

## Assessing the Effect of Supportive Factors of Knowledge Management Architecture on Organizational Intelligence

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### Abstract

The objective of this study is to assess the degree of influence of the supportive factors in knowledge management architecture on organizational intelligence in Zahedan city by using descriptive research methods in a correlation study. The sample population consists of 136 Zahedan Municipality staff with higher education, out of which 97 were selected using Morgan's table. Organizational intelligence questionnaire by Carl Albercht and the architectural management questionnaire were used for data collection. The validity of questionnaires was approved by the experts and the reliability indices of the questionnaires were calculated using the Cronbach alpha to be 0.978 and 0.963, respectively. The findings of questionnaires on two levels of descriptive and inferential statistics were analyzed by one-sample t-test and Pearson correlation test, simple and complex regression tests with Stepwise and Enter methods. Research findings are indicative of the fact that there is a significant correlation ( $p < 0.01$ ) between all supportive axes of knowledge management architecture with organizational intelligence. And, according to the results of stepwise regression test on the supportive elements of knowledge management architecture, the best predicting elements of organizational intelligence were motivational factors and using IT technology. Hence, it was possible to predict the changes of organizational intelligence using the changes in elements of supportive knowledge management architecture. Finally, as well as presenting a predictive model for the elements of organizational intelligence, this study provides breakthroughs for improvement of organizational intelligence level and elements of supportive knowledge management architecture in society.

**Keywords:** supportive elements in knowledge management architecture, organizational intelligence, Zahedan municipality

### Introduction

In light of the special condition of organizations and their internal and external environments in the contemporary era, the existing knowledge in organizations is considered as one of their most important assets. This asset gains its significance from its nature as the intellectual capital of the organization in the current competitive atmosphere. Enjoying such knowledge is significant to the survival of the organization and has emerged as a primary strategic source in the 21<sup>st</sup> century, making most organizations interested in utilizing this knowledge effectively in a process called knowledge management.

During the previous century, knowledge management has been considered as an important issue not only in academic circles but in legislative government institutions, economic enterprises, investors and shareholders (Doai, 2010).

Intelligence improves the level of internal organizational information since information is a static entity and it is intelligence that turns it into an organic entity (Malekzadeh, 2010). The achievements in individual intelligence have played a significant role in shaping the concept of organizational intelligence (Salasel, et.al. 2009).

### **Statement of the problem**

In industrialized nations' economies, the balance between knowledge and other sources has been tilted towards knowledge in a way that knowledge has become a decisive factor in life even more than land, profession and capital. In fact, knowledge is a source of survival for organizations (Farhoudi et al. 2008).

With the help of knowledge management, the concepts and method are clear, the challenges are evident and can be overcome and the benefits are outlined and considered. The key issue here is operational support and success assessment and technological aspects are not that important. In order to succeed in knowledge management, there are numerous different items to be considered in different cultures and circumstance (Hasanbeiki, 2010)

### **Significance of the study**

Globalization and international challenges have affected the ever-increasing need for learning throughout life, rapid development of IT and connection of organizations. These advancements have made organizations that are more flexible, ready to face these problems, ready for evolution and first to solve trust issues more prominent (Arastin et al. 2007).

Many companies have concluded that in the contemporary era, instead of physical power, thought and cognition are to be exploited. Such establishments have taken over pyramid networks and networking enterprises and have externalized all their operations, making knowledge generation their mission as an attempt to create a greater added value (Hashemi, et al. 2010).

### **Review of Literature**

#### ***Knowledge management***

The knowledge management system is crucially important, worthy of development in any organization. There are different ways to describe knowledge management system. One is a technical aspect approach that was suggested by Mezo and Smith in 2000. This approach includes three factors: technology, practice and knowledge. The knowledge management system encompasses methods of data collection, organization and release or sharing of information among an organization's staff. Allen Roding's definition of knowledge management includes methodology, controlling, organizing and processing of information to create knowledge to be distributed or made available to be used to create more knowledge (Afrazeh et al., 2009).

#### ***Definitions of knowledge management***

Many definitions of knowledge management have been put forward; some are given in this section:

□ In Jung's view, knowledge management is a unified systematic approach used to identify, manage and share all information assets of an organization including databases, documents, policies and trends (Jong et al., 2003).

□ Knowledge management is a term given to a set of processes as a result of which knowledge is acquired, maintained and utilized. The objective of knowledge management is to exploit intellectual assets to increase productivity, create novel values and enhance competitiveness (Jahanian, 2006).

□ Knowledge management is the process of establishment, approval, presentation, distribution and use of knowledge. These five factors make the bed for training, feedback and re-training in the field of knowledge management in an organization that are usually used to create, maintain and revive the organizational capabilities (Karami, 2009).

### ***Organizational intelligence***

Nowadays, many kinds of intelligence are mentioned. In each of these, intelligence refers to the ability to get, comprehend and use signs and symbols as an abstract ability. Today, intelligence is a prefix in many managerial concepts which is indicative of a shift in organizations' and organizational think-tanks' viewpoint of testing intelligence on modern approaches to the concept of intelligence. One type of intelligence is organizational intelligence.

