

PREDICTION OF KNOWLEDGE MANAGEMENT BASED ON THE CONFLICT RESOLUTION TECHNIQUES AND ITS DIMENSIONS AT AMIRKABIR UNIVERSITY OF TECHNOLOGY

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ABSTRACT

The aim of this research is to study the prediction of knowledge management based on the conflict resolution techniques and its dimensions at Amirkabir University of Technology. The statistical population of this study consists of all employees at Amirkabir University of technology in 2010. The statistical sample covers 140 administrative employees at Amirkabir University of technology and they are selected according to Morgan table and random stratified sampling method. Robbins' conflict resolution questionnaire (1996) and researcher-made knowledge management questionnaire are the data collection tools in this study. The amount of alpha coefficient is equal to 0.76 for conflict resolution and 0.97 for knowledge management questionnaire; thus they are more than 0.70, the research measurement tool is reliable. According to the results of linear regression, there is a significant correlation between the conflict resolution and its dimensions in managers with knowledge management. The linear regression equations are as follows: $y = 0.60$ (conflict resolution) $y = 0.29$ (personal difference) + 0.40 (Structural).

Keywords: *Managers' Conflict, Knowledge Management*

INTRODUCTION

Despite the fact that the knowledge management is an emerging field in management, the world has been faced with the rapid and inevitable changes due to the globalization phenomenon and the knowledge management, as one of the newest management tools and techniques, plays an important role as a part of human capital management strategies. The knowledge management is one of these tools and the successful organizations utilize the opportunities by new managerial tools and technologies. Despite the fact that the governments have gradually realized the importance of knowledge management in the public sector, there is still a long way to operationalize it.

The knowledge management is a process which helps the organizations to find, select, organize and publish the important information. It is an expertise essential for activities such as problem solving, dynamic learning, strategic planning and decision-making (Specter, 2003; by Zolfaghari, 2007).

Given the devastating impact of conflict and its benefits and in terms of inevitable conflict in teamwork, the conflict management and leading it towards fulfilled individual and collective achievements are significantly important and play a crucial role in productivity of team work.

The conflict management refers to the increased control of conflict and focus on the constituting factors and leading them to the group and individual goals. The conflict management is among the manager and leader's behavioral competencies and refers to their interpersonal roles. The organizational and work group managers should utilize their skills by understanding the factors with cause the conflict and apply them to create the individual creativities while dealing with the devastating effects of conflict and differences.

The conflict is an inevitable issue in today's individual and organizational life and emerges in different interpersonal, intrapersonal, intergroup, intra-group and intra-organizational forms. The conflict management is a process of planning for avoiding the conflict in possible place and organizing to resolve the conflict where it occurs (Slocum, 2002). The conflict can be constructive in the following cases.

- When it can improve the quality of decisions;
- When it leads to the initiative, innovation and creativity;

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- When it leads to the group members' curiosity and intensified interest in each other;
- When it strengthens the climate and environment of arbitration system and development process.

Conflict benefits: It has benefits when it can improve the quality of decisions or solution; when it leads to the initiative, innovation and creativity; when leads to the problem solving and reduction of stress and tension in group.

The world organizations are complex and should have the ability to comply with the continuous changes in order to achieve the success. Due to the increasing science and technology development, complexity of social, cultural, economic and social conditions of society, etc, the raised new and different thoughts, the environmental uncertainty, and great changes and challenges of the world, the organization should be established with strong learning and updating and equipped with the necessary strategies, be complied with the rapid changes, and have a timely response to environmental stimuli, and dynamically continue the career by gaining the extensive knowledge in the field of organizational renovation and development. Nowadays, the management of such these organizations is considered as the biggest management challenges (Charles Handy).

Nowadays, the human seeks to leave the industrial civilization and takes step towards the postindustrial stage or the civilization and enjoying the knowledge. In the book, Powershift, Toffler considers the conceptual and structural evolution in knowledge-based system as one of the consequences of postindustrial society. Furthermore, Charles Handy consider the current development of world as a Copernican revolution in which the models are fundamentally changing and the citizens can only be creative by participating in knowledge-based system. The knowledge can be described as something which manages both data and information. He briefly explains that the knowledge is characterized by three factors: 1) Information, 2) Capacity or ability, and 3) attitude. According to this classification, the knowledge is resulted from the multiple factors such as the experience of skills, culture, personality characteristics, emotions, and so on (Monavvarian, 82, 13, p. 13).

Nowadays, most of the organizations utilize a large amount of their power and concentration on the development of tools, systems and informing the employees about the fact that the acquisition and dissemination of knowledge are considered as the important organizational tasks.

