Designing and Evaluation the Trihedral Model of Knowledge Management Feasibility

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A R T I C L E  I N F O
Keywords:
Culture
organizational knowledge creation
knowledge conversion (SECI)
organizational effectiveness
National Iranian Drilling Company

A B S T R A C T
Organizational culture could considerably cause the development or hindrance to success of knowledge management practices, but however, there is only a little acquaintance regarding participation or prohibition of organizational culture in executing knowledge management. Hence, this investigation is aimed to identify appropriate cultural and social bases in deployment of an effective knowledge management system in in National Iranian drilling Company, intending the empirical examination of conceptual framework for evaluating the relation between organizational culture, knowledge creation process and organizational effectiveness. A questionnaire and also statistical analysis methods are used through SPSS.18 and LISREL.8/5 software programs, for investigating the relations between the variables. The analytical results of the questionnaire showed that different organizational cultures have positive and significant relations with knowledge creation and organizational effectiveness, and the knowledge conversion process (SECI= socialization, externalization combination, internalization) is totally intermediating the organizational culture and effectiveness. Moreover, the research results showed that adhocracy culture has the greatest role in developing and improving an effective knowledge management system, and existence of an innovating and entrepreneurial culture is essential for knowledge conversion and creating a new science.

This study was supported by the National Iranian Drilling Company (NIDC).

Introduction

What do organizations managers and leaders mean, in your opinion, when they refer to the phrase “organizational effectiveness”? If you are looking for a suitable answer to this question, you should definitely be able to define the concept (Gold, 1998). Your definition of effectiveness depends on the type of interpretation you have from effectiveness and your views regarding the world of being (Malby, 2007). Generally speaking, organizational effectiveness could be expressed as “the degree to which an organization realizes its goals” (Zheng, Yang & McLean, 2010). As a whole, organizational effectiveness includes consequences such as improving participating effects, commercializing new products and better capability in forecasting market variations (Lee & Sukoco, 2007). Knowledge management is also an approach that has recently been emerging for dealing with business challenges, to increase the efficiency and effectiveness of main business processes, while simultaneously incorporating continuous innovation. Knowledge creation is not only a key first step in most knowledge management initiatives, but also has far reaching implications on consequent steps in the km process, thus making knowledge creation an important focus area within knowledge management. Currently, different theories exist for explaining knowledge creation. These tend to approach the area of knowledge creation from either a people perspective-including Nonaka’s knowledge spiral, as well as Spendier’s and Blackler’s respective frameworks-or from a technology perspective-namely, the KDD process and data mining (Wickramasinghe, 2006, 326).

Ikujiro Nonaka and Hirotaka Takeuchi presented organizational knowledge creation theory in 1995, in their famous book “knowledge-creating company: how Japanese companies create the dynamics of innovation” that is one of the mostly considered books in knowledge management literature (Ichijo & Nonaka, 2007, 18). Nonaka et al. (2006) define organizational knowledge creation as “the process of making available and amplifying knowledge created by individuals as well as crystallizing and connecting with an organizations’ knowledge system” (Jannhonen & Johanson, 2011; Von Krogh, Nonaka & Rechtsteiner, 2012); and believe that the process of interaction between explicit and tacit knowledge is the source of knowledge creation (Nonaka, Toyama & Hirata, 2008, 18). They called this interaction as “knowledge conversion”, by which the quality and quantity of explicit and tacit knowledge will be developed. There are four steps in knowledge conversion: from tacit to tacit, from tacit to explicit, from explicit to explicit, and from explicit to tacit. These four steps are called socialization, externalization, combination and internalization, and they cover the knowledge creation process (Gottschalk, 2005, 21). Culture is important in knowledge creation, because, “a good part of our knowledge has been learned as culture from older
generations” (Bratiana & Orzea, 2010). Ouchi (1981) defines organizational culture as an organization’s operating philosophy (Knapp, 2010) and surely, the organization’s cultural environment will play a crucial role in determining what happens to knowledge management in organizations (Dalkir, 2005, 178). Indeed, one of the important pre-condition for effective knowledge management is organizational culture (Tahir et al., 2010) and effectiveness of knowledge management is placed at the heart of organizational performance and empowering organizations for understanding human capital values (Davidson & Voss, 2002). Empirical evidences indicate that culture as conceptualized by competing values framework (CVF) influences an organization's effectiveness (Gregory et al., 2009). Hence, before dealing with execution of knowledge management, organizations require analysis of organizational culture (Ribiere & Roman, 2006). If an organization understands its culture type, it can consider the degree of fit required between its knowledge management practices and culture for a given business environment. In addition, the organization can create a culture that promotes knowledge sharing which is important to its success (Jones, 2009; Chin-Loy & Mujtaba, 2007). Although by affecting the state of learning by members and knowledge sharing, organizational culture supports knowledge management. It is astonishing that organizational culture is recognized as the main obstacle of knowledge management (Gray & Densten, 2005). Thus, by the aim of identifying proper culture basis for deploying an efficient knowledge management and knowledge creation system in National Iranian Drilling Company, this research tries to analyze the relations between organizational culture, knowledge creation process and organizational effectiveness.