Organizational intelligence enables us to make better organizational decisions. Organizational intelligence means having a comprehensive knowledge of all the factors that can affect an organization; having an in-depth knowledge of all factors like customers, rivals, economic context, operations and organizational processes that impact the quality of managerial decisions in an organization (Abrzi, 2006).

### ***Organizational intelligence definitions***

Given the difference in attitudes of theorists toward intelligence and benefiting from it, each has presented various definitions of the term organizational intelligence some of which are given briefly below:

□ Organizational intelligence is the method of systematically using the potentials and skills of the organization. Management of human resources and organizational intelligence altogether creates the essential systematic capability for achieving strategic objectives (Kasti, 2001).

□ Perjmerin (2007): individual intelligence can be defined as a dynamic convergence for appropriate survival ("survival of the fittest"). Organizational intelligence is the ability of the organization to utilize the likes of genetic algorithm (Holland, 1975) in order to creatively combine the existing knowledge in people with their interactions (Perjmerin, 2007)

### ***The factors of organizational intelligence***

Albrecht believes that when intelligent individuals are recruited in an organization, they move towards becoming less intelligent and he defines the organizational intelligence as the potential and capacity to mobilize mental abilities and to focus this ability on fulfilling organizational objectives. In Albercht's view, seven factors in organizational intelligence are:

□ Strategic prospect or operational view: is the ability to create, comprehend and express the objectives of an organization.

□ Common fate: when all or most of the employees engage in their tasks, the mission of the organization is known and they feel like having a shared goal and each individual is obliged to feel the success of the organization.

□ Tendency towards change: change is an indication of challenge, gaining new and exciting experience and, in other words, is a chance to start new tasks.

□ Spirits: apart from common fate factor, the factor of spirit is related to a tendency toward issuing excessive standards.

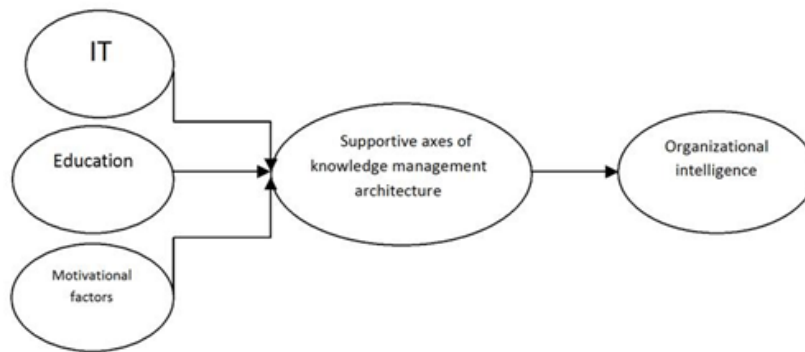
□ Coordination and homogeneity: individuals and groups must organize themselves to fulfill the missions and objectives of the organization. They must share responsibilities and occupations and enforce series of rules of interaction with each other and the environment.

□ Utilizing the knowledge: these days, more than ever before, the practices that will cause the success or failure of an organization are dependent on the acquired knowledge, correct prospective decisions, wisdom and common feeling of meritocracy as well as accuracy of operational information, parallel to organizational structure at any time.

□ The practice pressure: each executive in an intelligent organization must have his own specific executive position. However, this will be more effective when it is a collection of mutual expectations and practice obligation for shared success (Kashef, et al., 2009).

### Theoretical framework of the study

The conceptual framework of the study is comprised of three layers. These layers are set in a way to cover all practices related to knowledge. The main layer that is the innermost layer in the model covers the main knowledge management concepts or in other words the concepts that are directly related to knowledge management that is the architecture of knowledge management. In order to know and better use this framework and draw the relationships between variables, the model used in this study is drawn as the following figure :



**Figure 1. Model used in the study**

### Objectives of the study

The main objective of this study is to assess the correlation between supportive factors in knowledge management architecture and the organizational intelligence of staff of Zahedan's municipality. In order to achieve this objective, the following must be accomplished:

- Analyzing the correlation of IT factor from supportive axes of knowledge management architecture and organizational intelligence in the target population
- Analyzing the correlation of education factor from supportive axes of knowledge management architecture and organizational intelligence in the target population
- Analyzing the correlation of motivational factors from supportive axes of knowledge management architecture and organizational intelligence in the target population

### The research hypotheses

1. There is a significant positive correlation between IT factor from supportive axes of knowledge management architecture and organizational intelligence in the target population.
2. There is a significant positive correlation between education factor from supportive axes of knowledge management architecture and organizational intelligence in the target population.
3. There is a significant positive correlation between motivational factors from supportive axes of knowledge management architecture and organizational intelligence in the target population.

### Materials and Methods

The current study is conducted in an applied experimental design. The sample population is composed of staff and all those under payroll from Zahedan Municipality with higher education which were 136 people. Out of these, 97 were chosen using Morgan table and in order to increase reliability, 105 questionnaires were distributed out of which 105 were returned.