The knowledge management is the explicit and systematic knowledge management which is correlated to knowledge creation, collection, organization and application processes (David, 2003; quoted by Zolfaghari, 2007).

According to the constituents of knowledge management cycle, the knowledge management consists of eight main factors which form its cycle:

1- Knowledge, 2- Knowledge acquisition, 3- Knowledge storage, 4- Knowledge sharing, 5- Knowledge utilization, 6- Knowledge retention, 7- Knowledge objectives, 8- Knowledge assessment.

Given the importance of studied variables, the aim of this study is to investigate the correlation between managers' conflict resolution and knowledge management at Amirkabir University of Technology.

MATERIALS AND METHODS

This research has descriptive-correlative type. In correlative research, the managers' conflict resolution is investigated according to the dependent variable.

Statistical Population, Sample and Sampling Method

The statistical population of this study consists of all employees at Amirkabir University of technology in 2010.

The statistical sample of this study consists of 140 administrative employees at Amirkabir University of technology and they are selected using Morgan Table and through stratified random sampling.

Research Tools

The researcher-made standardized questionnaire is applied to collect the required data for this study and its responses have five options and range from never to forever. The questionnaire consists of 73 questions and includes the questions related to the managers' conflict resolution and knowledge management.

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The research measurement tool includes Robbins' conflict resolution questionnaire (1996) with 30 questions including the personal difference (questions 1 to 10), structural (questions 11 to 20) and relational (questions 21 to 30) dimensions and the researcher-made knowledge management questionnaire including 43 items questions of leadership management (questions 31 to 36), teamwork dimensions (questions 37 to 40), and knowledge sharing (questions 41 and 43) dimensions.

Reliability and Validity

Robbins' conflict resolution questionnaire (1996) and researcher-made knowledge management questionnaire are the data collection tools in this research.

The reliability of tools is measured through Cronbach's alpha.

The alpha coefficient is equal to 0.76 for conflict resolution tool and equal to 0.97 for knowledge management; since they are above 0.70, it indicates the reliability of measurement tool in this study.

For validity measurement, the tools are available to advisor and supervisor professors and three educational administration professors, and the validity is confirmed performing the modification.

RESULTS AND DISCUSSION

Results

In this study, from the whole number of subjects, 74 subjects (9.25%) are male, 54 (6.38%) female, 30 (4.21%) with diploma, 12 (6.8%) with associate degrees, 56 (40%) bachelor, 28 (20%) master and higher.

Table 1: Descriptive statistics of "conflict resolution" dimensions

	Conflict resolution	Personal difference	Structural	Relational
Mean	91.08	31.22	3,103	28.86
Median	92.00	32.00	30.50	29.00
Mode	92	31	30	26
Standard deviation	10.822	4.330	4.841	4.779
Skewness	0.007	-0.488	0.104	-0.043
Kurtosis	0.550	-0.241	-0.639	-0.088
Minimum	67	21	22	18
Maximum	119	40	42	40
Total score	8106	3840	3475	3146

As presented, the conflict resolution dimensions tend to a normal distribution due to the proximity of central indices.

Table 2: Descriptive statistics of "knowledge management" dimensions

	Knowledge Management	Management leadership	Teamwork	Knowledge sharing	Knowledge creation	Digital Follacy	Ideas and mission	Strategy	Organizational Culture	Rational capital	Learning organization
Mean	119.6200	19.0407	11.6031	8.4667	8.3206	11.6107	7.8702	10.5564	13.3969	10.9403	15.9104
Median	119.0000	19.0000	12.0000	9.0000	8.0000	11.0000	8.0000	11.0000	14.0000	11.0000	15.0000
Mode	82.00	19.00	13.00	9.00	3.00	9.00	8.00	12.00	14.00	10.00	6.00
SD	35.84049	4.02736	3.38703	3.25255	3.57183	3.44087	2.67581	4.35788	5.37613	4.21733	6.62470
Skewness	0.093	-0.143	-0.078	0.003	0.136	0.447	0.021	0.235	0.166	0.170	0.142
Kurtosis	-0.598	0.791	-0.695	-0.670	-0.929	-0.471	-0.598	-0.904	-0.781	-0.616	-1.153
Minimum	50.00	7.00	5.00	3.00	3.00	4.00	3.00	4.00	5.00	4.00	6.00
Maximum	195.00	28.00	18.00	15.00	15.00	19.00	15.00	20.00	25.00	20.00	28.00
Total score	11962.00	2342.00	1520.00	1143.00	1090.00	1521.00	1031.00	1404.00	1755.00	1466.00	2132.00

As shown, except for the learning organization, the knowledge management and knowledge creation dimensions tend to the normal distribution due to the proximity of central indices.

