

Investigation of the Influence of Organizational Culture Dimensions on Creation of Intellectual Capital

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ABSTRACT

The present research aims to investigate the influence of cultural features on creation of intellectual capital. To this end, Denison's cultural features model (2000) was used. This model has four main features for culture: involvement in work, consistency, adaptability and organizational mission. Questionnaire was used for data collection. 728 companies were selected from companies and institutes located in Tehran Province. Structural equations modeling technique was used for testing the hypotheses. Research hypotheses test showed that all cultural features of Denison's model play role in creation of intellectual capital. Involvement in work has the greatest impact and mission has the weakest impact on intellectual capital.

KEYWORDS: organizational culture, Denison's model, intellectual capital, structural equations modeling

INTRODUCTION

In order to have successful organizations, managers should have special features, abilities and potential competencies and abilities and experiences and socio-communicational skills. In order to have effective management, we must start from goals and managers should rely mainly on their resources and especially human resources in implementation of projects (Rahnama et al, 2011). In any organization, whether a production or a service company, the main factor for survival of the organization is customer, and if an organization fails to attract customers' loyalty will not reach long-term growth (Tavanazadeh & Aligholi, 2014).. In today's volatile competition environment, human capital is an important capital. Industrial countries use productivity to optimize resources and capitals and they have moved the wheels of growth and development by educated people and have done many inventions and innovations. Access to these innovations which have strengthened the economy of developed countries depends on entrepreneurship (Shafae et al, 2012). Today, factors like strong competition in business environment, increase in customers' expectations, globalization, cultural and social issues, restrictions in organizational resources, IT changes, innovation and invention and changes in salaries and occupational skills have motivated organizations. In such an environment, we cannot manage organizations using traditional methods. Acquisition of appropriate knowledge is necessary for effective and useful response to these changes via intellectual capitals (Lynn, 1988; Trillo and Sanchez, 2007).

The method of valuation and measurement of an organization's IC is more and more important because these provide insights into the impact that the measurement may apply on management actions (Dumay, 2009)

Intellectual capital is a source of competitive advantage and is a facto for improvement of economic performance of organizations (Bontis, 2001; Moon and Kim, 2006). Organizational culture is another factor which plays an important role in creation and development of human capital); Sánchez-Canizares et al, 2007; Suciu et al, 2012; Nazem and Mozaiini, 2014.

1980s decade can be considered as the start of studies conducted on organizational culture. Interest in doing studies on organizational culture is resulted from different factors. These factors include: first of all, 1980s is the start of globalization of institutes and businesses; therefore, coordination among employees of such organizations is of great importance. Secondly, in this decade, studies showed that different levels of organizational performance can be related to the type of organizational culture. Third, organizational culture can be considered as a resource for creating stable competitive advantage; because some cultures cannot be copied by competitors easily. Furthermore, other reasons include emergence of Japan's industrial and economic power as an important competitor for USA. Researchers consider cultural differences between these two countries as one of the main reasons for this (Cameron and Quinn, 2006). Considering the role of human capital and organizational culture in contemporary firms, the present research tries to investigate the influence of cultural factors n intellectual capital within organizations.

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Organizational culture

Numerous definitions can be found in the specialized management literature for the term “organizational culture”. However, there has not yet been any definition agreed by consensus and commonly accepted by all authors (Sánchez-Canizares et al, 2007). Organizational culture refers to shared values, assumptions and norms and describes a part of internal organizational environment which is actually a combination of commitments, beliefs and shared values in members ((Schien, 1985). Previous studies indicate that organizational culture (OC) can have a significant influence on the long-term success of organizations (Ajmal and Helo, 2010; Kendra and Taplin, 2004)

In addition, it is a source for stable competitive advantage (Barney, 1991). Because it shapes organizational procedures, unifies organizational capabilities into a cohesive whole, provides solutions to the problems faced by the organization, and, thereby, hindering or facilitating the organization’s achievement of its goal (Yilmaz and Ergun, 2008). Organizational culture is actually complimentary to organizational performance. Organizational culture does not have direct influence on organization but it helps form behaviors of organizational members (Waterman, 1990). If managers’ attempts to change strategies, structures and use new managerial systems are not accompanied by support of organizational culture, they will fail (hedayati, 2006; 51-60).

Intellectual property

Individuals with high intelligence quotient will be successful in today’s world. Such individuals will overcome their lives problems by their intelligence. In organizational world, the conditions are similar. This is important when we admit that smart mechanical instruments are also important in addition to large and creative human resource. Therefore, intelligence is the resultant of active human intelligence and artificial intelligence. Undoubtedly, organizational managers will not have any option but to use these two smart flows (rahnama et al, 2012).

