Study of the relationship between cultural intelligence and organizational effectiveness in Esfarayen industrial complex of Iran

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Cultural intelligence structure has been recently introduced in management literature, that is, the ability to work effectively under conditions that its characteristic is cultural diversity. The current study was carried out to examine the relationship between cultural intelligence and organization effectiveness in Esfarayen industrial complex as an organization enjoying cultural diversity. The method for this study consists of descriptive and also a kind of correlation. Statistical sample includes 254 personnel (using Kerjesi and Morgan) working in Esfarayen industrial complex who were in the state of an active employment in 2011. In the mentioned study, a random-stratified method has been used for employees. Research tools included cultural intelligence standardized questionnaires (four factors) which was used to assess the organizational effectiveness, the Parsons Model standard questionnaires (four categories) was also used. The validity and reliability was confirmed by Cronbach test and the results were 0.85 and 0.89, respectively. Research hypotheses of appropriate statistical methods have been tested through SPSS 16 and LISREL 8.54 software. By using Pearson’s correlation coefficient, cultural intelligence relationships and their factors were approved with organizational effectiveness except motivational cultural intelligence; also, LISREL output indicated that, cultural intelligence has an intermediary (indirect) influence on organizational effectiveness as well as occupational-individual factors.

Key words: Cultural intelligence, organizational effectiveness, meta-cognitive, cogitative, motivational, behavioral.

INTRODUCTION

Globalization focuses on a process that people and society can be integrated in a global domain. According to the mentioned definition, globalization is not only an economy-orientated concept, but also it includes political, economical, cultural and social fields (Thomas and Inkson, 2008). A particular feature of globalization that makes a great impact on current organizations is considered as an inclination towards cultural diversity. All these changes depend upon creating different managers’ viewpoints on their personnel and also enjoying some cognitive and behavioral skills for an effective impact on heterogeneous manpower. It is necessary to notice that many managers – who are appeared in their cultural the environment as successful and competent people – may encounter inefficiency when entering a strange environment whereas some adjust themselves to new conditions by changing their cultural environment quite the contrary (Thomas, 2006).

Many organizations related to 21st century are multicultural. This fact causes dynamism for relationships in multicultural environments so that different languages, tribes, policies and other features can appear as potential
sources of opposition and also appropriate working relationships development would face major problems due to lack of real understanding (Triandis, 2006). Such conceptual difficulties, oppositions and rapid growth of international interactions have presented a new concept in cognitive subjects known as "Cultural Intelligence". Cultural Intelligence is the most important tool can be properly used to deal with multicultural situations. Furthermore, it helps us exhibit acceptable behavior towards different cultural components through real and rapid understanding (Naiejii and Abbasalizadeh, 2007).

Also, considering the fact that with more globalization and multinational organizations as well as more cultural diversity, it is essential to acquire knowledge and skills in order to face challenges and requirements of a global society. The result of various environments is culturally that people face values, hypotheses, request and expectations that are basically different from their own. It is believed that cultural intelligence explains that how some people are more skilful than the other ones in managing different environments culturally (Thomas, 2008).

As a modern and developmental domain of research, cultural intelligence is considered as one of the most useful tools to fulfill efficiently duties in environments with diversity and heterogeneity in work force; such intelligence enjoys a special ability and skill that enables one to fulfill his / her duties efficiently in multicultural situations.

But the concept of cultural intelligence as a special type of intelligence was propounded by Earley and Ang, who were researchers of Business School in London, and it appeared as a new theory in the world of management and organizational psychology too. Later, a consortium of the professors of America, England and assessed cultural intelligence systematically and defined people’s capacity for communicating with others (Benton and Lynch, 2009). Today, in global developmental economy, there are many possible methods for efficient management that their usages depend on culture of people under discussion. In fact, for understanding people’s behavior one needs to recognize exactly cultural the environments of work (Javadin, 2004). Many researchers introduce cultural intelligence as an ability to fulfill duties efficiently in different cultural situations (Earley and Mosakowski, 2005; Mac Nab, 2008).

Cultural Intelligence Model has been formed within the four-factor framework (Table 1) which combines different subjects and viewpoints in intercultural intelligence and management. Cultural intelligence has consisted of four qualitative different abilities. However, all four factors are dependent on together. For real effectiveness, managers need all four abilities of cultural intelligence. Merely, emphasis on one of four factors may lead to increase in cultural negligence instead of increasing cultural intelligence because cultural intelligence requires a whole series of adaptable abilities. Four factors of cultural intelligence are: strategy, knowledge, motivation and behavior (Livermore, 2010), which are generally propounded in research as (1) motivational cultural intelligence (2) cognitive cultural intelligence (3) meta-cognitive cultural intelligence (4) behavioral cultural intelligence (Van Dyne et al., 2009).