The instruments were devised in form of separate questionnaires (supportive axes of knowledge management architecture and organizational intelligence). In order to measure the organizational intelligence and its influential factors, a standardized questionnaire with a high frequency of use has been utilized here and its reliability and validity are approved. This questionnaire was designed by Carl Albercht in 2003 for the first time and consists of 49 questions in a likert scale. In order to measure the supportive axes of knowledge management architecture and their correlations, another questionnaire of 27 items was compiled in a likert scale.

The questionnaires were approved using face validity and in order to calculate the reliability of questions, Cronbach's Alpha was used in SPSS with the following results:

**Table 1. Organizational intelligence questionnaire's Cronbach's Alpha**

Cronbach's Alpha	No. of questions
0/97.8	49

**Table 2. The supportive axes of knowledge management architecture questionnaire's Cronbach's Alpha**

Cronbach's Alpha	No. of questions
0/963	27

### Results and conclusion

In order to analyze the correlation of supportive axes of knowledge management architecture as the independent variable with organizational intelligence as the dependent variable, and to determine the role of supportive axes of knowledge management architecture in organizational intelligence, stepwise regression test was used after conducting statistical tests like the correlation coefficient, ANCOVA and ANOVA. The results of analyzing variance and statistical regression indices between the variables are given in the following table:

**Table 3. Correlation coefficients of supportive axes of knowledge management and organizational intelligence**

	Motivational factors	Education	Using IT facilities	Organizational intelligence
Organizational intelligence	0.810	0.726	0.673	1.00
Using IT facilities	0.706	0.716	1.00	0.673
Education	0.841	1.00	0.716	0.726
Motivational factors	1.00	0.841	0.706	0.810

As illustrated by the findings in table 3, all the factors in supportive axes of knowledge management are correlated with each other as well as with organizational intelligence.

And, in order to measure the influence of key supportive axes of knowledge management on organizational intelligence, internal regression test is used. As seen in table 4, the value of ANOVA (sig) for the motivational factors is less than 0.01 which is indicative of a linear correlation between these factors and organizational intelligence. On the other hand, the value of ANOVA (sig) for the IT facilities and education is more than 0.01 which is indicative of lack of a linear correlation between these factors and organizational intelligence.

**Table 4. Regression table of supportive factors of knowledge management and organizational intelligence**

R.square	ANOVA (sig)	t	Beta	Independent variable	Dependent variable
0.678	0.031	2.186	0.185	IT facilities	Organizational intelligence
	0.495	0.656	0.076	Education	
	0.000	5.630	0.615	Motivational factors	

Using stepwise regression test whose results are given in table 5, it can be concluded that among the variables studied in the regression model, the best predictors of organizational intelligence are motivational factors and IT facilities, respectively.

**Table 5. Stepwise regression table for supportive factors of knowledge management and organizational intelligence**

Coefficients	ANOVA (sig)	R.square	Beta	Independent variable	Step
B					
Y-intercept = 0.986	0.000	0.655	0.810	Motivational variables	Step 1
Coefficient= 0.725					
Y = 0.805 intercept	0.000	0.676	0.666	Motivational variables	Step 2
Coefficient =0.597					
Y-intercept = 0.805	0.000		0.203	Using IT facilities	
Coefficient =0.185					

According to the results of stepwise regression test which are shown in table 3, there is a significant correlation between supportive axes of knowledge management and organizational intelligence, ergo, in step 1 the motivational factors' coefficient accounts for 66 percent of organizational intelligence. When the IT facilities' factor is inserted in step 2, the variance increases to 68 percent. On the other hand, the findings in table 10.3 indicate that the beta factor boosts the organizational intelligence by 0.666 for a unit of increase in motivational factors and this rate stands at 0.203 in case of IT facilities. In light of these, linear regression equation for this hypothesis can be as follows:

$$\text{Organizational intelligence} = 0.805 + 0.597 * (\text{motivational factors}) + 0.185 * (\text{IT facilities})$$

#### Recommendations of the study

- Using shared decision making approaches and eliminating individualistic decisions
- Creating an organizational atmosphere which welcomes people's comments and boosts managers' acceptance of criticism

- Altering the attitudes of staff to better benefit from and use the existing experience and knowledge
- Improve the internet systems to facilitate staff's use of databases and programs required and related to the mission of the organization
- Supplying essential conditions for successful employees in order to better improve and develop themselves
- Using databases to save information
- Considering bonuses and rewards for those who learn and teach
- Illustrating and interpreting a common fate for the staff and indicating necessities and limitations in this regard so that they can better communicate with each other and express their knowledge and increase their logical support and heed.
- Establishing ground for team work and emphasizing team-learning to improve organizational intelligence
- Making the bed for recruiting intelligent and informed individuals via allotting essential financial and spiritual facilities like assigning new posts, rewards, etc.
- Collaboration of managers and employees in growth, learning and problem solving activities.
- Exchanging information by the employees regarding successful efforts and productive ideas

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