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Investigating the relationship between social capital and strategic knowledge management maturity
(Case study: National Iranian Drilling Company)

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Abstract

The aim of this study is to investigate the relationship between social capital and strategic knowledge management maturity in the National Iranian Drilling Company. This study is applied objectively and in terms of data collecting and processing is descriptive, the study sample is 700 employees of the National Drilling Company of which based on sampling from limited population and in error-level 0.05, 153 subjects were selected. The tool of collecting data in this study has been a research-made questionnaire that included two questionnaires of social capital and strategic knowledge management maturity. Reliability of the questionnaire was approved by Cronbach alpha. In order to analyze the data in this study, the correlation analysis was used to test the hypotheses. In this study, the relationship between social capital and strategic knowledge management maturity based on Meteor model includes four areas based on areas of cognitive ability, guidance, and value and estimate of outcomes has been investigated. The results of the analysis of research data show that there is a significant and positive relationship between social capital and cognitive ability, guidance, value and estimate of outcomes.

Key words: social capital, knowledge management, management maturity, National Iranian Drilling Company

1. Introduction

In today's competitive environment, organizations in the circumstances can respond the requirements of the competitive environment and highly variable needs of customers that they be able to achieve knowledge needed for innovation in their products and improving processes, publish among their employees and use in all daily activities. Therefore, in these circumstances, identify the factors affecting organizational knowledge management is including early and essential actions in effective deployment of the organization's intellectual capital. In the meantime, the model developed of knowledge management expresses strengths and weaknesses of the organization to the ideal mode in each factor and indicator and determines Knowledge management maturity level in the organization and helps to recognize the present situation of the organization in factors and indices considered of model, and to improve the current state of the organization, informs the organization according to the prioritization of criteria and factors of model to improve factors state and its indices with proper and more accurate planning and be able to achieve a higher level of maturity (Hamidizadeh, 2013)

In the meantime, one of the factors affecting organizational knowledge management is social capital. Social capital is the novel concepts that plays a more important role than the physical and human capital in organizations and communities and the links and refers to connections between members of a network as a valuable source and by creating norms and mutual trust causes to realize the goals of members (Tajbakhsh, 2005).

Social capital, both at the macro management level, or at the level of management of organizations and firms can create new insights from socio-economic systems and help administrators in better guidance of system and as an intangible asset can differentiate organization, social capital often leads to increase collaboration and community participation of staff and helps them to be able to achieve a dynamic growth in interact to each other through human capital and economic and material capital and against lack of capital create numerous obstacles facing organizations in achieving the objectives considered (Alvani, 2006). One of these obstacles is lack of trust in governmental officials in organization and lack of confidence reduces ability of staff and worker collaboration of staff as well as their dissuasion form partnerships with subordinates and thereby apathy and demotivation of the employees.

Considering the above, and given the increasing importance of knowledge management and applying it in organizations and given the role that social capital plays in the meantime, in this paper, the researchers decided to investigate the question that social capital indicators include: participation, solidarity, awareness, social trust and accountability what relation have with knowledge management maturity in National Iranian Drilling Company?

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۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

2. Theoretical Foundations

One of the key concepts that contemporary sociologists in investigating quality and quantity of social relations in society use it is the concept of social capital. The purpose of social capital is capital and resources that individuals and groups can achieve by link to each other (Bourdieu 1985, Kolman 1988, Patnam 1993) The concept of social capital for Kolman is a tool to explain how cooperation of individuals with each other. In his perspective, social capital is a source because involves networks based on trust and shared values . Kolman in an article defines social capital as a useful resource that can be used via social connections to actor and elsewhere it is called a public good (Fild, 2007: 67). Of key elements and components of social capital can be pointed to reciprocity, knowledge, confidence, social solidarity, social participation, social identity and social responsibility, social norms, in this research components of knowledge, confidence, solidarity, participation, responsibility and commitment have been used.