Meta-cognitive cultural intelligence indicates mental ability to acquire (Ang and Inpen, 2008) and understand cultural knowledge and is defined as cultural awareness of a person when interacting with the others in cultural fields (Ward and Fischer, 2008). People with high meta-cognitive cultural intelligence are consciously aware of preferences and cultural norms of different societies when interacting with. Also, these people try to question cultural assumptions and modify their mental models through relevant experiences that they already gained (Brasilin et al., 2006). While meta-cognitive cultural intelligence emphasizes the high-level cognitive processes, cognitive cultural intelligence indicates cognition of norms, styles and mores in different cultures acquired by personal and educational experiences (Ang and Van Dyn, 2008; Yee et al., 2008). Motivational aspect of cultural intelligence not only includes inner value showed by people when interacting with other cultures, but also contains their beliefs which help them work efficiently in current situation (Li, 2009). The last aspect is behavioral cultural intelligence or practical aspect of structure (Earley et al., 2006) including the ability to exhibit appropriate spoken and unspoken behaviors when interacting with the others in a different context (Van Dyne et al., 2008).

Organizational effectiveness is one of the concepts that attracted great attention in management and it is very important to improve organizational efficacy. Effectiveness is defined as a rate of achievement. In

<table>
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<tr>
<th>Cultural Intelligence Model</th>
<th>Cognitive Cultural Intelligence</th>
<th>Motivational Cultural Intelligence</th>
<th>Behavioral Cultural Intelligence</th>
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<tbody>
<tr>
<td>Meta-cognitive cultural intelligence (Strategy)</td>
<td>Knowledge</td>
<td>(Motivation)</td>
<td>(Behavior)</td>
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<tr>
<td>Awareness</td>
<td>Cultural system</td>
<td>Internal</td>
<td>Verbal</td>
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<tr>
<td>Planning</td>
<td>Cultural norms and values</td>
<td>Outer</td>
<td>Non-verbal</td>
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<tr>
<td>Control</td>
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<td>Efficacy</td>
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other words, it indicates that how much efforts must be made to achieve desirable results (Sinjer, 2007). It means that effectiveness is a quantity for achieving an organization's purposes (Zheng and Yang, 2010). Parsons argued that there are 4 aspects for effectiveness that each one has its own index; consequently, 16 indexes would be propounded:

1. Adjustment: includes ability, adaptation, growth and development.
2. Achieving purposes: includes indexes related to success, quality, getting access to sources and efficiency.
3. Entirety: includes indexes related to satisfaction, situation, communications and antagonism.
4. Endurance: includes indexes related to loyalty, fundamental interests of life, motivation and identity (Baratidoust, 2005).

Effectiveness is one of the main subjects in organizational analyses that can be increased by promoting cultural intelligence of personnel. So, if we want to promote the rate of cultural intelligence of personnel and on the one hand, this causes organizational effectiveness, a complete cognition of effective insights must be firstly studied and also the rate of organizational effectiveness must be taken into consideration considering activities of the organization and then appropriate guidelines must be offered according to the given project. Cultural intelligence can be considerably effective in organizational effectiveness considering its four aspects (meta-cognitive, cognitive, motivational and behavioral). Effectiveness is an important purpose of organizations, groups and people that depends upon different factors such as cultural intelligence which is taken into consideration in this study that is there any relationship between cultural intelligence, its components and organizational effectiveness in Esfarayen industrial complexes or not? Also, does cultural intelligence show indirect influence on organizational effectiveness and occupational-personal factors?

Most previous studies on cultural intelligence have been conceptually carried out, but experimental studies on cultural intelligence are partially conducted because of the modernity of the applied structure (Ang et al., 2007). Studies on management in 21st century present evidence about a positive relationship between intercultural suitability and personal–organizational effectiveness in international business (Hofstede, 2001; Thomas and Inkson, 2003; Tan, 2004; Peterson, 2004).

Van Dyne and Ang (2005) examined relationship between personalities and the mentioned four factors of cultural intelligence among 338 students of business studies and they concluded that there is a significant relationship between conscience and meta-cognitive aspect of cultural intelligence; furthermore, there is a connection between freshness and emotional stability and behavioral aspect of cultural intelligence; also, extroversion has a significant relationship with the aspects of knowledge, motivation and behavior and the most important result is the fact that one of the most important features of the personality is the improvement in gaining experiences which has a positive relationship with all four aspects of cultural intelligence. In other words, it has a positive relationship with the rate of people's ability to accomplish duties effectively in various cultural complexes.

