

# The Relationship between Organizational Wisdom and Knowledge Management, Competitive Intelligence and Business Intelligence

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## Abstract

After the strategic management period in the past decades, signs of forming a new approach are seen with a focus on the wisdom of organizations management. This study was conducted with the purpose of examining the relationship of organizational wisdom and the components of strategic intelligence among employees of the Iranian University of Applied Science and Technology in 2014. The method of this study is descriptive correlation from the cross-sectional survey type and as far as the purpose is concerned, it is in the group of research and development. The target population is the influential employees in organization decision-making including 591 participants and the sample size was estimated to be 236 people and the stratified random sampling used was sensitive to the groups' size. To collect data, a researcher-made questionnaire with 108 items was used with 5-point Likert scale that enjoyed content and construct validity. The Cronbach's coefficient was calculated to be 0.93. The collected data was analyzed using the statistical methods of correlation coefficient determination and stepwise regressions. The findings showed that statistically organizational wisdom and strategic intelligence are significantly related with the regression coefficient of 0.67 within the research model ( $p < 0.01$ ), and the components of knowledge management explains 43%, competitive intelligence 32%, and business intelligence 37% of the variation of organizational wisdom; thus, increasing the strategic intelligence in organizations is

mutually related with enhancing organizational wisdom.

**Keywords:** Organizational wisdom, Strategic intelligence, Competitive intelligence, Business intelligence, Knowledge management

## 1. Introduction

Educational organizations as social structures and with the mission of creating wisdom have become especially important in the passage of management from the strategic style to the rational, wise one. While searching for the best decision among all the acceptable choices, managers realize that having wise decision-maker personnel matters greatly and it is manifested beyond the mechanical aspect of the function of the labor force. In the strategic intelligent decision-making, wisdom is the milestone of higher education system; one that if the employees lack, having all the other necessary organizational characteristics may not save the educational system from collapsing.

Strategic intelligence which is the basis of organizational intelligence has a close relationship with the dynamism of the organization. Organizational learning strategy with emphasis on organizational intelligence can contribute to maximize accuracy and precision in activities in learning organizations. On the other hand, organizational wisdom highlights the values of wisdom in organization environment and its analysis is recommended using general concepts and contextual frameworks. Scholars such as Sternberg (1998) has introduced environmental context as a crucial factor in wisdom. Therefore, the development and improvement of any system begins in identifying the existing situation and the multidimensional management in educational system of applied science and technology demands twice as much attention and precision in administration. In addition, in the system of applied science and technology, planning strategies that are derived from organizational intelligence has a complicated nature. In order to simplify the issue, in the domain of organizational wisdom and its strategic intelligence, it is necessary to know the context and the target population.

In spite of the importance that organizational wisdom, strategic intelligence and the relationship of the two have in the national higher education systems, no research has been found in the literature to have studied the above mentioned concepts. Therefore, the present study tried to find a new ground in discovering the relationship between organizational wisdom and strategic intelligence in the current situation of the University Applied Science and Technology as the skill-centered wing of the national higher education in the year 2014.

## 2. The Concept of Organizational Wisdom

Wisdom is one of the personal and social values the literature of which exists in the areas of philosophy and psychology. But how is it related to organizations or management? The search to answer this question leads to define it as a necessary managerial trait, an effective factor in organizations and a useful skill in the staff, and it shows that wisdom can be an organizational and managerial value. It is so because one method to describe leadership is to examine the leaders' personal traits and their distinguishing characteristics (Lim & Daft,

2004). Still, wisdom is hardly known as an independent concept in leadership and organizational activities.

Limited but noteworthy studies in the individual, managerial and organizational levels have examined wisdom using different cognitive and behavioral measures. Stenberg (1985) reported 6 main factors for wisdom. Chandler and Holliday concluded there were 9 factors in the analysis of the main components of wisdom. Reynold (2003) combined the findings of Stenberg (1990) and those of Jason et al (2001) and offered a set of 20 factors as wisdom aspects.

The concept of organizational wisdom refers to the managerial cycle describing the process of transferring wise knowledge to employees and it can be a structural concept having potential value and of organizational benefits (Tack, 1986). These findings do not prove that organizational wisdom results in organizational developmental or financial successes, but it emphasizes that there is a close relationship between wisdom and the organizational achievements.