The considered entity in this study is "Knowledge Management". Knowledge management is called to the process of identifying, acquiring and applying knowledge in an organization in line to help business process. Given the special status of knowledge management in today's organizations and due to the fact that knowledge management is completed in time and gradually; Organizations and researchers have offered knowledge management maturity models (Hamidizadeh, 2013) To mature process with KM concept can interpret knowledge management as defined, managed, monitored and effectiveness of knowledge management. So, an organization's knowledge management maturity model describes the expected growth in the development process of KM in the organization. Thus, the components related to strategic knowledge management maturity model was chosen based on Meteor model; the model has three areas of support and a central core. The central core in this model is the ability of estimating outcomes and supporting axis is the ability of knowledge, ability of values, and ability of guidance that is named meteor model (Hamidizadeh. 2008). This model according to figure has three-axis support and a central core.
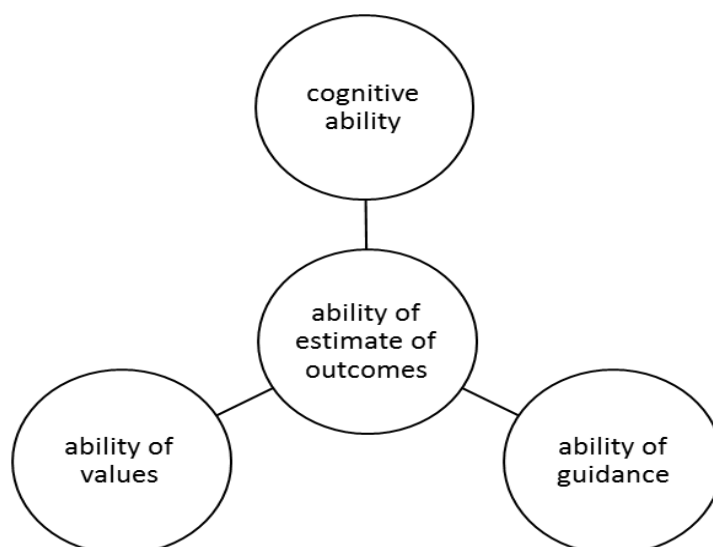
Fig 1: Meteor model. Hamidizadeh, 2008

3. Research background

Create and develop the culture in the organization that encourage this kind of communication and interaction is the necessities of knowledge management. Empirical studies that investigate the relationship between social capital and various activities of KM not have so extension (Landeri and Lamari, 1999). Here are a few cases.

The research results of Pournejadi (2007) in a study titled "providing a conceptual framework for the strategic knowledge management" showed that there should be existed alignment between macro strategies and knowledge management strategies and by identify complementary points between macro strategy and knowledge management provided a conceptual framework and practical model for the strategic knowledge management. Alvani, Nategh and Farahi (2007) investigated the impact of social capital on the development of knowledge management. The findings of research show the existence of social capital in enterprise groups DPI has been effective on development of knowledge management activities (including knowledge creation and transfer activities). However, there isn't observed a significant relationship with the development of knowledge management activities (including business activities, registration, and knowledge application).

Adler and Kron (2002) in their study showed that there is a significant relationship between social capital and knowledge transfer within the organization. Landeri and Lamari (1999) have achieved good evidence based on the relationship between social capital and knowledge management. However, he is considered knowledge management in general and without separating its aspects in his research. Timon and Stamf (2003) in their study show the relationship between social capital and knowledge management (again in a general sense) achieving higher performance by the organization. Das and Teng (1998) have shown the existence of social capital in the organization affects knowledge transfer among members of

1853

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۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

the networks (quoted Hamidzadeh, 2013) San Hark (2004) in a study investigated the processes of efficient team building for the globalization of technology with special emphasis on knowledge management of 14 projects of Samsung technology development. In this study, team-building is a concept that refers to employees' participation in aligned working groups. With the exchange of information between aligned groups, the answer of many issues and problems will be found easily and employees as a result of participation at meetings of searching give their personal knowledge to others and thus personal knowledge turns into corporate knowledge (Hark, 2004). Abdul Qader (2004) using two types of questionnaire that distributed among senior and middle managers and subordinate staff employed in the cabinet of Egypt government, investigated the impact of human factors, characteristic and their skills in the success of KM. The research results proved the direct impact of human factors, characteristics and their skills in the success of knowledge management (AQ-2004).

4. Research hypotheses
4-1 The main hypothesis

There is a significant relationship between social capital and strategic knowledge management maturity in the National Iranian Drilling Company.

4-2 sub hypotheses

4.2.1 There is a significant relationship between social capital and cognitive ability in the National Drilling Company

4.2.2 There is a significant relationship between social capital and ability of values in the National Drilling Company.

4.2.3 There is a significant relationship between social capital and ability of guidance in the National Drilling Company.