Research Theoretical Framework

The theoretical basis of this research is according to “the general theory of action”, presented by Parsons and Shils (1951). The selected models for this research are the competing culture framework, knowledge conversion model (SECI) of Nonaka and Takeuchi (1995) and effective competing values framework, each of which rely on Parsons Framework. To follow, a description of general theory of action and the related models is presented and it is mentioned that how parsons theory is used as a principle for expressing the conceptual relations between the three constructs.

Parsons’s General Theory of Action

According to Parsons and Shils theory (1951), the function of any system is a complex of activities towards meeting the needs of the system. Parsons and Shils analyzed the functions and needs of a system along two dimensions. The first dimension focuses on the situation of those needs. In the other words, whether they deal with the system’s relation with its environment (external) or with its internal organization. The second dimension differentiates between needs dealing with the system’s goals (ends) and those focusing on means used to reach those goals. By overlaying these two dimensions, Parsons and Shills determined that four functions, which they called functional prerequisites, must be present in any system of action for it to survive. These four functional prerequisites are carried out by four subsystems of action, as follows: 1. Adaptation (A) emphasizes on compatibility of the organization with the environment and environment compatibility with organizational requirements. 2. Goal attainment (G) emphasizes on determining the goals and collecting required resources and energy to achieve the goals. 3. Integration (I) expresses on creating unity and faith and determination of permissible limits of action (assigning the limits). 4. Latency or pattern maintenance (L) expresses the creation and maintaining culture, values, manners and ideologies (Ba, 2004). Parsons uses the abbreviations AGIL for his model and states that by using AGIL in the society, the related social units, such as organizations, could be classified according to their social functions (Rangriz & Mehrabi, 2011). Classification of four functional prerequisites is presented, according to (internal-external), (means-ends) dimensions, in a pattern with four different function in fig. (1).

![Fig (1). The functional paradigm of systems of action (Hamilton, 1983; Ba, 2004; Bakhshizadeh, 2011)](image)

Cultural Competing Values Framework

Competing values framework (CVF) is based on Parsons Framework (fig.2). This model is developed, according to Quinn and Rohrbaugh model (1983), for organizational analysis and focuses on organizational effectiveness. The mentioned model has two different criteria, emphasizing on competing values: (a) attention basis (external-internal) and (b) structure (stability-flexibility). When these two criteria are

![Diagram of Cultural Competing Values Framework](image)
used for organizational culture, they create a matrix with four sections, each of which shows a specific type of culture: clan, adhocracy, hierarchical and market. Each type of culture emphasize on specific tools and goals (Ba, 2004). Cameron and Quinn describe different types of organizational culture, as follows:

Clan culture: the organization with this type of culture requires flexibility, focusing on internal environment. Employees believe that a clan organization is a friendly place for working that the leaders in it act as a coach or father to develop morals and the unity of the workers (Cameron & Quinn, 2006). The dominated values of this culture include teamwork, honesty, participation and development of workers. The focus of the organization is on developing a human working environment, in which participation, commitment and faith of the employees are facilitated (Lawson, 2003).

Adhocracy culture: the organization with such a culture emphasizes on external environment, requiring flexibility and practical freedom of individuals. The basis of adhocracy is on temporary, specialized and dynamic elements. The dynamic environment is entrepreneurial, initiative and follows individual independence. The leaders are inspiring, innovating and admitting risks, and the organization is formed according to commitment to innovation. The emphasis is on pioneering technological growth and obtaining new resources. The organization success is measured via obtaining exclusive products or services (Xie, 2009).