### **3. The Concept of Strategic Intelligence**

Strategic intelligence comprises of the synergic combination of different intelligences in addition to establishing knowledge management, and is used to increase efficiency in the strategic decision-making in organizations. The main role of strategic intelligence is to specify in what way the situation of the organization can be better in challenges, threats and future opportunities, and how to succeed in them the application of which has become an obligation for competition in the modern economies. In specifying his theory on strategic intelligence in organizations, Libowitz (2011) offered a layer model for strategic intelligence including artificial intelligence, knowledge management, business intelligence and competitive intelligence which offers the decision-makers in organizations a collection of methods, instruments and patterns in the three fields of business intelligence, competitive intelligence and knowledge management to achieve the goals of the organizations. Factors in and out of the organization influence decision making. Business intelligence pertains to the way to receive and share knowledge better in order to access it widely throughout the organization. Competitive intelligence is responsible to observe the environment and people that helps provide further preparation for the organization to appear in market. Yet, even if there exists a good strategy and a suitable framework based on business intelligence and competitive intelligence but chances are low for success if they are not applied correctly or if they do not match the context. On the other hand, the synergy of knowledge management, business intelligence and competitive intelligence, and finding the best patterns using strategic intelligence result in improved strategic decision making and higher efficiency in organizations.

### **4. The Role of Organizational Wisdom and Strategic Intelligence in Organizations**

Intelligence refers to successfully doing different things, while wisdom is successfully doing things besides considering the consequences of our actions for ourselves as well as for others. There is an overlap between the two general structures of intelligence and wisdom in a way

that intelligence is a necessary condition for wisdom but not enough. Because of this and based on the empirical scientific studies, there is a distinction between an intelligent person and a wise one. Reports indicate a similarity between wisdom and intelligence, but the type of wisdom and intelligence factors, the nature of their relation, and intelligent types are not clear. As there is not a high agreement over the definition of wisdom (Moberg, 2001), and as strategic management with strategic intelligence as its basis has become crucially important in organizations, thus the question arises about the relation between organizational wisdom and strategic intelligence. Therefore, creating appropriate understanding them needs examination and research.

## **5. The Strategic Role of the University of Applied Science and Technology in the National Higher Education**

Global development has become increasingly faster in the past decades. Outstanding economic analysts have not considered nor the raw materials or energy, nor asset, but education, as the main factor for development (UNESCO, 2001) and one of the most important factors in this process is the growth of technology in different fields through scientific skill training. Scientific skill training is a kind of education but the practice of the same moulds of it has brought about different results as far as efficiency is concerned. International studies have shown that failure or success of a certain mould of education depends on how well the mould matches the environmental context of the systems of the countries, and not mainly on the internal characteristics and structures of the mould. In scientific skill training in higher education where, due to its dual nature, it is influenced by both education principals and market conditions, organization management becomes more complicated (Nafisi, 2002).

Establishing the University of Applied Science and Technology was an outcome of authorities of the country noticing the necessity of higher education in professions. It was formed with the purpose of improving the labor force pyramid and filling the time and location gap following the 8 years of imposed war and the economic siege of the country. Administrators of the university have managerial and supervisory role over the branches all around the country and tries to revise the so-called present profession structure by managing the existing sources, coordination among the branches, and creating link between them and the different economic and industrial sections (Pourdjani et al, 2006). But how successful has this university been in doing its mission? In recent years, there have been discussions about the lack of poise of the applied scientific trainings in a request-centered university, its tendency to be similar to theoretical universities, and training the trainees in higher levels in different names still theoretical in nature, the lack of the university's own staff in high administrative levels, and from the system point of view, the lack of harmony between the main sections of the system and their components (Pourdjani, 2004).

## **6. Methodology**

The design of this study is a combination of applied research and developmental research based on the purpose, and as far as data collection is concerned, it is a qualitative quantitative descriptive survey (cross-sectional), and correlation (correlation matrix analysis).

The target population, in the qualitative section, includes the staff of the University of Isfahan as scientific experts and the employees having the educational management skill from the University of Applied Science and Technology as applied experts. In the quantitative section, the target population includes 591 employees from the University of Applied Science and Technology.

In the qualitative section, multiple purposeful sampling was conducted using chain technique to achieve a better understanding the subject matter. In the quantitative section, stratified sampling in relation with the size of each group in the whole population was conducted by systematic random selection based on the name list.

In the qualitative section, sample size was calculated by theoretical saturation method and sampling continued purposefully as long as the expansion of facets, diversity and concept relations was possible (Corbin & Strauss, 2008). In this sample the opinions of 11 members of the staff from the University of Isfahan were used as the representatives of the population of scientific experts and of 12 members of the employees of the head office of the University of Applied Science and Technology as the applied experts were used in several phases, through the Delphi Technique and with continuous revision. In the quantitative section of this study, first a pilot study was conducted on 30 participants from the target population to find the sample size. Then, the main sample size was determined to be 236 with the 0.05 level of significance using the Cochran Formula which is used for populations with known number of members.