First research question: Is there a correlation between the conflict resolution and knowledge management at Amirkabir University of Technology?

The regression is utilized to answer the research question of whether there is a correlation between knowledge management and conflict resolution. The regression model and its equation are presented in the following table.

Table 3: Summary of regression model and its equation

Correlation coefficient	Square of correlation coefficient	Square of adjusted correlation coefficient	Standard error of approximation
0.600	0.360	0.350	29.40139

Table 3 shows the correlation coefficient, square of correlation coefficient or the coefficient of determination, so that there is a high correlation between these variables equal to 0.60. Furthermore, the coefficient of determination indicates that 0.36 percent of changes in knowledge management as the dependent variable is covered by the conflict solution as the independent variable.

Table 4: Summary of regression model and its equation

	Sum of squares	Degrees of freedom	Mean square	F	Significance level
Regression	33485.295	1	33485.295	38.736	0.000
Residual	59646.480	69	864.442		
Total	93131.775	70			

The significant level presented in the table above allows the analysis of regression model since it is below 0.05, thus the research hypothesis is confirmed.

Table 5: Regression between conflict resolution and knowledge management

Independent variable	Non-standardized coefficients		Standardized coefficients	t	Significance level
	B	Standard error	Beta		
Constant value	-77.330	31.409		-2.462	0.016
Conflict resolution	2.111	0.339	0.600	6.224	0.000

The correlation between conflict resolution and knowledge management is equal to 0.60 and the coefficient of determination equal to 0.36 and the regression equation is statistically significant according to the significant level of 0.000 and f equal to 38.73. More precisely, 36% of changes in knowledge management as the dependent variable are covered by the conflict resolution as the independent variable. The obtained beta in regression is equal to 0.60 for conflict resolution variable.

$y = 0.60$ (Conflict resolution)

Second research question: The regression is utilized to answer the second research question about whether there is a correlation between dimensions of conflict resolution and knowledge management. The regression model and its equation are presented in the following table.

Table 6: Summary of regression model and its equation

Correlation coefficient	Square of correlation coefficient	Square of adjusted correlation coefficient	Standard error of approximation
0.616	0.379	0.351	29.37962

Table 6 shows the correlation coefficient, square of correlation coefficient or the coefficient of determination, so that there is a high correlation between these variables equal to 0.616. Furthermore, the coefficient of determination indicates that 0.37 percent of changes in knowledge management as the dependent variable is covered by dimensions of conflict solution as the independent variable.

Table 7: Summary of regression model and its equation

	Sum of squares	Degrees of freedom	Mean square	F	Significance level
Regression	35299.930	3	11766.643	13.632	0.000
Residual	57831.845	67	863.162		
Total	93131.775	70			

The significant level presented in the table above allows the analysis of regression model since it is below 0.05, thus the research hypothesis is confirmed.

Table 8: Regression between dimensions of conflict resolution and knowledge management

Independent variable	Non-standardized coefficients		Standardized coefficients	t	Significance level
	B	Standard error	Beta		
Constant value	-73.771	33.219		-2.221	0.030
Personal difference	2.650	0.953	0.291	2.779	0.007
Structural	2.934	0.941	0.400	3.118	0.003
Relational	0.562	1.139	0.062	0.493	0.623

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The correlation between dimensions of conflict resolution and knowledge management is equal to 0.616 and the coefficient of determination equal to 0.37 and the regression equation is statistically significant according to the significant level of 0.000 and f equal to 13.63. More precisely, 37% of changes in knowledge management as the dependent variable are covered by dimensions of conflict resolution as the independent variable. The obtained beta in regression is equal to 0.29 for personal difference, and 0.40 for structural dimension.

$$y = 0.29 (\text{personal difference}) + (\text{structural})$$

Discussion

According to the first finding of this study, there is a significant correlation between the managers' conflict resolution and knowledge management and this research finding along with the other studies such as Gholizadeh, Shabani Varaki, and Mortazavi's research (2005) on data analysis indicate that the internalization in the field of knowledge management is put at the highest priority at Ferdowsi University of Mashhad and then the socialization, externalization and combination. Hassan (1999) has indicated that if the organizational culture is strong and in fact has the real integrity, the organizational culture can meet the organization members' basic needs and enhance the employees' job satisfaction.

Mohammad (1997) has concluded that there is a significant gap between the culture governing the institute and ideal organizational culture. The characteristics of organizational culture have a little impact on effective factors of organization.

