

Standardization of Albrecht's Organizational Intelligence of the Personnel and Principals of the Junior High Schools of the West of Mazandaran Province

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Abstract: In the recent decades, different tests have been prepared to study the different objective and subject aspects of organizational intelligence. Although in Iran Albrecht organizational intelligence tests have been used frequently in researches and diagnostic works, no serious measure has been taken to standardize this test. Considering the role and importance of organizational intelligence and the affecting factors, especially in the educational system of Iran, the studies indicate that no research has been conducted to show the current status of organizational intelligence. This research has been carried out to evaluate the reliability, validity and factors of Albrecht organizational intelligence test in Iranian society. The statistical population of the research is comprised of all principals and personnel of the junior high schools of the western part of Mazandaran province in the educational year 2010-2011. As the population of this research is limited, therefore the total number of the population including 302 persons has been selected as the sample of this population. To study the reliability of Albrecht organizational intelligence test, Cronbach's alpha coefficient has been used and the reliability of the test was calculated equal to 0.968. To study the validity of the test, and which factors form the test, factor analysis has been carried out. The positive correlations among the scores obtained from the questionnaire of Albrecht organizational intelligence test indicate the validity of the questionnaire. The adequacy of sampling is equal to 0.809 and its significance indicates that there is proper condition available for factor analysis. The final statistical properties show that the eigenvalue of 6 factors of the questionnaire of Albrecht organizational intelligence is greater than 1, and the variance in common with variables for 6 factors, explain totally 72.759 percent of the total variance of the variables. The final solution, which is carried out using Varimax rotation based on principal components analysis, it is observed that the questionnaire of Albrecht organizational intelligence is saturated by an overall factor called organizational intelligence, in which the first factor correlates significantly with the question 14, which indicates strategic vision. The second factor correlates significantly with the question 14, which indicates shared fate. The third factor correlates significantly with the question 7, which indicates appetite to change. The fourth factor correlates significantly with the question 7, which indicates heart. The fifth factor correlates significantly with the question 4, which indicates alignment and congruence. The Sixth factor correlates significantly with the question 3, which indicates knowledge deployment.

Key words: Reliability, Validity, Albrecht Organizational Intelligence.

INTRODUCTION

Nowadays, there are many different tests used throughout schools, psychological clinics, industries, armies, etc for the purpose of consulting, psychological studies, selection, giving advice, and finding job. Test is a standardized and an objective tool used to measure samples of the behavior or traits of human beings. Objectivity here means that the methods of completing, and scoring tests, as well as interpreting the results shall be based on definite rules and personal judgments have no impacts on them.

The results of each test are valid only for a group of people or a society that are similar to the sampled individuals, for which the test has been standardized, and have characteristics and variables effective in the results of the test in common with the sampled standardized society.

One variable very effective in the results of tests is cultural factor. The test standardized based on cultural factors of the western societies have no reliability and validity for the individuals and organizations of Iran, unless the questions are changes and adapted with the cultural conditions of Iran, and the results obtained from such tests are studied and analyzed statistically for Iranian samples (Hooman, 2001).

Organizational intelligence is an aspect of organizational behavior and plays an important role in organizations. One of the greatest management challenges in the recent decades is the creation of intelligent institutes, because organizations may like human being fail to use their intelligence (Halal, 2006). How can organizations be more effective and productive? Albrecht (2003) believes that the answer to this question may

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depend on the intelligence of an organization, i.e. an organization should learn to investigate based on the intellectual potential of the personnel employed by it. The complicated nature of organizational individuals requires that the potential of each organization or institute is defined by investing considerable efforts, and even the actual intelligence of an organization is assessed realistically. There may be so many intelligent and motivated individuals of an organization, who may change to inefficient and motiveless people due to working for many years in an organization in vain.

The theory of organizational intelligence aims to assess the intelligence of organizations to recognize their abilities and weaknesses and provide them with necessary solutions prepared based on the obtained results to improve organizational intelligence and finally organizational performance. Such studies help to identify the organizational situations in terms of intelligence i.e. the ability of adapting with environment, perspective, acquiring knowledge, organizational performance and structure, mood, communication and information technology, as well as organizational memory in order to focus on the abilities and plan for removing the weaknesses, and improve efficiency and effectiveness of the organization (Cronquist, 2004).