Lugo (2007) indicated that the skills of cultural intelligence correlate with managerial –developmental skills by examining the relationship between cultural intelligence and development of managerial skills. Also, Matear (2009) carried out a study titles “examination of cognitive, cultural, emotional and motivational intelligence” on relative importance of cultural intelligence in homogenous communities of medical occupations in Emirates that affirmed the previous findings of studies indicating that cultural intelligence could predict developmental-managerial skills. Findings reported by Earley and Peterson (2004) also affirm the mention subject in which a combination of four components of cultural intelligence enables everybody to be successful in different cultural the environments. Also, a relationship between personal differences and intercultural adjustment has been taken into consideration. The results indicated that cognitive cultural intelligence and motivational cultural intelligence can be considered as important helpful factors for success in intercultural adjustment (Williams, 2008). Studies carried out by Kazemi (2008) and Delaram (2008) indicated that there is a relationship between cultural intelligence and personnel's performance as well as cultural intelligence and managerial performance of managers related to their obligations.

Moshabaki and Tizro (2009) affirmed the relevant hypotheses in an essay on the influence of stimulating and cultural intelligence on successful managers in global class and also the relationships among such factors in statistical community related to the mentioned studies. It is necessary to mention that the current study will be carried out to examine cultural intelligence at the level of global groups and propounded in multinational organizations for multicultural country of Iran and current groups in an organization with different tribes of a local culture. Considering the previous subject, the general framework of this study has been indicated in Figure 1.

MATERIALS AND METHODS

The methodology for carrying out this study is descriptive – measurable and its type includes correlation within a fieldwork.

Society, sample and sampling

This study contains all personnel of Esfarayen industrial complex north Khorasan province of Iran, including 760 persons such as
managers, experts and workers. According to Morgan and Kerjesi Table, 254 of 760 people of this statistical volume have been determined as statistical sample and selected in random-stratified method. For carrying out this study, the first stage was to get in touch with the relevant organization’s managers. After gaining necessary permission, for being more familiar with personnel and also for obtaining information about the number of the mentioned personnel, the essential measures have been taken. After determining the quantity of sample, the mentioned persons have been selected in random-stratified method and the questionnaires distributed and after answering them in the presence of researchers, the questionnaires have been collected.

Research tool
For carrying out this study, 2 questionnaires have been used on a five point Likert scale so that points 1, 2, 3, 4, 5 have been given for very low, low, middle, high and very high respectively.

Standard questionnaire of cultural intelligence
Revised questionnaire for measuring cultural intelligence offered by Van Dyne and Ang entitled “a twenty-item scale and four-factor of cultural intelligence” has been used that developed by
values higher than 0.7 related to this index show desirable questionnaire through retesting in a group with 33 people. The has been used for each defined structures in the mentioned assessing the reliability of the questionnaire, Cronbach Alpha Index determining relationships between research variables. For analyzing variance and Pearson’s Correlation Test used for deviation. For examining hypotheses statistical method for measuring frequencies, averages, percents and standards has been used. Descriptive statistics method has been used for 0.823 respectively and also for analyzing data SPSS 16 Software organizational effectiveness 0.716, 0.82, 0.805, 0.701, 0.784 and SPSS Software for 4 aspects of cultural intelligence as well as complete the questionnaires) have been distributed among professors in management and essential revisions led by their comments.

Standard questionnaire of organizational effectiveness

Data relate to organizational effectiveness which measured by Cronbach Test by using Parsons Model Questionnaire to obtain validity and reliability that includes 30 questions and 4 categories (adjustment to the environment, achieving the purposes, cohesion and continuance) which the following questions given to each category; questions related to adjustment to the environment are 1, 2, 3, 4, 17, 18, 21, 22, 23, and questions related to achieving the purposes are 11, 12, 13, 19, 20, 29, 30 and questions related to cognitive cultural intelligence, 11 to 15 related to motivational cultural intelligence and 16 to 20 related to behavioral cultural intelligence.

To assess validity and reliability of research tool

Validity of the contents: For achieving this, standard questionnaire of cultural intelligence and Parsons Model standard organizational effectiveness have been given to some experienced professors in management and essential revisions led by their comments.