Market culture: the organization with this type of culture expresses on external environment and requires stability and control (Jones, 2009). Market culture is the culture of inferring organizations with the main concern of execution of the job. The leaders are strict, serious and goal seeking and compete with producers and competitors. The organization is formed according to emphasis on victory and its long term focus is on competing actions and achieving defined and measurable aims (Chin-Loy, 2003).

Hierarchical culture: the organization with such a culture requires stability and supporting supervision, focusing on internal environment of organizations (Jones, 2009). Hierarchical culture describes bureaucratic organizations, emphasizing on regulations, structures, policies and approaches and domination hierarchy is well defined in them (Mayfield, 2008). Usually, large organizations and governmental institutes show this type of culture in their structure (Xie, 2009).

The Four different cultural types are associated with Parsons’s four functional prerequisites as follows: (a) market culture with Goal attainment, (b) adhocracy culture with adaptation (c) clan culture with pattern maintenance, and finally (d) hierarchical culture with integration.

**Organizational Knowledge Creation**

Nonaka and Takeuchi’s knowledge conversion model (1995) is based on the general theory of action which selected by Parsons and Shills (1951), for analyzing knowledge management. The knowledge conversion system includes four sub-systems that support knowledge
creation (fig.3). Externalization is the main process of knowledge creation that by which the tacit knowledge is transformed to explicit knowledge, i.e. in the form of metaphors, comparisons, concepts, assumptions or models (Dalkir, 2005, 54). In the socialization subsystem, people deal with exchanging experiences and mental patterns and transfer of technological knowledge by social communications within the organizations (Waltz, 2003, 71). The sub-system of combination includes the process of collecting the existing explicit knowledge as a systematic knowledge (Nonaka, Umemoto, & Senoo, 1996). In the internalization subsystem, the created explicit knowledge, being in common in all over the organization is transformed to tacit knowledge in internalization process (Nonaka et al., 2008). Each of the four sub-systems of the model of knowledge conversion is related to the functional prerequisites of Parsons, such that (a) combination (b) externalization (c) socialization and (d) internalization are related to goal attainment, adaptation, pattern maintenance and integration, respectively.

**Effectiveness Competing Values Framework**

The framework of effectiveness competing values is, as the knowledge conversion model, based on Parsons Framework. After the proposal for a comprehensive list from the fields used from 1980 in evaluating organizational effectiveness, this framework was developed according to a multilateral comparative technique, in experimental approach. The effectiveness fields are collected in four groups, divided according to two horizontal (external-internal) and vertical (stability-flexibility) criteria (Cameron, 2005). When the two criterion are together, they form four groups that each one present a separate set of organizational effectiveness models (human relations, open systems, rational goals and internal process model) (fig.4). The human relations model expresses flexibility and improving correlation and employees' moral. The open system model emphasizes flexibility as a tool to attain resources from the environment. The rational goal model refers to planning for maximum productivity and eventually, the internal process model emphasizes on control via information management to reach stability (Baker et al., 1997). All the four sub-systems from the effectiveness values framework that is related to Parsons functional prerequisites, such that (a) rational goal, (b) open system (c) human relations and (d) internal process are related to goal attainment, adaptation, pattern maintenance and integration, respectively.

**The Relation between Organizational Culture and Knowledge Creation**

Analysis of previous research shows that there are a numerous theoretical and experimental evidences about the relation between organizational culture and knowledge creation. For example, Karppinen (2006) states that cultural knowledge creation affects via the
patterns related to language and communications (Karppinen, 2006). According to Nonaka and Toyama (2003) tacit knowledge is formed socially and hence the social, culture and historical concepts of knowledge are important (Nonaka & Toyama, 2003). In accordance with competitive values framework, the results of the research by Suppiah and Sandhu (2011) showed that different types of organizational cultures could be effective on the behavior of sharing tacit knowledge (Suppiah & Sandhu, 2011). Tseng (2010) and Tseng (2011) demonstrate that hierarchical culture affects knowledge management actions, acting as an intermediate for conversion of knowledge management processes (Tseng, 2010a; Tseng, 2011). Also, Gray and Densten (2005) investigated the integration of Cameron and Quinn model of organizational culture, as well as the model of knowledge creation of Nonaka and Takeuchi and their results indicated the conceptual integration of these two models (Gray & Densten, 2005). Similarly, Rai’s theoretical research (2011) assessed and confirmed the justified competitive values framework and SECI knowledge creation (Rai, 2011). The following hypotheses could be accordingly considered:

\[ H_1: \] There is a positive and significant relation between organizational culture and corresponding knowledge creation states.