Abbas (1999) has argued that the obtained result indicates the lack of correlation between the organizational culture and decision-making method which refers to culture; and the culture is the way of doing things and decision making in the organization. According to Aliollah Ghanbari's viewpoint (1998), it should be noted that the identity element has gained the highest score among the elements of organizational culture in Railway Company. Ali (2002) has concluded that a strong and flexible organizational culture has a significant impact on improving the dimensions of Total Quality Management (TQM). Rahmat (2000) has suggested that there is a significant correlation between the personal creativity and teachers' innovation with job satisfaction, and between the reward and encouragement with job satisfaction. Furthermore, there is no significant correlation between the cooperation and organizational unity with job satisfaction. There is a significant correlation between the management support and job satisfaction; a significant correlation between communication models of and job satisfaction and the correlation between conflict and job satisfaction. Karim Zebardast (2003) has concluded that there is a positive and significant correlation between each component of organizational culture and performance; and the organizational culture affects the managers' performance. According to the research conducted at Ohio State University (1997), the results indicate that the company has a strong culture and high sense of responsibility to solve problems. FrazerJans (1991) has confirmed that giving priority to human resources according to its importance in the organization leads to the effectiveness and improvement of organizational performance. Hewlett-Packard Company (HP) has changed the organizational structure and current procedures for creating and developing the knowledge and changed the organizational objectives and values proportional to knowledge at the higher levels of organization and determined the vision of this organization and created the knowledge-based organizational culture. According to the research by Mollaeinejad, quoted by Ariz (1992), the inter-group communication systems have correlation with cultural values of productivity and innovation in these companies. Nonaka *et al.*, (1991) has argued that the conduction of new knowledge will not lead to the conclusion until the change of organizational culture in the organization. This sentence is raised by Honda Co. managers. Locke (2001) has determined whether the transformational leadership styles predict a constructive organizational culture. Nonaka and Takeuchi (1998) have concluded that the more the size of organizational structure is changed flexibly and timely, the more the organization is successful in acquiring, creating and transferring the new ideas. "Baltazard" and "Cole" have concluded in their research that: The organizational philosophy and high values play the role in the success or failure of knowledge management. The existence of specific and flexible procedures and structures and formation of work teams can enhance the interest in organizational learning and knowledge management processes.

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Marsh and Jones (2002) have studied the knowledge management in the Australian Defence organizations and classified it into four major categories of organizational culture, technology, learning and structural aspects. Azot (2005): (domestic intractable conflicts: Mediation in the hardest cases). Kennedy (2010) conducted a research entitled as "The art of critical thinking" and decision making on deficiencies for a few matters. Anonymous: Education Letter (2010): He has investigated the special techniques applied by the best experts and executives of conflict management and ensured the improvement of a way in dealing with the subsequent conflict with employees, partners or any type of problems. Hau-siu *et al.*, (2002) investigated the correlation between the level of moral development and the use of inconsistency study approach. Furthermore, they studied the content of Chinese culture and psychology which affect the moral reasons and styles of inconsistency study. Ti (1988) has concluded that the corporate conflict can participate in problem-solving and decision-making by encouraging people to study the issue, expressing ideas, seeking better solutions and promoting the comprehensiveness of different ideas in creating the high quality solutions.

Chas (1985) has argued that the proper conflict management skill is essential not only for managers, but also for all members in the organization. Furthermore, as the clarification of conflict is useful, the conflict prevention is much easier and more effective. McPherson (2008) conducted a research with the aim at inviting the educational managers and teachers to critical feedback. David (2002) has discussed on the knowledge transfer process which should be the comprehensive section of discussion and this assumption has a particular correlation with trade teaching population. Richard (1981) has conducted a cross investigation on the center of residence behavior with the initial aim at exploring the factors related to the personal conflict management and work in a series of social service.

The management process also includes a range of activities including learning, participation and experimentation to integrate diverse sets of tasks and implement the powerful information systems such as the Internet, intranets, and extranets. According to the research, we should take the advantage of knowledge a part of which is the general knowledge and the other part is private. Thus an environment should be created with collaboration climate and informal coordination. For this purpose, the organization not only deepens the employees' knowledge, but also creates a new organizational knowledge. Through collaboration, the organization creates a sharing plan for replacing the old knowledge with new one and it is essential for improving the continual improvement in innovation.

The integrate focus on the available knowledge in shared space in not only a process for reducing and analyzing the resources and facilities, but it is a local process with a cycle of developing the resources and facilities. The knowledge management is a strategic commitment and requirement for improving the organizational effectiveness through improving the enhanced opportunities. The aim of knowledge management is not the control of cost, but it is more efficient as a process for improving the ability of organization to implement the main processes. However, there are numerous reasons why the knowledge should be managed and particularly applied in participative technology. There are the mass of information, advanced technology, growing specialized professions, competition, labor mobility, relocation, and capitalization of organizational knowledge in this regard.

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