4.2 4 There is a significant relationship between social capital and ability of estimate of outcomes in the National Drilling Company.

5. Research Methodology

The research is applied objectively and in terms of how processed data and achieve results is descriptive-correlation. On the one hand because in the descriptive research can evaluate characteristics of the study population through surveys, this study is a survey. The population consisted of 700 employees of the National Iranian Drilling Company. In this study, sampling method is available sampling and theoretical saturation that using Cochran formula, the sample size was estimated at nearly 153 people. In order to collect the data required, document and library resources and field research was used to enjoying the comments of population, therefore, the tool of data collection is questionnaire. In this

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۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

paper, two questionnaires of social capital and strategic knowledge management maturity based on meteor model were used. The questionnaire of social capital consists of 6 sections and 38 questions and questionnaire of strategic knowledge management maturity consists of 4 sections and 20 questions. In order to test reliability, the Cronbach's alpha was used in order to assess the reliability, Cronbach's alpha of questionnaire" strategic knowledge management maturity" obtained 79.9 and Cronbach's alpha of questionnaire "social capital" obtained 78.6. To measure the validity, content validity was used. This means that before distributing, questionnaire was given to seven experts of National Drilling Company and in accordance with their recommendations; the necessary amendments were made and approved by the supervisor finally. To analyze the data collected, both descriptive and inferential statistics were used, descriptive statistics were used to analyze the demographic variables of research (gender, age, education, work experience), to analyze the data in this study, correlation analysis was used to test the hypotheses.

6. Findings
6.1 Descriptive findings

Based on the gender of respondents to the questionnaire, 84.31 percent of respondents have been male and 15.68 percent of them have been women and 9.80% of them have associate's degrees, 53.59% of them have BA degree, 33.33 % have MA degree and 3.26% of them have PhD degree. 22.87% of these people aged less than 30 years, 37.90% aged between 31 and 40 years, 29.41 percent aged between 41 to 50 years, and 980% aged 51 years and more. While in their previous analysis must be stated 27.45 % of them have work experience between 1 to 10 years, 43.13 percent of them have work experience of 10 to 20 years and 29.41% have work experience of 20 years and more.

6.1.2 Describe the state of strategic knowledge management maturity

To describe the state of strategic knowledge management maturity in National Drilling Company from the perspective of the respondents, the following results were obtained that express the following central parameters.

6th. International Conference on Modern Research's in MANAGEMENT, ECONOMICS & ACCOUNTING

15th. Nov. 2016   London - UNITED KINGDOM

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۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

Table 1. Statistical measurement of dimensions of cognitions ability variable

Factor	Number	minimum	maximum	range	avarage	median	SD	mode
The use of databases in different areas of work	153	1	5	2	4.019	4	0.409	4
Level of appropriate facilities for access to professional information.	153	1	5	2	3.470	3	0.586	3
Create a sense of healthy competition among employees	153	1	5	2	4.104	4	0.406	4
Accelerate decision-making and avoid duplication	153	1	5	2	3.457	3	0.454	3

According to Table 1, in dimensions of cognitions ability variable, creating a sense of healthy competition among employees has the highest average and accelerate in decision-making and avoid reinventing has the lowest average. As well as the appropriate facilities for access to professional information is allocated the highest standard deviation, while creating a sense of healthy competition among employees has the lowest standard deviation.

6th International Conference on Modern Research's in MANAGEMENT, ECONOMICS & ACCOUNTING

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۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

Table 2 Statistical measurement of dimensions of guidance ability variable

Factor	Number	minimum	maximum	range	avarage	median	SD	mode
creating a sense of participation among employees	153	1	5	4	3.393	3	1.001	3
The amount of support staff in the field of promoting knowledge and training during work	153	1	5	4	3.163	3	0.601	3
Continuous improvement of staff efficiency	153	1	5	4	3.006	3	0.405	3
Create new processes of better quality of products and services	153	1	5	2	1.888	2	0.335	2
Power of identifying new opportunities and problems	153	1	5	2	1.856	2	0.435	2
Getting the right decision in the face of unpredicted changes	154	1	5	2	2.647	3	0.612	3

According to Table 2, in dimensions of guidance ability variable, creating a sense of participation among employees for advancing affairs has the highest average and power of identifying new opportunities and problems has the lowest average. As well as the creating a sense of participation among employees for advancing affairs is allocated the highest standard deviation, while creating new process of better quality of products and services has the lowest standard deviation.