\[ H_2: \] There is a positive and significant relation between the clan culture and knowledge socialization.

\[ H_3: \] There is a positive and significant relation between adhocracy culture and knowledge externalization.

\[ H_4: \] There is a positive and significant relation between market culture and knowledge combination.

\[ H_5: \] There is a positive and significant relation between hierarchical culture and knowledge internalization.

The Relation between Organizational Culture and Effectiveness

There are numerous experimental evidences regarding knowledge creation process and organizational effectiveness. Also the intermediate role of knowledge management activities about organizational culture and effectiveness has been investigated, extensively. For instance, Tseng empirical research (2010) showed that different types for organizational culture (adhocracy, clan and hierarchical cultures) have positive and significant relation with knowledge conversion (SECI) and promotion of companies’ performances (Tseng, 2010b). The results of the research by Zheng, Yang and Mclean (2010) indicated also that knowledge management has the fully intermediate role between organizational culture and effectiveness (Zheng, Yang & Mclean, 2010). Also the studies by Smith (2006) based on Gold et al. model (2001) indicated that knowledge ultra-structural potentials (technology, structure and culture) and knowledge process potentials (knowledge application, attaining knowledge, knowledge conversion, maintaining knowledge) could significantly affect the organizational effectiveness. Gold et al. (2001) stated that knowledge ultra-structure potentials are the required prerequisites for effectiveness of knowledge management potentials and knowledge management effectiveness could be an introductory to organizational effectiveness (Smith, 2006). Hence, the following hypotheses could be considered:

\[ H_6: \] There is a positive and significant relation between the states of knowledge creation and their corresponding organizational effectiveness models.

\[ H_7: \] There is a positive and significant relation between knowledge socialization and human relations models.

\[ H_8: \] There is a positive and significant relation between knowledge externalization and open system models.

\[ H_9: \] There is a positive and significant relation between knowledge combination and moral target models.

\[ H_{10}: \] There is a positive and significant relation between knowledge internalization and internal process models.

The Relation between Organizational Culture and Effectiveness

Conceptually there is a strong relation between organizational culture and effectiveness. According to Schneider (1995), organizational culture could provide conditions for determination of internal effectiveness. Culture determines that performance is effective or otherwise, and even what is meant by effectiveness (or ineffectiveness) in an organization (Kwantes & Boglarsky, 2007). Empirical evidences show that culture affects the organizational effectiveness, as it is conceptualized according to CVF (Gregory et al. 2008). In this case, the results of the research by Fey and Denison (2003) showed that there is a strong relation between organizational culture and effectiveness (Fey & Denison, 2003). Ogaard et al. (2005) stated also that culture may have a considerable effect (indirectly) on performance (Dawson, Abbott & Shoemaker, 2011). In addition, the research results of Mathew (2007) indicated that different organizational cultures have significant effects on productivity (Mathew, 2007). Therefore, the following hypotheses could be considered:

\[ H_{11}: \] There is a positive and significant relation between organizational culture and the models of their corresponding organizational effectiveness.

\[ H_{12}: \] There is a positive and significant relation between clan culture and human relations models.

\[ H_{13}: \] There is a positive and significant relation between adhocracy culture and the models of open system.

\[ H_{14}: \] There is a positive and significant relation between the market culture and rational goal models.

\[ H_{15}: \] There is a positive and significant relation between hierarchical culture and the model of internal process.

Research Conceptual Model

The conceptual model of the research provides a general view of the relations between organizational culture, knowledge creation process (SECI) and organizational effectiveness, obtained according to the main Parsons prerequisite items (fig.5). It should be noted that the smallest resource unit, within the framework that Parsons has contributed for analyzing human behavior, is the unit of “act” that is the most
primitive act of human beings, and is the basis for larger systems actions. The "act" unit includes four main factors, forming the base of all social actions: (1) an actor, (2) an end or goal toward which the action is oriented, (3) a situation (that is formed by two factors: means and conditions), and (4) a normative orientation that are based on the norms and values of the actor and the guide his or her behavior. When there are two or more actors, the unit of acts is organized in the direction of mutual action forming the social action (Trevino, 2001).