Organizational intelligence is a new concept in the literature of organization and management. The concept of organizational intelligence has its origin in 1990s, and the theories of knowledge management and organizational learning. In 1992, organizational intelligence has been introduced clearly as a process in a paper titled Organizational Intelligence authored by Matsuda and presented in the International Conference of Economics held in Tokyo. According to the vast studies of the authors of this paper, most researches carried out by the scholars such as Matsuda (1991), Glynn (1996), Halal (1997), Stonhouse and Pemberton (1999), Albrecht (2003), Cronquist Bjorn (2004), emphasized mainly on the definition and evaluation of the status or organizational intelligence, and few researches have been done on the factors related to or affecting organizational intelligence.

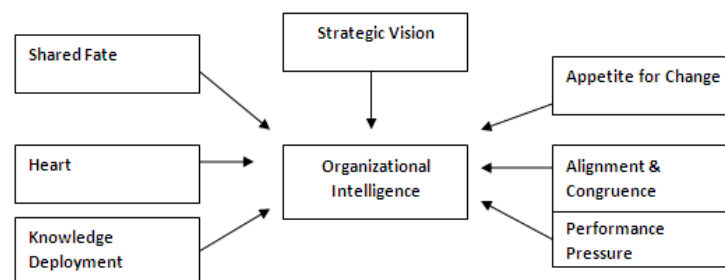
Education is one of the most fundamental social systems, during which an important part of the life of children and juvenile passes. It is expected that this organization take required measure continuously to identify its capabilities and weak points, and improve the quality of processes. In dynamic environments, organizations face a series of unwanted and unforeseen situations, which are hard to monitor in organizations; but, such an organization may apply interrelating patterns among its personnel, technologies, culture and processes to encounter such hard situations. Weick and Roberts introduced these interrelating patterns as collective minds of an organization (Hutchins, 1991); this means that a complex work in an organization is not performed by only one person, rather there is an interrelation among technologies, techniques, and individuals that cooperate to perform such a complex work.

Considering the importance of organizational intelligence, and application of this test based on the conditions of the Iranian organizations and the review of literature, it has been found that different tests have been developed in the past decades to study the different objective and subjective aspects of organizational intelligence. Although the tests of Albrecht's organizational intelligence have been used for research and diagnostic works frequently, no serious measure is taken to standardize these tests. Therefore, it is required that the reliability and validity of the tests used for organizational intelligence are assessed, in order to pave the way for meeting the needs of organizations in this regard.

The researcher aims to answer the following questions by applying the test of Albrecht organizational intelligence on the principals of the junior high school of the western part of Mazandaran province:

- 1- Has Albrecht organizational intelligence test enough reliability?
- 2- Has Albrecht organizational intelligence test enough validity?
- 3- Which factor(s) is Albrecht intelligence test composed of?

For this purpose, the literature of organizational intelligence was reviewed, and those factors affecting organizational intelligence as well as the factors identified by other scholars in non-Iranian organizations have been studied and the conceptual model of the recent research identified by Albrecht (2003) has been presented as follows:



Graph 1: Albrecht Organizational Intelligence ModelResource: Albrecht 2003.

MATERIALS AND METHODS

This research is in nature an explanatory research carried out in from of a survey. The statistic population The statistical population of this research comprised of all personnel and principals of the junior high school of the western part of Mazandaran province in the educational year 2010-2011. The said population consists of 302 members.

As it is important to determine a representative sample volume for the generalization of the results of this research to the population in question, therefore, due to the limitation of the population, the whole members of the said population were selected as the samples of this research. The data required for this research has been collected by a field method. Moreover, library method was applied for the study of different theoretical aspects of the research and viewpoints of the scholars on the subject of the research, as well as the comparison of the results of this research with the results set forth in the literature of the research.

For the purpose of this research, a questionnaire has been prepared that is the result of library studies and based on the components of the standard questionnaire of Albrecht (2003). This questionnaire has been used frequently for management researches, and scored based on the 5-level Likert scale (strongly disagree to strongly agree). This questionnaire contains 49 questions based on the seven skills introduced by Karl Albrecht including "strategic vision" (questions 1 to 7), "shared fate" (questions 7 to 14), "appetite for change" (questions 15 to 21), "heart" (questions 22 to 28), alignment and congruence" (questions 29 to 35), "knowledge deployment" (questions 36 to 42), "performance pressure" (questions 43 to 49).