To examine the correlations among the main variables of this study and their components, correlation coefficient tests, stepwise regressions and exploratory and confirmatory factor analyses were conducted. A researcher-made questionnaire was used to examine the relation of the variables namely the main variables of organizational wisdom and strategic intelligence with the aspects and factors mentioned in the conceptual model of the research.

To measure the validity of the questionnaires, content validity and construct validity were taken into consideration, and the reliability of the questionnaire was tested using the Cronbach's Alpha coefficient of determination.

In order to measure the content validity of the questionnaire, the opinions of 12 professional experts were used in the fields of management, educational management, psychology and statistics from the departments of the University of Isfahan, and also 11 experts in the management and educational management from the University of Applied Science and Technology. The construct validity of the researcher-made instruments was measured separately for each instrument and its subordinates using exploratory factor analysis for the organizational wisdom questionnaire, and the confirmatory factor analysis for the strategic intelligence questionnaire. In order to do so, the turning point of 0.5 was considered as the minimum factor loading. To apply factor analysis, Kaiser Test was used to make sure that the sampling was efficient and the correlation matrix was not zero for the data in the population and that the collected data was appropriate. And the Bartlett Test (1954) was used to examine the homoscedasticity of the variables. The process of factor analysis was done using the appropriate statistical software (Amos). The factors of each questionnaire were illustrated in a

separate model and the coefficients and the measures were examined. To test the reliability of the questionnaires the Cronbach's Alpha coefficient of determination was used and for the organizational wisdom questionnaire, 0.93 and for the strategic intelligence questionnaire, 0.92 was calculated.

## 7. Research findings

This study includes 2 main variables of organizational wisdom having 10 components and strategic intelligence having 3 components. The sample size is large enough ( $n > 30$ ), and considering the Central Limit Theorem, the samples were expected to have normal distribution. In spite of that, to ensure the normality, the Kolmogorov-Smirnov Test was used and it showed that the data of the research variables have normal distribution.

To examine if there is a relation among the 5 indicators of knowledge management, the 8 indicators of competitive intelligence, the 7 indicators of business intelligence and the total score of organizational wisdom, the Pearson Correlation Coefficient and a stepwise regression were used. The Pearson Correlation Coefficient and the achieved level of significance appear in Table 1.

**Table 1-** the results of the correlation coefficient for the components of strategic intelligence and organizational wisdom

the components of strategic intelligence	indicators	correlation coefficient with organizational wisdom
knowledge management	knowledge acquiring	0.57
	knowledge creation	0.57
	knowledge storage	0.57
	knowledge distribution	0.51
	knowledge maintenance	0.56
competitive intelligence	knowing the opponent	0.46
	management style	0.39
	competition level	0.43
	knowing customers	0.44
	research in competition	0.43

	environment awareness	0.43
	market awareness	0.49
	advertisement	0.46
business intelligence	education	0.43
	emerging technologies	0.56
	organizational data safety	0.51
	informing	0.46
	data collection	0.55
	business activity	0.57
	business research	0.46

\*\* significance at the level 0.01 level

There is a significant relationship between organizational wisdom and the indicators of the 3 components of strategic intelligence and their correlation coefficient is positive. It can be concluded that with an increase in the component indicators, the total score of organizational wisdom increases, too. To examine which component has an important significant role in predicting organizational wisdom, stepwise regressions were used for each components. Table 2 illustrates the final results.

**Table 2-** the results of the stepwise regression of the effect of strategic intelligence components on organizational wisdom

step	component		Non-standard coefficients		Standard coefficients	T test	Significance level
			$\beta$	Standard deviation			
third	Knowledge management	Fixed factor	1.50	0.13		11.33	0.001
		Knowledge storage	0.26	0.06	0.31	4.42	0.001
		Knowledge creation	0.15	0.06	0.22	2.66	0.008



		Knowledge acquiring	0.17	0.06	0.22	2.66	0.008
third	Competitive intelligence	Fixed factor	1.52	0.16		9.51	0.001
		Market awareness	0.22	0.06	0.28	3.95	0.001
		Knowing the opponent	0.17	0.06	0.22	3.12	0.002
		advertisement	0.14	0.06	0.17	2.25	0.025
second	Business intelligence	Fixed factor	1.77	0.12		14.8	0.001
		activity	0.27	0.06	0.35	4.34	0.001
		Emerging technologies	0.21	0.06	0.29	3.61	0.001

In the first step of the component of knowledge management, the indicator of knowledge storage was inserted into the regression and it explained 33% of the variation in organizational wisdom ( $R^2=0.33$ ).