Regarding the present research, an organization presents a set of actors intending to reach the target of effectiveness. The actors are conducted according to their own manners and values, producing knowledge creation and organizational culture blocks. According to Parsonsian framework, any of the independent sub-systems of knowledge creation and organizational culture could be related to a system, categorized into four sub-systems, by themselves.

![Conceptual model of the research](image)

**Research Methodology**

The present research is in compliance with applicable goals, based on collecting data and is regarded as a descriptive type of research, and is of correlation type, regarding the research variables. It is definitely based on structural equation modeling (SEM). According to the priorities Of National Iranian Drilling Company, this research is based on successful implementation of an efficient knowledge management system and the employees and managers of that company were selected as the statistical population. The statistical population is consisting of 441 employees and 53 managers of that company having associate degrees or higher degrees. According to Krejcie and Morgan table and the appropriate random classification sampling method, 205 employees and 45 managers are selected as samples. The collecting data tool is a questionnaire, having been collected partially by mid-2011. As a whole, 250 questionnaires were distributed and 209 valid questionnaires were collected (n=209). The questions in the questionnaire are divided into two categories of general and specialized questions. The general questions include questions about demographic characteristics of the responding people. Specialized questions are also given by considering knowledge creation, organizational culture assessing instrument (OCAI) and organizational effectiveness that are according to five-point likert-type scale. SPSS.18 (PASW) statistical software has been used to determine the reliability of the mentioned questionnaires by cronbach’s alpha technique. In table 1, the number of presented items is defined for measuring each latent variable and the cronbach’s alpha coefficient of each variable.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Type</th>
<th>Source</th>
<th>N Of Items</th>
<th>Cronbach's α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Culture</td>
<td>Independent</td>
<td>Cameron &amp; Quinn (1999)</td>
<td>24</td>
<td>0.88</td>
</tr>
<tr>
<td>Knowledge Creation</td>
<td>Mediator</td>
<td>Choi &amp; Lee (2002)</td>
<td>19</td>
<td>0.89</td>
</tr>
<tr>
<td>Organizational Effectiveness</td>
<td>Dependent</td>
<td>Quinn &amp; Rohraugh (1983)</td>
<td>8</td>
<td>0.86</td>
</tr>
</tbody>
</table>

As observed in the above table, cronbach’s alpha coefficient for organizational culture rate is 88%, the rate of knowledge creation is 89% and the rate of organizational effectiveness is 86% that indicate the reliability of research instruments. Also to test the validity of the questions, the two methods of content validity and Factorial validity were used. To measure the validity of the contents of the questionnaire, the views of experts, scholars and specialists were used and it was found that the questionnaire measures the same views as them. The testing of factors validity was also done by the aid of Confirmatory Factor Analysis (CFA) and by the use of LISREL software. It is to note that for confirming the measuring model of factor analysis, its indices should be appropriate and secondly the t-value of its standard coefficient should be significant. If the chi-square ($\chi^2$) shows $p<0.05$, the ratio of $\chi^2$ to the degree of freedom is less than 3, RMSEA is less than 0.08 and goodness of fit index (GFI) and adjusted goodness of fit index (AGFI) are greater than 90%, it can be concluded that the model is fit. If the t-value is higher than 1.96 or less than -1.96, it will be significant at the 95% level. By LISREL results in table (3) it can be seen that all the 3 measuring models meet the mentioned conditions and are suitable models. These results indicate that the questionnaires of this research have proper validity and reliability. Analysis of the data is done by descriptive statistics and inference (parametric) method. To analyze demographic characteristics, the descriptive statistics is used. The statistical sampling situation regarding demographic characteristics is shown in table (2).
Table (2). The state of statistical samples on demographic characteristics