1857

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15th. Nov. 2016   London - UNITED KINGDOM

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و حسـابـداری

۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

Table 3 Statistical measurement of dimensions of values ability variable

Factor	Number	minimum	maximum	range	avarage	median	SD	mode
reducing cycle time and shorten organizational processes	153	1	5	2	3.300	3	0.649	3
Transfer of internal experiences	153	1	5	4	3.542	4	0.648	4
Aviod incuriosity	153	1	5	2	3.673	4	0.484	4
improving and decision making works	153	1	5	2	3.692	4	0.476	4
flexibility of internal processes for adapting with unpredicted changes	153	1	5	2	3.712	4	0.546	4

According to Table 3, in dimensions of values ability variable, flexibility of internal processes for adapting with unpredicted changes has the highest average and dimension of reducing cycle time and shorten organizational processes has the lowest average. As well as reducing cycle time and shorten organizational processes is allocated the highest standard deviation, while improving and decision making works has the lowest standard deviation.

1858

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پژوهش‌های نوین در
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و حسـابـداری

15th. Nov. 2016 London - UNITED KINGDOM

۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

Table 4 Statistical measurement of dimensions of ability of estimate of outcomes

Factor	Number	minimum	maximum	range	avarage	median	SD	mode
Existing programs of promoting thinking and professional analysis	153	1	5	3	3.281	3	0.611	3
Promoting quality of products and services	153	1	5	2	3.326	3	0.647	3
prevent of enter to problems and threats of market	153	1	5	3	3.287	3	0.645	3
utilizing market opportunities	153	1	5	2	1.967	2	0.492	2
developing the areas of facilitate learning knowledge in the organization	153	1	5	4	2.078	2	0.702	2

According to Table 4, in dimensions of ability of estimate of outcomes variable, prevent of enter to problems and threats of market has the highest average and dimension of utilizing market opportunities has the lowest average. As well as developing the areas of facilitate learning knowledge in the organization is allocated the highest standard deviation, while utilizing market opportunities has the lowest standard deviation.

6-2 analytical findings

After describing the responses obtained from the population in this section, hypotheses raised and static test used in research are investigated.

6.2.1 Kolmogorov-Smirnov test (k-s)

To investigate normality of distributing data collected, nonparametric tests were used.

1. Normality test (k-s) for the distribution of strategic knowledge management maturity

1859

6th. International Conference on Modern Research's in MANAGEMENT, ECONOMICS & ACCOUNTING

15th. Nov. 2016   London - UNITED KINGDOM

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۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

Table 5: Test result of normality for distributing data of strategic knowledge management maturity

Dimensions	Significant level	Error value	Approve hypothesis	Result
Cognitions ability	0.232	0.05	H_0	Normal
Guidance ability	0.075	0.05	H_0	Normal
Values ability	0.438	0.05	H_0	Normal
Ability of estimate of outcomes	0.099	0.05	H_0	Normal

According to Table 5, because significant level of dimensions is larger than the error value 0.05 so the null hypothesis is concluded. The dimensions of strategic knowledge management maturity have normal distribution.

2. Normality test (k-s) for the distribution of social capital variable

Table (6) test result of normality for the distribution of social capital data

Dimensions of social capital	Significant level	Error value	Approve hypothesis	Result
Social Awareness	0.086	0.05	H_0	Normal
Trust	0.785	0.05	H_0	Normal
Social cohesion	0.518	0.05	H_0	Normal
Social participation	0.608	0.05	H_0	Normal
Responsibility	0.652	0.05	H_0	Normal
Commitment	0.451	0.05	H_0	Normal

According to Table 6, because significant level of dimensions is larger than the error value 0.05 so the null hypothesis is concluded. The dimensions of social capital have normal distribution.

6.2.2 Test of hypotheses using correlation analysis

A: The main hypothesis: social capital affects the strategic knowledge management maturity.

For the correlation between social capital and strategic knowledge management maturity using Pearson's correlation coefficient, a test was done that result is as follows.