In the second step, the indicator of knowledge creation was inserted into the regression and the explanation level had a raise of 8% ( $R^2=0.41$ ). And in the third step, by adding the indicator of knowledge acquiring, the explanation level increased 2% ( $R^2=0.43$ ). So, by adding knowledge storage with the description of 0.31, knowledge creation with 0.22 and knowledge acquiring with the positive coefficient of 0.22, all in all, 43% of the variation of organizational wisdom is explained. Therefore, any increase in the indicators of knowledge acquiring, knowledge storage, and knowledge creation increases results in a significant increase in organizational wisdom.

In the first step of the component of competitive intelligence, the indicator of market awareness was added to the regression. It explained 24% of variation in organizational wisdom ( $R^2=0.24$ ). In the second step, the indicator of knowing the opponent was added and the level of explanation increased 6% ( $R^2=0.30$ ). And in the third step, by adding the indicator of advertisement, the level increased 2% ( $R^2=0.32$ ). So, by adding market awareness with the explanation of 0.28, knowing the opponent 0.22 and advertisement 0.17, all in all, 32% of the variation in organizational wisdom is explained. Therefore increases in market awareness, knowing the opponent and advertisement leads to a significant increase in organizational wisdom.

In the first step of the component of business intelligence, the indicator of activity was



inserted into the regression. It explained 33% of the variation in the organizational wisdom ( $R^2=0.33$ ). In the second step, the indicator of emerging technologies was added and the explanation power increased 4% ( $R^2=0.37$ ). Therefore, adding the indicator of activity with the explanation of 0.35 and the emerging technologies 0.29, all in all, 37% of the variation in organizational wisdom is explained. So, if activity and emerging technologies increase, organizational wisdom increases significantly.

## 8. Conclusion

To examine the relationship between organizational wisdom and strategic intelligence in the University of Applied Science and Technology, it is necessary to pay attention to the components of strategic intelligence (knowledge management, competitive intelligence and business intelligence).

### 8.1, *knowledge management*

Table 1 shows a direct linear correlation among the elements of knowledge management including knowledge acquiring, knowledge creation, knowledge storage, knowledge distribution and knowledge maintenance as its indicators and the organizational wisdom. The indicators of knowledge acquiring and knowledge creation have higher scores and knowledge distribution has a lower score. So, the strongest correlations exist between the indicators of knowledge acquiring and knowledge creation with organizational wisdom, and the weakest between the indicator of knowledge distribution with organizational wisdom, and a rise or fall in the scores of the indicators of knowledge management is connected with wise or fall in the score of organizational wisdom. In the stepwise regression, the results of which appear in Table 2, the 3 indicators of knowledge storage, creation and acquiring in the 0.05 level of significance, explain the variation in organizational wisdom up to 43%.

These findings indicate that there is significant direct and positive linear relationship between the three indicators of knowledge management and organizational wisdom in the University of Applied Science and Technology. It means if the university invests on establishing knowledge management i.e. if it values the acquiring, creating and storing of the technical knowledge in its administrative organization, it can subsequently improve its organizational wisdom.

These findings are close to similar studies. Staudinger and Bultz (1996) found knowledge and contemplation as two parts of the cognitive dimension of wisdom in social communities. Nickerson and Silverman (1998) to define the management of intellectual resources for their proposed strategy found similar dimensions for knowledge in public business. Kramer (2000) found that there is no interference between wisdom and others' thinking power, so he avoided advising which is parallel to knowledge distribution. Stevens (2000) found that minimizing the organization by assigning responsibilities to external agents causes the loss of organizational wisdom which originates in preventing the organization to produce and store knowledge. Montgomery et al (2002) found a relationship between the acquired technical knowledge and wise decisions. To identify the components of organizational wisdom, Hays (2008) defined effective learning which creates knowledge. Lock Lee (2009) found that

human resource produces the current of knowledge in the organization. Soule (2012) found learning and knowledge creation effective in the organizations' wise behavior in environmental difficulties. Mayo-Wilson et al (2014) attempted to assess and measure information and knowledge of the groups' individuals and found it influential in the environmental context. Tabarsa et al (2012) found a strong relationship between knowledge creation and organizational learning with organizational intelligence.