Finally, Likert scale was replaced by semi-metric scale. The following statistical methods were also used to answer the questions of the research.

- 1- The reliability of the questionnaire has been examined using the coefficient of Cronbach's alpha.
- 2- The principal components analysis (PCA) of factor analysis has been used to determine the structure of organizational intelligence test and its validity.

All methods were carried out used computer software application SPSS.

Analysis:

The data and information obtained from the questionnaire of Albrecht organizational intelligence test taken from the personnel and principals of the junior high schools of the western part of Mazandaran were analyzed using SPSS software. The results have been shown in the following tables.

To answer the first question of the research, i.e. "has Albrecht organizational intelligence test enough reliability", the coefficient of Cronbach's alpha was used and the results have been set forth in the following table 1:

Table 1: The Reliability of Albrecht Organizational Intelligence Test.

Number of Questions	Number of Testees	Cronbach's Alpha Coefficient
49	302	0.968

The analysis shows that the test has a good reliability. The coefficient of Cronbach's alpha equal to 0.968, shows that the reliability of this test is very high. The coefficient of point-biserial correlation of each question with the total score of the test is significant statistically. In case any question is deleted except question 1, the reliability of the test reduces. However, since this percent has been immaterial for the question 1, no question has been deleted and no reverse scoring has been carried out.

Regarding the second question, the positive correlation among the scores obtained from the questionnaire of Albrecht organizational intelligence test taken from 302 personnel and principals of the junior high schools shows the congruent validity of the questionnaire.

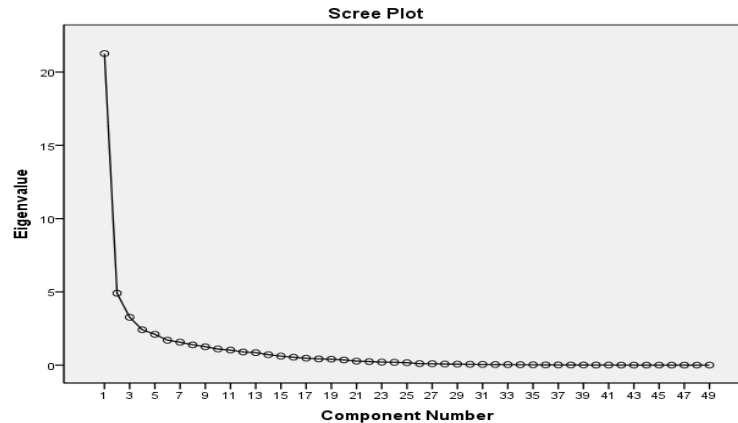
To answer the third question, i.e. "which factor(s) is Albrecht intelligence test composed of?", the method of principal components of alpha factor analysis has been applied. It must be noted that two issues should be studied before factor analysis, they are 1) sampling adequacy, and 2) ensuring that the matrix of correlations used as the basis of factor analysis is not equal to zero in the statistical population. The results of the said tests have been shown in the table 2.

According to the table 2, the value of KMO for the matrix of the correlations obtained from the questionnaire of organizational intelligence has been equal to 0.809. The statistical properties of Bartlett's test of sphericity is equal to 39047874, which is statistically significant even if $p=0.0001$. Moreover, the original output of computer shows that the determinant of correlation matrix is a number other than zero and equal to 0.00000017. These data ensures the extraction of factors.

To determine the factors saturated the questions, three main indicators have been applied: 1) eigenvalue, 2) variance ratio, 3) scree plot

Table 2: Determinant of KMO and Bartlett's Tests, 49-question Questionnaire of Albrecht Organizational

Intelligence		
Factor Analysis		
Determinant = 0.00000017		
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Approx. Chi-Square	.809
Bartlett's Test of Sphericity	Df	39047874
	Sig.	.000

**Diagram 1:** The Rotated Plot of Eigenvalue (scree).

The sloped diagram shows that the first factor plays a significant role in the total variance of all variables and other factors have distinct shares. It must be noted that for the study of the nature of relations among variables, reaching definitions, and naming factors, some scholars introduce the coefficients higher than 0.3 and even 0.4 significant when defining factors, and argue that the coefficient less than these values shall be considered zero (random factor). For the interpretation of factors, the least value of this coefficient has been applied by Jones (1954) equal to 0.30, Hooman (1988) equal to 0.40, Reynolds *et al.* (1988) equal to 0.40. In this research, the least value of the said coefficient has been selected as 0.30.