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Band/Category</th>
<th>Percentage (%)</th>
<th>Demographic Characteristics</th>
<th>Band/Category</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Man</td>
<td>79.2</td>
<td>Level of Education</td>
<td>Associate</td>
<td>46.7</td>
</tr>
<tr>
<td></td>
<td>Woman</td>
<td>20.8</td>
<td></td>
<td>Bachelor</td>
<td>47.6</td>
</tr>
<tr>
<td>Age</td>
<td>20-30</td>
<td>29.2</td>
<td></td>
<td>Master</td>
<td>5.7</td>
</tr>
<tr>
<td></td>
<td>31-40</td>
<td>40.1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>41-50</td>
<td>22.2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>≥ 51</td>
<td>8.50</td>
<td>Work Experience</td>
<td>≤ 5</td>
<td>22.2</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>6-10</td>
<td>30.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11-15</td>
<td>18.4</td>
</tr>
<tr>
<td>Position</td>
<td>Employee</td>
<td>83.0</td>
<td></td>
<td>16-20</td>
<td>16.0</td>
</tr>
<tr>
<td></td>
<td>Manager</td>
<td>17.0</td>
<td></td>
<td>≥ 21</td>
<td>12.7</td>
</tr>
</tbody>
</table>

Research Findings
In this section, it is dealt with describing the findings obtained from confirmatory factor analysis of measuring models, and also the obtained results from examining the hypotheses of the research by using structural equation modeling and LISREL software.

Measurement Model
In structural equation modeling, it is necessary to verify the measuring models of organizational culture, knowledge conversion and effectiveness show that the main fitness indices of all the latent variables are within an acceptable range. In other words, the research conceptual models are, to a great extent, corresponding to the observed data.

Also, for further identification of research variables, the average, standard deviation and correlation coefficient between different organizational cultures with knowledge creation and effective models were analyzed (table 4). The results of correlation analysis shows the internal and external relations of the research variables (and their dimensions) are at a significant level of 0.01. The results also show that National Iranian Drilling Company is not in a suitable condition, regarding the main variables of the research and by considering the average scores of organizational culture criteria, it can be said that the dominating culture in that company is the hierarchical culture.

Table (4). Means, standard deviations and Pearson’s correlation coefficients

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Clan Culture</td>
<td>3.15</td>
<td>0.8855</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>2 Adhocracy Culture</td>
<td>3.09</td>
<td>0.8088</td>
<td>637</td>
<td></td>
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<tr>
<td>3 Market Culture</td>
<td>2.98</td>
<td>0.7932</td>
<td>519</td>
<td></td>
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<tr>
<td>4 Hierarchy Culture</td>
<td>3.51</td>
<td>0.7539</td>
<td>488</td>
<td></td>
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<tr>
<td>5 Socialization</td>
<td>3.04</td>
<td>0.8222</td>
<td>849</td>
<td></td>
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<tr>
<td>6 Externalization</td>
<td>3.08</td>
<td>0.7352</td>
<td>526</td>
<td></td>
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<tr>
<td>7 Combination</td>
<td>3.32</td>
<td>0.7322</td>
<td>562</td>
<td></td>
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<tr>
<td>8 Internalization</td>
<td>3.50</td>
<td>0.7346</td>
<td>592</td>
<td></td>
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<tr>
<td>9 Human relations</td>
<td>3.08</td>
<td>0.8074</td>
<td>917</td>
<td></td>
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<tr>
<td>10 Open system</td>
<td>3.09</td>
<td>0.7114</td>
<td>581</td>
<td></td>
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<tr>
<td>11 Rational goal</td>
<td>3.23</td>
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<td>14 Knowledge Creation</td>
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<td>15 Effectiveness</td>
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</table>

**Correlation is significant at the 0.01 level.**
Structural Model

Structural equation modeling and path analysis are used to test the research hypotheses. In executing the structural equation modeling to examine the hypotheses, the software output shows the appropriateness of the fitted structural modeling (RMSEA=0.021, χ²/df=1.45, GFI=0.96, AGFI=0.94). In other words, the observed data is to a great extent in conformity with the research conceptual model. The results of the structural model in standard estimation state indicate the relation between the organizational culture, knowledge creation process and effectiveness (fig.6).

Fig. (6). Research structural equation modeling in the state of estimating the standard value

Chi-Square=105.62, df=42, p-value=0.00000, RMSEA=0.026

Fig. (7) Shows the significance of obtained coefficients and parameters from structural modeling of organizational culture, knowledge creation and effectiveness. As it can be seen, all the coefficients between culture variations, knowledge creation and effectiveness are over 1.96 and significant. Hence, the structural modeling shows that organizational culture has a positive and significant relation with knowledge creation and organizational effectiveness. Also, the results indicate that the knowledge conversion process intermediates organizational culture with effectiveness.