### *8.2, competitive intelligence*

Table 1 shows a direct linear correlation between the dimensions of competitive intelligence including knowing the opponent, management style, competition level, knowing the customers, research in competition, environment awareness, market awareness, and advertisement as its indicators and organizational wisdom. The indicator of market awareness has a higher score and the indicator of management style has a lower one. So, they have the most and the least powerful correlation with organizational wisdom and a rise or fall in the scores of the indicators of competitive intelligence is correlated with the rise or fall in the score of organizational wisdom. In the stepwise regression the results of which are listed in Table 2, the 3 indicators of market awareness, knowing the opponent, and advertisement explain variation in organizational wisdom up to 32% in the 0.05 level of significance.

These findings indicate that there is a positive significant relation between the indicators of competitive intelligence and organizational wisdom in the University of Applied Science and Technology. It means that if the University of Applied Science and Technology invests on improving its competitive intelligence, and puts more importance on the issues of market awareness, knowing its opponents, as well as advertisement for its organization, it can improve wisdom in its organization.

These findings are similar to those of other relevant studies. Nickerson and Silverman (1998) found that defining the target market and the competitive technology are important in the success of the strategies of managing intellectual resources. Xu et al (2003) found that comprehending the information out of the organization has a key role in increasing strategic intelligence and the dynamism of the organization individuals. Kupers (2005) found that connected processes related to purpose, behavior and culture can be crucial for group wisdom and overcoming favoritism. Hays (2008) describe the dynamism of organization wisdom as a dynamic and complicated system. Lock Lee (2009) found that attention to and concentration on the structure outside the organization is vital as one of the three principles of social capital model and efficiency in market. Bagheri (1389) points to the necessity of existence and empowering organizational intelligence for business and competition in market.

### *8.3, business intelligence*

Table 1 shows a direct linear correlation between the dimensions of business intelligence including education in the field of business intelligence, emerging technologies, safety of the organizational data, informing and publicity, data collection, business activity, research as its indicators and organizational wisdom. The indicator of business activity has the highest and the indicator of education in the field of business intelligence has the lowest score and thus

they have the most and the least powerful correlations with organizational wisdom and any rise or fall in the scores of the indicators of business intelligence leads to subsequent rise or fall in the score of organizational wisdom. In the stepwise regression the results of which appear in Table 2, the 2 indicators of business activity and emerging technologies explain 37% of the variation in organizational wisdom in the 0.05 level of significance.

These findings show that there is a positive and significant direct linear correlation between the 2 indicators of business intelligence and organizational wisdom in the University of Applied Science and Technology. It means if the University of Applied Science and Technology invests on improving its business intelligence, and puts more importance on the issues of business activity and emerging technologies in its organization, it can improve its organizational wisdom.

These findings are similar to those of other studies in this field. In their study, Nickerson and Silverman (1998) believed that defining a unique and competitive strategy was one of the steps of their management strategy, while all the steps in their strategy are parallel to business activity in business intelligence. Also O'Dell et al (1999) in their knowledge management strategy benefited from knowledge management in business methods and technologies. Xu et al (2003) found that understanding the information from the internal environment, which is related to business intelligence and activity in the workplace, is significantly different in different industries and majors. Sternberg (2005) found that he could use the synergy of wisdom with intelligence and creativity for activity. McKenna and Rooney (2005) found a logical love of the world as one of the main concepts of wisdom the manifestation of which can be business activity. Gilad (2008) found that 80% of the activities of employees are related to implementation tasks. Jafari (2010) found that organizational performance was influential in organizational intelligence. Rahimi (2013) found that the wisdom of the managers was important in enthusiasms of employees for work.

## **9. Recommendations**

Based on the findings of this study, a number of recommendations are offered.

It is recommended that this study be repeated in the head office of the University of Applied Science and Technology and its subdivisions, and other universities and higher education centers throughout the country, and also the relationship of the variables of the present study with other organizational variables be examined. Having identified and measured the comprising aspects of organizational wisdom and identifying the present situation of strategic intelligence in the University of Applied Science and Technology, this study helped provide nationwide instruments for other universities and even educational training organizations in the country to be used in measuring the current condition of strategic management and wise management in their organization, and attempt to accelerate the process of creating a wise organization for the sake of dynamism in their organizations, and to benefit the novel models in the new challenges deriving from the changes in human life, and work to live a better human life. In the field of higher education, the findings of this study give the good news of the possibility for empowering the nature and enabling the system of skill-centered higher education, and if it ensures that the results are applicable, and determines to actually use them,

it becomes possible to possess the necessary ability to improve the educational structures in the country, and matches more deeply with the social community and the real educational needs of the country. Thus, it inspires the hope that the government moves in the direction of establishing universities with technology, skill-training and asset production to realize permanent development of knowledge-centered economy.

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