Today, human society has been confronted with scientific, technological and information crises and every person know about this. Since fighting against these crises requires managers’ resolution, it is necessary to pay attention to employees’ creativity in order to cope with scientific and technological retardations. Interest in doing research on creativity started from the second half of the 20th century (Rahnama et al, 2011). Today, organizations pay a lot of attention to their employees because experience has it that as material or the very external needs are satisfied, physiological and internal and physiological needs are also satisfied. Dissatisfaction of these needs reduces an individual’s efficiency and effectiveness (productivity) and alienates employees from their works and reduces tendency to do work (Khoshpanjeh et al, 2012).

In the actual stage of Knowledge Era, enterprises need to gain and maintain their competitive advantage and one of the feasible ways is through their intellectual capital management (Gogan et al, 2014). Galbraithy proposed “intellectual capital” in 1969 to explain the gap between the market and book value of a firm (Chen, et al, 2012). the theory of intellectual capital began to be more present in international public during the 1990s (Pucar, 2012). Intellectual capital can be defined as intellectual resources that have been “formalized, captured and leveraged” to create assets of higher value (Prusak, 1998). In summary, Edvinsson and Sullivan (1996) defined IC as intangible assets, or the value whereby market value exceeds book value, which in turn will enhance organizational value and nurture firms’ competitive advantage (Edvinsson and Sullivan, 1996). IC refers to intellectual material such as knowledge, information, intellectual property and experience that can be used to create wealth (Kannan, Aulbur, 2004). IC describes the hidden value of an organization. This is the set of roots of a tree and fruit quality that can be seen as palpable, tangible result of its actually hidden roots (Edvinsson, 2004).

Intellectual capital is a major component of a company’s value because intangible assets are often regarded as more important than tangible assets (Chen, et al, 2012). The intellectual capital is promoted as an important and necessary factor for organizational survival and maintenance of competitive strength (Draghici, 2013). Empirical studies confirm the existence of strong links between investment in intangibles and in a company’s performance (Demartini, and Paoloni, 2013) In order to create valuable IC, an organization should establish valuable organizational network to link the interdepartmental working team, and also to link the external parties like customers and suppliers to accelerate the company’s value creation (Lu et al, 2014).

Research conceptual model

Denison’s model was used for investigation of relationship between organizational culture and intellectual capital. This model was introduced in 2000. Which was developed using a combination of qualitative and quantitative investigations of organizational culture (Gillespie et al, 2008)

Rooted in earlier works to reveal the functional relationships between culture and organizational outcomes Denison’s model grew out of his efforts to develop an integrative theory of organizational culture that (1) explains how culture relates to organizational effectiveness, (2) identifies a broad set of traits and value dimensions enabling

a fuller understanding of the culture --- Effectiveness relationship, and (3) provides further insights as to the specific processes by which these traits facilitate or inhibit effectiveness(Yilmaz and Ergun, 2008).

This model is based on this point that how organizational culture influences performance.

This framework focuses on four broadly defined cultural traits– involvement, consistency, adaptability, and mission– as key determinants of business performance. Each trait is measured with three sub-dimensions and Each trait is measured with three sub-dimensions and each sub-dimension is measured by five questions on a Likert type scale ranging from 1-5 (strongly disagree to strongly agree). (Denison, 2000; Nazir and Lone, 2008).

Furthermore, we considered three dimensions for intellectual capital: relationship capital, structural capital and human capital (Demartini and Paolini, 2013; Bontis, 1998). Considering the above discussions, research conceptual model was as follows for investigation of relationship between organizational culture and intellectual capital:

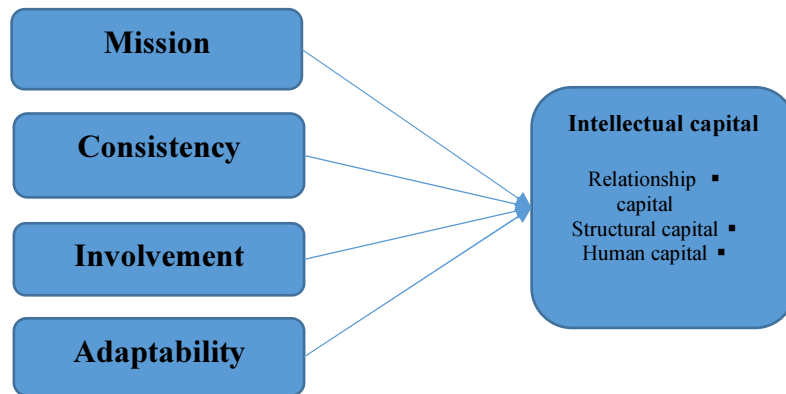


Figure 1. Research conceptual model

Considering the conceptual model of the research, the hypotheses are as follows:

1. mission (a dimension of organizational culture) has a significant influence on intellectual capital.
2. consistency (a dimension of organizational culture) has a significant influence on intellectual capital.
3. Involvement (a dimension of organizational culture) has a significant influence on intellectual capital.
4. adaptability (a dimension of organizational culture) has a significant influence on intellectual capital.

Table 1 provides definitions for concepts in the model.

Table 1. Definition of research variables and dimensions

variable	dimensions	Definition
Cultural features	Involvement in work	These features are measured by three indices empowerment, team-making, and development of capabilities. Executives, managers, and employees are committed to their work and feel that they own a piece of the organization. People at all levels feel that they have at least some input into decisions that will affect their work and that their work is directly connected to the goals of the organization (Denison, 2000)
	consistency	This feature is measured by three indices: fundamental values, agreement and coordination and integration. Behavior is rooted in a set of core values, and leaders and followers are skilled at reaching agreement even when there are diverse points of view (Denison, 2000)
	Adaptability	This feature is measured by three indices: change, customer orientation and organizational learning. Adaptable organizations are driven by their customers, take risks and learn from their mistakes, and have capability and experience at creating change (Denison, 2000).
	Mission	This feature is measured by three indices: strategic orientation, goals and intentions, and vision. When an organization's underlying mission changes, changes also occur in other aspects of the organization's culture. (Denison, 2000)
Intellectual capital	Relationship capital	Relational capital (RC) is found in the knowledge within organizations concerning outside entities, whether customers, suppliers, vendors, operational partners, research partners, regulators, community groups, or any other external relation or collaborator. Firms with numerous or strong outside relationships possess high relational capital (Erickson, and

Rothberg, 2009).	
Human capital	Human capital (HC) refers to individual knowledge, specifically about how to perform one's job. As workers and managers gain experience, obtain more education and training, or otherwise improve their job-specific knowledge, their human capital increases. Organizations with a highly skilled workforce hold considerable human capital (Erickson, and Rothberg, 2009).
Structural capital	Structural capital (SC) is more embedded within the organization itself, in IT systems, in corporate cultures, or in structural, persistent aspects of the entity that go beyond specific individuals (Erickson, and Rothberg, 2009).

MATERIALS AND METHODS

The questionnaire

Questionnaire was used for data analysis. Five-point Likert scale was used for measurement of questions from “completely disagree” to “completely agree”. Questions used for organizational culture were extracted from Denison’s research (Denison, 2000). Furthermore, questions for evaluation of intellectual capital were extracted from Bontis’s research (Bontis, 1998). After preparation of the questionnaire, 30 questionnaires were distributed among customers as pretest. Cronbach’s alpha was used for investigation of reliability of the questionnaire. The results showed that Cronbach’s alpha for all variables and questionnaire were above 0.7. furthermore, the validity of the questionnaire was also verified by experts. Therefore, the questionnaire had appropriate reliability and validity for being distributed among population members.

Sample

Statistical population of the research included all active companies and organizations in Tehran Province. Data were collected in two stages. First, the questionnaires were sent to the companies via email. In this stage, 136 questionnaires were returned and in the next stage, we referred to active companies in industrial estates directly and collected data. In the end, research sample was made up of 278 companies.

Data analysis and hypotheses test

Structural equations modeling technique was used for research hypotheses test. This is a statistical modeling technique which embraces other techniques like multivariate regression, factor analysis and path analysis. Its main emphasis is on latent variables which are defined by observable variables. Since this method analyzes relationships among variables, it is a reliable method in studies. In this method, we look for verification of relationships among latent variables (involvement in fashion, personal features, positive feeling and impulsive purchase) considering the collected data. Structural equations model has two sections: 1. Measurement model and 2. Structural model. Measurement model links a collection of observable variables to latent variables and in contrast, structural model links latent variables via a collection of direct and indirect relationships. LISREL software was used for doing calculations of structural equations modeling (version 8.54). an important point which must be regarded in structural equations modeling technique is fitness of the model for investigation of relationships. This can be evaluated by fit indices which are provided in LISREL output. Table 2 provides fit indices for the model in this research.