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15th. Nov. 2016 London - UNITED KINGDOM

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و حســابـداری

۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

Table (7): the correlation between social capital and strategic knowledge management maturity

social capital	strategic knowledge management maturity
Pearson's correlation coefficient	P=0.851
Possibility value	0.000
Number	153

As can be seen from Table 7, at the level of 0.95 there is a relationship between social capital and strategic knowledge management maturity and its correlation coefficient is 0.851. And thus the hypothesis H0 is rejected and hypothesis H1 (main hypothesis of research) is accepted based on the impact of social capital on strategic knowledge management maturity.

(B) Sub-hypotheses

3.2.1 There is a significant relationship between social capital and cognitive ability in the National Drilling Company

3.2.2 There is a significant relationship between social capital and ability of values in the National Drilling Company.

3.2.3 There is a significant relationship between social capital and ability of guidance in the National Drilling Company.

3.2 4 There is a significant relationship between social capital and ability of estimate of outcomes in the National Drilling Company.

Table (8): the correlation between social capital and strategic knowledge management maturity

		first sub-hypothesis	second sub-hypothesis	third sub-hypothesis	fourth sub-hypothesis
Independent variable / dependent variable		Cognition ability	Value ability	Guidance ability	Ability of estimate of outcomes
social capital	Pearson's correlation coefficient	0.665	0.685	0.608	0.609
	Significant level	0.000	0.000	0.000	0.000

Findings of Table 8 shows in the first sub-hypothesis that the observed correlation coefficient (0.665) with a significant level of P=0.000<5 is significant. So it can be said there is a direct relationship between social capital and cognitive ability and the intensity of the relationship is average and good, and therefore the first hypothesis is approved by 95% confidence.

In investigating the second sub-hypothesis based on the relationship of social capital on values ability, the table shows that the observed correlation coefficient (0.685) with a significant level of P=0.000<5 is significant. So it can be said there is a direct and significant relationship between social capital and values ability and therefore the second sub hypothesis is approved by 95% confidence.

The results of third sub-hypothesis also shows, social capital on guidance ability have significant relationship in this company and the observed correlation coefficient (0.608) with a significant level of P=0.000<5 is significant. So it can be said there is a significant relationship between social capital and guidance ability and therefore the third sub hypothesis is approved by 95% confidence.

 In the test of fourth sub-hypothesis based on the relationship of social capital and ability of estimate of outcomes shows that the observed correlation coefficient (0.609) with a significant level of P=0.000<5 is significant. So it can be said there is a significant and positive relationship between social capital and ability of estimate of outcomes and therefore the fourth sub hypothesis is approved by 95% confidence.

7. Conclusion

This study aimed to investigate the relationship between social capital and strategic knowledge management maturity in National Drilling Company accordingly, after conducted empirical and theoretical research in this field, variables and dimensions was determined and after questionnaire design and data collection, the results were analyzed and the results showed a direct positive relationship between social capital and knowledge management maturity and with strong intensity (0.851) was observed. According to the results of descriptive findings in the dimensions of cognitions ability, creating a sense of healthy competition among employees has had the highest average and accelerates decision-making

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15th. Nov. 2016   London - UNITED KINGDOM

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و حسـابـداری

۲۵ آبان ماه ۱۳۹۵   لندن - انگلستان

and avoiding duplication has had the lowest average. In dimensions of guidance ability, creating a sense of participation among employees to promote affairs has had the highest average and power of recognizing new opportunities and bottlenecks has had the lowest average. In dimensions of values ability, flexibility of internal processes to adapt to unpredicted changes has had the highest average and dimension of cycle time reduction and short-organizational processes has had the lowest average. In dimensions of ability to estimate outcomes, improve the quality of products and services has had the highest average and utilization of market opportunities has had the lowest average. The results obtained are consistent with the results of other researchers, Adler and Kron (2002), Landeri and Lamari (1999), Timon and Stamf (2003), Das and Teng (1998), Alvani, Nategh, and Farahi (2007), San Hark (2004) and Abdul Qader (2004).

In explaining the result obtained could be stated, the transfer of information and knowledge on macro and micro levels between individuals and organizations depends on the individual that facilitate and accelerate this transition. As a result, all the factors that encourage or hinder its interpersonal communication will be effective on people's exchange of information, That's why the importance of communications and interactions based on trust between individuals is emphasized in the development and application of knowledge. If the organization can increase more effective interaction among its employees, in groups and organizational units, it could further increase the effectiveness of information exchange between organizational people and can more ensure the effectiveness of information exchanges between their people and thus effective management of organizational knowledge (Bhatt, 2001).

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