategic thinking	Knowledge application

Model fitting: The achieved amounts showed in table.2, demonstrates that the conceptual model of research has a good fitting and the obvious relationships between knowledge management on strategic thinking has been confirmed. As a result, mean square error model is (0.064) which is less than 0.08, and also X^2/df is 1.42 which is less than 3; Therefore, model has a good fitting which indicates that planned relationships in accordance with research theoretical framework was logical.

average of square error model	df	X^2	indecas
0.064	36	37.16	amount of indices

DISCUSSION

By increasing difficulties and becoming complicated in any organizations, a request for addressing the issues based on knowledge and powerful devices of strategic planning would boost more and more. Strategic thinking as a complementary for strategic planning is a proper attitude which, in order to prevent problems, can contribute in taking opportunities, using resources properly. Furthermore, hiring updated employees those have a strategic thinking require delicate schedules and realizing the caused factors. For these reasons, the following research had been defined based on the relationship between knowledge management and strategic thinking via the structural models.

The main question is that whether there is a positively connection between knowledge management and strategic thinking. For answering this question, the outputs of laser software with standard coefficient of 0.73 and meaning of 5.76 which indicates there is a correlation between knowledge management and strategic thinking. These findings indicate that detecting, organizing, transferring and using properly of data and experience in the organization would result in improvement of strategic thinking among employees of sport and youth office in Alborz province. Based on these findings it would be suggested that knowledge achievement and using that facilitate by detecting the weaknesses and strengths resulting in the strategic thinking. Our results are consistent with other researchers' work such as Christina et al 2014¹¹, Alexia 2014⁵, Gelard (2014), Keng (2014), and Shu-Mei (2014). For instance, Alexia indicates that efficiency in organizations depends on capability of managers for making new knowledge and knowledge is the key factor of production. In addition, they confirmed that in a new business atmosphere, profits of a company vastly depend on utilizing the knowledge management processes. In another research by Christina it has been revealed that the ways of knowledge managements affect exports significantly, in a way that to improve exports, existence of knowledge management will be an essential requisite but not a sufficient one¹¹. Another question of this research is that whether there is a positively connection between components of knowledge

management and strategic thinking. The results demonstrated that there is a relationship between the components of creating knowledge and strategic thinking with standard coefficient of 0.61 and meaning of 5.07. Outcomes shows that creating knowledge can have influence on strategic thinking and attitudes of the employees in different organizations (individuals, groups, intra and extra organizations) in sports and youth department in Alborz province. Based on the outcomes it would be suggested that by providing some facilities the employees can use of the newest resources and knowledge in their field. In addition, creating some work groups and investing in research activities can create different fields of knowledge. In this regard, Gamal (2014)¹⁸ in a survey with the aim of considering the role of knowledge management process on function demonstrated that components of creating knowledge have a relationship with operational function. The highlight is that production of knowledge results from the human interaction during work. Ideas may shape in their minds but the key is to create knowledge in a group organization. The next question of research is that whether there is a relationship between sharing knowledge and strategic thinking. The results of laser outputs illustrated that there is an association among the components of sharing knowledge and strategic thinking with standard coefficient of 0.71 and meaning of 5.25. The results also represented that if an organization distributes the existing knowledge among their employees, which can boost their knowledge, presumably the employees of the sport and youth department in Alborz Province would enjoy the high levels of strategic thinking and updated innovative ways. Accordingly, suggested that organizations in order to maximum knowledge sharing by changing the existing strategies and professional rotation can contribute in transferring knowledge. Moreover, the role of organizational culture would not be ignored. If disseminating the knowledge become a dominant culture and employees know clearly their tasks, knowledge sharing would be effective. The results of the survey were consistent with Charles et al 2014⁹ and Naser (2014)¹⁹. Naser in their work showed that knowledge management and its factors such as knowledge sharing would affect organizational learning. They also proved that among all components of knowledge management, knowledge contents are the most effective factor in organizational learning.

Another question of research is that whether between knowledge storage and strategic thinking is a positively meaning relationship. The results have shown that between two variables with the standard coefficient of 0.69 and meaning of 7.60 is a correlation. These findings mentioned that knowledge documentation would lead to the strategic thinking among employees in general directorate of sport and youth office in Alborz province. accordingly, in order to beneficial use of knowledge, data would be encoding, in a way that it can give some information to others in an organization. Furthermore, knowledge should be stored and categorized based on the demands of their learnings and organizational goals. The last question focused on the if there is a relationship between knowledge using and strategic thinking. The result showed that between these two variable is a relationship with standard coefficient of 0.74 and meaning of 7.67. These findings proved that if employees use their experience and skills in new conditions in order to improve their function, probably we would see creativity in facing the issues and challenges in an organization for the advancement of sport and youth office goals in Alborz province. Based on the results it would be expected that organizational structure and human resources toward in a way that leads to an operational use by employees and provide a job security for them which make the obsessed of being fired. In addition, a lot of expertise considers the most important stage in knowledge management process, because competitive advantages do not depend on rich resources of knowledge, while it depends on the way that they utilize of knowledge sources in organizational operations and decisions. Our conclusions are consistent with results of Carlo (2014)⁸ and Angelica et al (2014)⁶.

It is essential that employees of sport organizations think strategically due to achieve their goals and creating the values leading to more creativity after making some unwantedly changes and issues in an organization. For the employees being involved in strategic thinking, needs to be planned and detected because the factors engaged in strategic thinking are the most important things. Based on the results of

survey, one of the causes that presumably play a role in strategic thinking is knowledge management and its components; therefore, it has been offered to planners and managers to see the strategic thinking in the organizations, move toward learning knowledge and using that. Also, the data collecting would recognize as a value and it is mandatory for all employees to know every helpful knowledge till faced it, use it in a proper way.

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