Table 2. Model fit indices

indices	Allowable range	Calculated numbers
Kai-squared over df	$\chi^2 / df < 3$	2.12
P value	P value < 0.05	0.0000
Root mean square error approximation	RMSEA < 0.08	0.064
Fit index	Above 0.9	0.93
Comparative fit index	Above 0.9	0.96
Normalized fit index	Above 0.9	0.94

As it can be seen in table 2, all fit indices are in their allowable limits (kai-squared over df=2.12, p value is equal to 0.00, RMSEA=0.064, goodness of fit index is equal to 0.93 and comparative fit index is equal to 0.96 and normalized fit index is equal to 0.94). Therefore, the model is fit enough and we investigate research hypotheses in the subsequent sentences.

In order to investigate research hypotheses, we used LISREL software calculations in two states: research model in standard state (figure 2) and research model in significance state (figure 3).

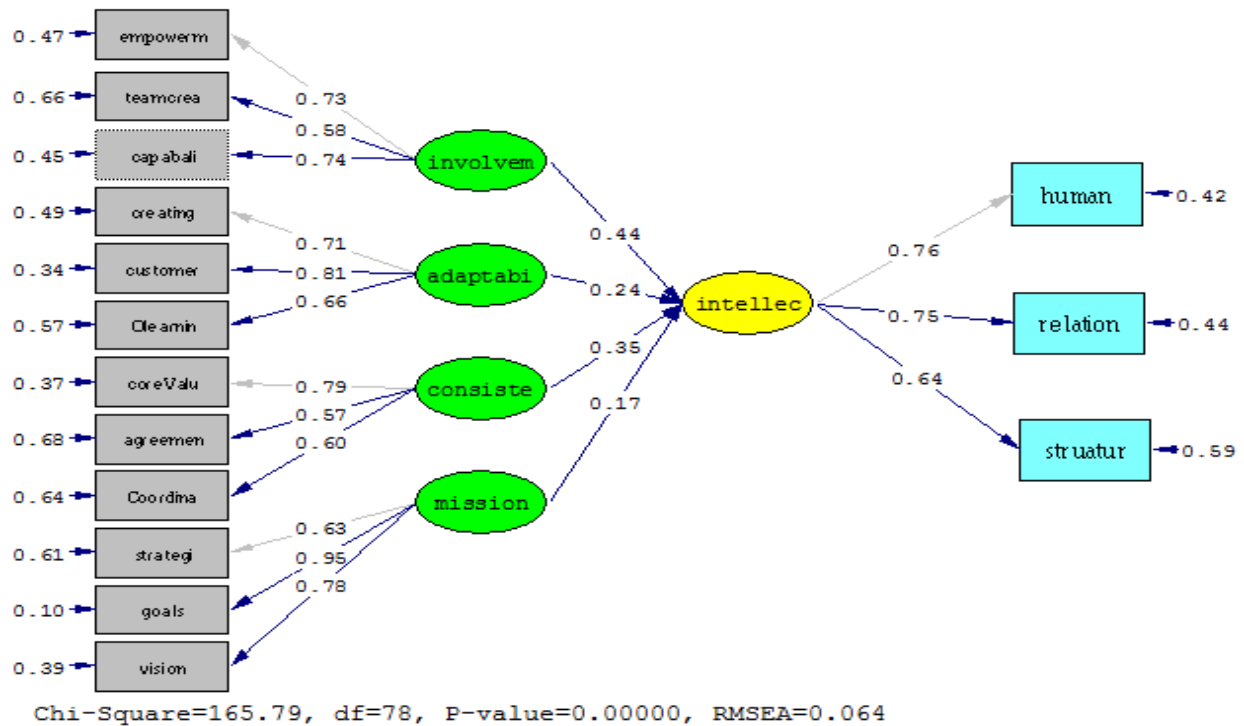


Figure 2. research model in standard state

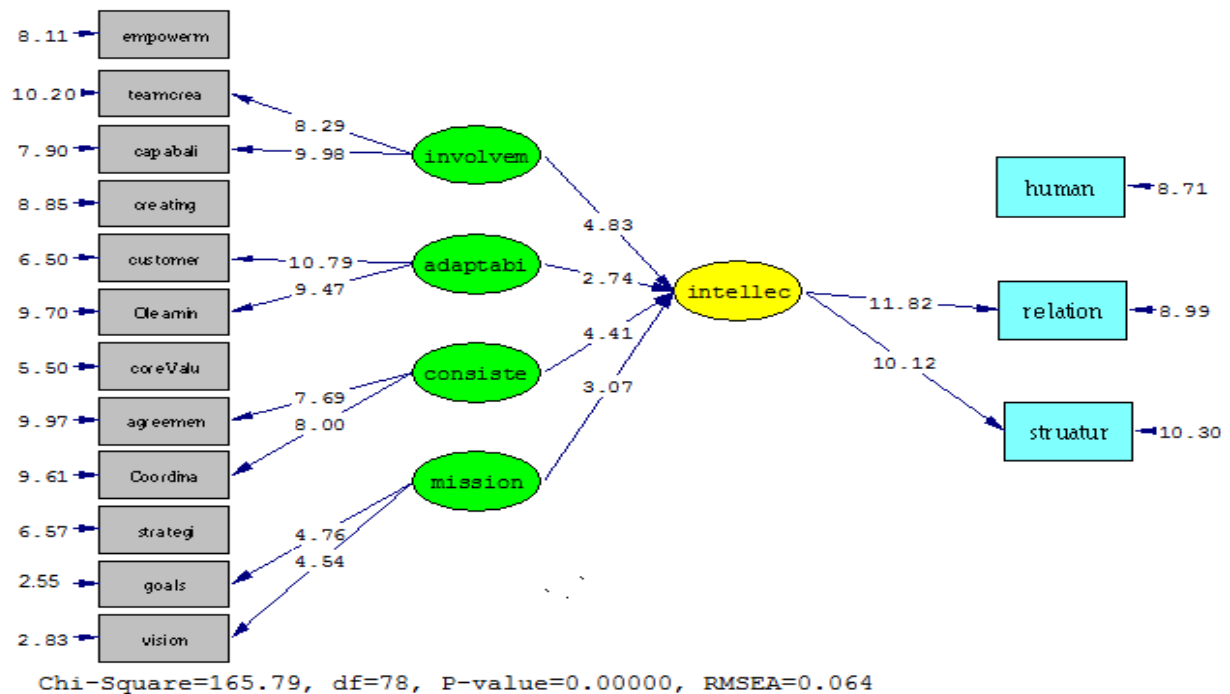


Figure 3. Research model in significance state

Considering the research model in significance and standard states, the results of the hypotheses tests can be provided in table 3.

Table 3. Summary of research hypotheses tests

hypotheses	Significance number(T)	Path coefficient (standard)	result
Involvement---intellectual capital	4.83	0.44	Supported
intellectual capital --- adaptability	2.74	0.24	Supported
intellectual capital --- consistency	4.41	0.35	Supported
Mission---intellectual capital	3.07	0.17	Supported

Considering the fact that certainty level is equal to 0.95 for all hypotheses, all hypotheses which have significance numbers out of (-1.96, +1.96) interval will be supported. Table 4 indicates that all hypotheses are supported. Furthermore, involvement in work has a standard factor loading equal to 0.44 and has the maximum impact size on creation of intellectual capital. In contrast, organizational mission with a factor loading equal to 0.17 has the minimum influence size on creation of intellectual capital. The calculated R^2 for influence of the four cultural features was equal to 0.81. this indicates that 81% of variance in intellectual capital can be explained by the four cultural features.