Reliability: Reliability measured by Cronbach Alpha Index through SPSS Software for 4 aspects of cultural intelligence as well as organizational effectiveness 0.716, 0.82, 0.805, 0.701, 0.784 and 0.823 respectively and also for analyzing data SPSS 16 Software has been used. Descriptive statistics method has been used for measuring frequencies, averages, percents and standards deviation. For examining hypotheses statistical method for analyzing variance and Pearson’s Correlation Test used for determining relationships between research variables. For assessing the reliability of the questionnaire, Cronbach Alpha Index has been used for each defined structures in the mentioned questionnaire through retesting in a group with 33 people. The values higher than 0.7 related to this index show desirable reliability.

Method for implementing the research

270 questionnaires (supposing that some respondents would not complete the questionnaires) have been distributed among personnel and after setting some stages and following the results up repeatedly, the usable questionnaires were returned to the researchers. This number is acceptable considering the volume of statistical community.

RESULTS

The collected data include 15.7% for males and 84.3% for females. Occupational classes of the participants involved three classes: managers, experts and workers that were 6.7, 53.5 and 39.8 percent respectively. Educational degrees of the participants have been classified in four categories from diploma to MA or higher than MA that were 18.1, 26.0, 46.9 and 9.1 respectively in order of the lowest degrees. Also, their work experiences were 1-10 years; 42.9%, 11-19 years; 51.2%, 20-30 years; 5.9% respectively. Places of birth of the participants were in three regions: Esfarayen, inside the province and outside the province 71.3, 6.3 and 22/4%, respectively.

According to Table 3 the possibility value of Pearson’s correlation coefficient between cultural intelligence and organizational effectiveness is 0.26 and test possibility value is 0.010 that is less than 0.05 and about 99% the relationship between variables of cultural intelligence and organizational effectiveness would be confirmed considering the fact that correlation coefficients of test are positive, the mentioned relationship is direct.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach's-α</th>
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<tr>
<td>Cultural intelligence</td>
<td>0.784</td>
</tr>
<tr>
<td>Metacognitive cultural intelligence</td>
<td>0.716</td>
</tr>
<tr>
<td>Cognitive cultural intelligence</td>
<td>0.82</td>
</tr>
<tr>
<td>Motivational cultural intelligence</td>
<td>0.805</td>
</tr>
<tr>
<td>Behavioral cultural intelligence</td>
<td>0.701</td>
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<tr>
<td>Organizational Effectiveness</td>
<td>0.823</td>
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To achieve this, standard questionnaire of cultural intelligence and Parsons Model standard organizational effectiveness have been given to some experienced professors in management and essential revisions led by their comments.
motivational cultural intelligence and organizational effectiveness would not be confirmed. Pearson’s correlation coefficient between behavioral cultural intelligence and organizational effectiveness is 0.141 and its possibility value is zero that is less than 0.024; so, there is a possibility (about 95%) that the relationship between variables of behavioral cultural intelligence and organizational effectiveness would be confirmed.

For examining occupational – personal factors and organizational effectiveness one-sided variance analysis has been used. Extroverted (occupational – personal factors) and introverted (cultural intelligence and organizational effectiveness) variables with relevant indexes have been added to structural equations model. Parameters of this model have been estimated too. Structural and measurement output model has been illustrated in Figure 2.

Examination of coefficients of measurement model estimated in Figure 1 illustrated that most of obtained coefficients are worthy of notice and they are relatively high. This relationship is especially applicable to indexes of cultural intelligence and organizational effectiveness. The lowest coefficient for indexes of personal – occupational factors and especially for native and non-native factors (λ = 0.09) and the highest coefficient for indexes of purpose achievement has been indicated in organizational effectiveness (λ = 0.99).

Table 4 shows the coefficients of direct/indirect effects as well as full model. The results inserted in Table 4 indicate that indirect effects of occupational – personal factors on organizational effectiveness have significant coefficients. Accordingly, sixth hypothesis based on indirect function of cultural intelligence between occupational – personal factors and organizational effectiveness would be confirmed.

**DISCUSSION**

According to findings of this study, there is a relationship between cultural intelligence and organizational effectiveness in the considered statistical community and the relationship between its components and also organizational effectiveness except motivational cultural intelligence is confirmed that highest correlation coefficient is related to meta-cognitive cultural intelligence and organizational effectiveness. In this regard, Van Dyne (2009) considers quantitative development and measurement of cultural intelligence as a vital structure in organizations. He argues that organizational cultural intelligence has a positive relationship with organizational effectiveness and organizational performance. Also, Din reported in his qualitative study that meta-cognitive cultural intelligence is considered as a basic change in skills of social aspect of cultural intelligence and success in management. The considerable point is that in both studies of Van Dyne et al. (2009) and Delaram (2008) motivational aspect of cultural intelligence has no influence on occupational performance. In other words, inclination towards testing other culture and interacting with different cultures has no influence on his occupational performance and it is compatible with current study. But a study on relationship between cultural intelligence and multinational performance, results of positive relationships between all four factors of cultural intelligence and all factors of performance have been confirmed. The findings of Ang et al. (2004) indicated that cultural intelligence can predict occupational performance of managers.