Fig. (7). Significant values of research structural modeling coefficients

Chi-Square=105.62, df=42, p-value=0.00000, RMSEA=0.026

The general results obtained from the examination of research hypotheses are presented in table (5), with the total measuring models. According to the obtained results, it can be said that the conceptual model of the research is confirmed at a significant level of 0.05. Also, the results show that among different organizational cultures, the adhocracy culture has the highest rate in relation with organizational effectiveness, via the intermediate knowledge creation process.
Table (5). General results of examining research hypotheses according to structural equation modeling

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>Direct effect</th>
<th>T-value</th>
<th>Indirect effect</th>
<th>Total effect</th>
<th>Result</th>
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<td>12.55</td>
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<td>6.91</td>
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</table>

Conclusion

Organizational culture could be a great challenge for executing scientific programs (Du Plessis, 2008). But, anyhow, there is no comprehensive theoretical framework that could describe the effects organizational culture on knowledge management in organizations (Rai, 2011). Thus, to identify required cultural basis to implement an efficient knowledge management and knowledge creation in National Iranian Drilling Co., the research theoretical framework was developed in this investigation, according to Parsons’s general theory of action and then by a practical approach, and it was dealt with investigating the relations between organizational culture, knowledge creation process and organizational effectiveness. Therefore, the structural equation modeling and path analysis were used for examining the research hypotheses. The result of the first hypothesis of the research shows that there is a positive and significant relation between different types of organizational cultures and states of corresponding of knowledge creation (β= 0.87, t=15.74). Hence, it can be concluded that organizational culture is the required basis or infra-structure for knowledge creation process and creating new sciences. This confirms the previous theories and views in this regard to some extent (e.g. Suppiah and Sandhu, 2011; Tseng, 2010a; Khanyile, 2009; Jones, 2009; Gray and Densten, 2005; Ba, 2004). It can generally be said by creating a texture for social communications, organizational culture could determine the state of using knowledge in specific and productive manner tradition (Lang & Fahey, 2000). Also according to the second hypothesis of the research, there is a positive and significant relation between knowledge creation states and corresponding organizational effectiveness models (β=0.54, t=2.46). This result could confirm the results of previous studies in this regard (e.g. Kim and Hanser, 2010; Zheng et al., 2010; Smith, 2006). The result of the third hypothesis of the research indicates the relation between organizational culture and corresponding effectiveness models (β=0.54, t=2.19) (e.g. Foreman, 2009; Forner et al., 2009; Gregory et al., 2008; Fey and Denison, 2003). It can therefore be argued that knowledge creation process could intermediate the relation of organizational culture and effectiveness and could be an important factor in promoting financial or non-financial effectiveness. Also the findings show that adhocracy culture has the most of effects in developing and improving an efficient knowledge management system and existence of an innovating and entrepreneurial culture is essential in knowledge conversion and creating new sciences. Khanyile (2009) concludes from his research that for the competitiveness of an organization, it needs an appropriate dominating culture and all the empowering factors of knowledge creation are not necessarily essential (Khanyile, 2009). In considering this result and comparing with the results of the present research, it can be stated that the dominating culture for organizational knowledge creation is adhocracy culture. To follow this, Lai and Lee (2007) argue that for implementing knowledge management actions, organizations should consider an entrepreneurial culture (Lai & Lee, 2007). Studies of Jones (2009) also showed that in the companies with dominated adhocracy or clan cultures, there is a stronger and more significant relation with knowledge management, as compared to market or hierarchical cultures (Jones, 2009). But, since the dominating culture in Iran National Drilling Co. Was identified to be hierarchical, it seems that company will not be successful in executing knowledge management. Hence, it is proposed to develop adhocracy culture in that company by developing group works to create the common culture among the members, expanding communicating networks both inside and outside the organization, holding meetings to exchange ideas, developing a trustful confidence by more participation of the employees, to provide readiness of the employees. The findings of this research could help the researchers in better understanding of the role of organizational culture in successful implementation of knowledge management processes. In the case that managers require designing and development of approaches, policies and practical trainings in their organization, the present research could provide the essential instructions for the concepts and realization of the subjects of knowledge management and culture.
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