DISCUSSION AND RECOMMENDATIONS

The present research tries to investigate the influence of cultural features on creation of intellectual capital. In this research, Denison's cultural features model (2000) with four main cultural dimensions was used. Investigations showed that all four cultural dimensions had significant impacts on creation of intellectual capital. After that, consistency, adaptability and organizational mission had the greatest impacts on creation of intellectual capital. The results of the present research can be useful both for practitioners and academics. The present research is a unique research which investigated the influence of cultural features of Denison's model (2000) on intellectual capital. Intellectual capital is one of the main organizational assets. Regarding involvement in work, it is recommended that organizations try to promote their employees' knowledge and skills, individuals' access to necessary information, make use of team work and methods like job rotation and occupational development. Furthermore, regarding development of organizational cultural features, it is recommended that organizations consider ease of coordination among different units for doing projects, increase information trade among different organizational units and converge employees for agreeing on way of doing works. Regarding adaptability, management is recommended to consider the followings: formulation of flexible work methods and ease of change if necessary, creation of an appropriate system for responding to changes in business environment and reflection towards competitors' actions, acceptance of customers' advices and attention to organizational learning as an element of daily affairs and rewarding members for risk-taking and innovation. Regarding mission, senior managers are proposed to clarify corporate strategic path, create unanimity on organizational goals and strategies, follow up progresses at works persistently, investigate the influence of vision on employees' motivation and establish ambitious but real goals by senior managers and employees' support.

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