Results reported by Moody (2007) emphasized a linear relationship between personal characteristics and cultural intelligence. Imai considered the influence of cultural intelligence on intercultural discussions between American and western Asian negotiators in which cultural intelligence has been presented as the key factor of effectiveness of intercultural negotiation. Also, exploratory analyses of this study indicate that motivational aspect of cultural intelligence could be stronger to predict than other aspects. This difference can be influenced by different cultural viewpoints. Then,
the relationship between cultural intelligence and its components with organizational effectiveness and relevant categories has been taken into consideration that was like studies on differential relationships between four aspects of cultural intelligence (meta-cognitive, cognitive, motivational and behavioral) and its three outputs of intercultural effectiveness (cultural judgment and decision-making, cultural adjustment and occupational performance in different cultural conditions).

Furthermore, according to the sixth hypothesis based on indirect function, cultural intelligence between occupational-personal factors and organizational effectiveness has been confirmed that Kraven during his study on relationships among social intelligence, stimulating intelligence, cultural intelligence as well as cultural supply found out that cultural intelligence shows a significant indirect influence on social attractiveness, stimulating intelligence, and managerial styles. Also, the results indicated that cultural supply shows a significant influence on cultural and stimulating intelligence too. Delaram (2008) found that there is no relationship between cultural intelligence and occupational performance and also there is no relationship between the rate of cultural intelligence of managers and demographic features (work experience and educational degree).

Suggestions

1. Considering the obtained results of the research, it is suggested that that the authorities must consider the following measures to promote the component of motivational cultural intelligence: To respect other cultures and gradual involvement in cultural complexities, Education targeted on intercultural interactions. Also, it is suggested to consider sufficient and necessary educational programs to improve self-efficiency in order to promote motivational cultural intelligence. Also, it is suggested to attend meetings with foreign diplomats or

Table 4. The coefficients of direct/indirect effects as well as full model.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Full effect</th>
<th></th>
<th>Indirect effect</th>
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<tbody>
<tr>
<td></td>
<td>Standardized parameter</td>
<td>Parameter estimation</td>
<td>Standardized parameter</td>
<td>Parameter estimation</td>
</tr>
<tr>
<td>Cultural intelligence of: occupational-individual factors</td>
<td><strong>0.45</strong></td>
<td><strong>0.43</strong></td>
<td>-</td>
<td><strong>0.47</strong></td>
</tr>
<tr>
<td>Organizational effectiveness of: occupational-individual factors</td>
<td><em>-0.14</em></td>
<td><em>-0.14</em></td>
<td><strong>0.20</strong></td>
<td><strong>0.20</strong></td>
</tr>
<tr>
<td>Cultural intelligence</td>
<td><strong>0.45</strong></td>
<td><strong>0.47</strong></td>
<td>-</td>
<td><strong>0.47</strong></td>
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other culture’s ceremonies, explain important formalities, simulate exercises, continuous interactions at meta-national level and international trips, activity in groups and multinational teams in order to promote behavioral cultural intelligence.

2. Considering the results obtained from minor hypothesis based on indirect function of cultural intelligence between occupational – personal factors and organizational effectiveness, on the other hand, since there is no significant relationship between managers' cultural intelligence and demographic features (work experience and educational degree), we can conclude that considering the above-mentioned factors about personnel’s cultural intelligence, we cannot judge their cultural intelligence; in other words, higher work experience or more specific knowledge has no relationship with cultural intelligence and these factors do not indicate that the mentioned personnel are culturally intelligent.

3. Considering the obtained result from major hypothesis of the research in which there is a relationship between cultural intelligence and organizational effectiveness as well as a role played by cultural intelligence in organizational effectiveness, it is suggested that cultural intelligence can be considered as an effective index in employment, evaluation of performance and promotion of personnel’s efficiency in such organizations in the form of policies of human resources. Multicultural organizations can appoint personnel to the posts with different cultural interactions by using measurement test of cultural intelligence – personnel who enjoy higher cultural intelligence. This measure can prevent imposing costs for enhancing cultural intelligence.

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