In the table 3, the statistics obtained from the principal components analysis (PCA), eigenvalues of the extracted factors, the percent of variance explanation of each factor, as well as cumulative percentages.

Table 3: Eigenvalue, Variance Explanation Percent, Cumulative Percentage of Six Extracted Factors.

Factor	Eigenvalue	Variance Explanation Percent	Cumulative Percentage
1	9.396	19.175	19.175
2	8.589	17.529	36.704
3	5.362	10.942	47.647
4	4.467	9.117	56.763
5	4.312	8.800	65.563
6	3.526	7.196	72.759

The final solution of the statistical properties of the questionnaire based on the principal components analysis shows that the eigenvalue of six factors of the questionnaire of Albrecht organizational intelligence is greater than 1, and the variance in common with variables of these six factors explains overall 72.759 percent of the total variance of the variables. Under this circumstance, the first factor with the eigenvalue equal to 9.396 explains 19 percent of the total variance of variables.

The extracted factors were transferred to the new axis using Varimax rotation method. The main matrix resulted from this rotation has been shown in the table 4.

As the simple structure of factors represented in the table 4 shows that the six factors extracted using principal components analysis are rotated by Varimax method. As a result, the following questions correlated significantly with a factor and formed a partial test have been presented:

- 1- The first factor correlates significantly with the question 14, which indicates strategic vision.
- 2- The second factor correlates significantly with the question 14, which indicates shared fate.
- 3- The third factor correlates significantly with the question 7, which indicates appetite to change.
- 4- The fourth factor correlates significantly with the question 7, which indicates heart.
- 5- The fifth factor correlates significantly with the question 4, which indicates alignment and congruence.

- 6- The Sixth factor correlates significantly with the question 3, which indicates knowledge deployment.

Table 4: Matrix of the Rotated Factors based on Varimax Method.

Question	Factor1	Question	Factor2	Question	Factor3	Question	Factor4	Question	Factor5	Question	Factor6
(q31)	.780	(q43)	.763	(q11)	.791	(q1)	.776	(q20)	.823	(q9)	.712
(q39)	.771	(q42)	.723	(q25)	.756	(q3)	.704	(q19)	.805	(q12)	.691
(q44)	.769	(q41)	.718	(q15)	.645	(q2)	.690	(q22)	.681	(q14)	.593
(q29)	.768	(q36)	.698	(q16)	.581	(q6)	.623	(q21)	.651		
(q26)	.726	(q35)	.641	(q17)	.580	(q8)	.603				
(q23)	.723	(q13)	.639	(q10)	.522	(q4)	.559				
(q30)	.707	(q27)	.630	(q7)	.521	(q5)	.486				
(q33)	.687	(q24)	.604								
(q28)	.654	(q40)	.586								
(q45)	.631	(q37)	.565								
(q38)	.624	(q32)	.560								
(q49)	.571	(q48)	.528								
(q18)	.530	(q34)	.479								

Findings and Conclusion:

The findings of this research in relation to the first question of the research (i.e. "has Albrecht organizational intelligence test enough reliability?") provides firstly the difficulty coefficient and point-biserial correlation of the questions. A review of the data shows that there are significant correlations among all questions, no question has been deleted, no reverse scoring has been conducted, and all questions are significant statistically. Cronbach's alpha coefficient confirmed the reliability of the questionnaire (equal to 0.968). This value shows that the subsequent results and calculations are reliable.

The other findings of this research regarding the second question (i.e. has Albrecht organizational intelligence test enough validity?) show that there is a positive correlation between the score obtained from the questionnaire of Albrecht organizational intelligence. This indicates that Albrecht questionnaire can be used to forecast organizational intelligence structure.

To answer the third question of this research (i.e. which factor(s) is Albrecht intelligence test composed of?) factor analysis has been applied. The sampling adequacy of KMO is equal to 0.809, and the significance of Bartlett's sphericity indicates that there are proper conditions for factor analysis. The statistical properties of the questionnaire of Albrecht organizational intelligence also indicates that from this questionnaire, six factors with the eigenvalue greater than 1 have been extracted. The first factor extracted using principal components analysis explains the maximum percent of the total and cumulative variances.

The simple interpretation of the variables provided the following results:

- 1- The first factor correlates significantly with the question 14, which indicates strategic vision.

This means that the essential and important strategies of an organization are to be identified and accepted by all personnel who are directed towards such strategies. Meanwhile the experts and leaders of the organization shall have the opportunity to review and revise such strategies in annual meetings and study continuously the opportunities and threats arising out of environmental factors.

- 2- The second factor correlates significantly with the question 14, which indicates shared fate.

This means that the personnel of the organization shall consider themselves as effective members of the organization, and they shall cooperate in the provision of plans, programs, their implementation, and evaluation with the managers of the organization. As a result, the personnel of the organization gain knowledge about the missions of the organization, and feel sympathy for such objectives. They believe that the success of the organization is like their own success, and cooperate therefore freely with the organization to provide it with ideas and information.

- 3- The third factor correlates significantly with the question 7, which indicates appetite to change.

This means that the personnel of the organization are more flexible and adaptable to environmental changes and can achieve success better. In this organization, the personnel are encouraged to develop innovations and find better solutions for their tasks and duties. The services rendered in this organization changes based on the changes in the demands and needs of the working environment. There are, however, some organizational cultures directed by executive groups changing their own thinking, actions, and reactions to their environment based on specific patterns. This appetite to change paves the way for gaining new experiments and opportunity for using new methods.

- 4- The fourth factor correlates significantly with the question 7, which indicates heart.

The element of heart shows here that there is a will to engage in activities beyond the criteria level. In such an organization, the personnel perform their tasks and duties correctly, and work diligently more than the level expected. Their energy increases permanently. The management and personnel of the organization are considerably interested to work and feel proud of being a member of the organization.

- 5- The fifth factor correlates significantly with the question 4, which indicates alignment and congruence.

This factors means that in an intelligent organization the design of the organization and its structures, systems, methods, processes, policies, rules and regulations as well as bonuses are so that the interference of activities are reduced and the delegation of powers accelerates the works of individuals and groups.

6- The Sixth factor correlates significantly with the question 3, which indicates knowledge deployment.

Nowadays, success or failure of organizations is based on the effective deployment of knowledge, information, and data. The ability to create, transfer, organize, share, and use of knowledge in the complex environment of organizations has become an aspect of essential competition. Organizational intelligence should entail the free current of knowledge obtained through culture. Moreover, there must be a precise balance between the transfer of information and access to such information in some important points that are required. Moreover, the ideas, inventions, and congruent questions must be supported, since the correlation of such questions indicates that such factor should be applied in the organization.

As it has been mentioned, different theoretical models as well as researches have been carried out in the field of organizational intelligence that may have been limited. Although a model for defining and evaluation of organizational intelligence may be very useful, the essential problem faced by a manager is that which factors are effective in this regard. This issue is more important when organizational intelligence of educational institutes and universities are of concern, since universities have a great role in the field of education, research, provision of service, publications, and professional development (Ghurchian, 2000), and has an important status in the leadership of society that provides valid ethical and intellectual frameworks of the future of that society (Senge, 2000). Educational institutes have special organizational characteristics, which distinct this type of organization from other ones, for example the number of beneficiaries, professional bureaucracy (Prejmerean & Vasilache, 2007). It is required also that the properties of learning paradox (Bratianu, 2007) to be prevailed in the field of organizational intelligence and focus gradually on the strategies of development and organizational intelligence.

Finally, it is recommended that this research is carried out in a vast level throughout Iran, using a sample with a greater volume to standardize this scale for the culture of the whole country.

It is also recommended that a research is carried out to study the reliability of this test using other methods of evaluating reliability such as retest method, etc.

It is recommended lastly that other research is carried out to study the convergence validity of the questionnaire.

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