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Studying the Role of Applying Knowledge Management on Iran's Carpet Industry Compatibility

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ABSTRACT

In a scientific economical system, products and organizations' lives are dependent on knowledge and the most successful organizations are which use this intangible property in a better manner and higher speed. Studies have shown that knowledge is a genuine resource which leads to business performance increase, in contrary to efficiency reduction of traditional resources (money, land, machinery equipment, and etc.) Nowadays and from a strategic point of view, intellectual capital is used to create and improve organizational worthiness and organizational success depends on how this crucial capital is applied and managed in the system.
This study investigates the role of knowledge management on gaining competitive advantages Iran's carpet industry. The results -which are obtained through the Pierson correlation and regression – represent the positive effects and meaningful aspects of knowledge management to gain a beneficial compatibility. In continue and with the Friedman test applied, two main variables were ranked that knowledge sharing, knowledge acquisition and knowledge storage were the most important sub-scales in knowledge management dimensions and in intellectual capital components, relational capital and human capital were more powerful than other variables. In the end, the 'mean' test results showed that within the all variables considered in this study, the organizational learning variable is the only one, which is not placed in a satisfactory level.
KEYWORDS: Knowledge management, competitive advantage, Carpet industry.

1. INTRODUCTION AND PROBLEM STATEMENT

The 21st century seems to have begun with events indicative of the turbulence, challenges and opportunities ahead. Excesses during long economic boom in America surfaced with the dot-com crash. The attacks of September 2001 and the collapse of giants such as Enron and WorldCom have shaken confidence in business. With Japan passing through a decade-long painful transition, two biggest economies of the world are in poor shape (Ambashta and Momaya, 2004).
Survival and success in such turbulent days increasingly depend on competitiveness. Competitiveness has been described many by researchers as a multidimensional and relative concept. The significance of different criteria of competitiveness changes with time and context. Theories and frameworks must be flexible enough to integrate the change with key strategic management processes if their utility is sustained in practice (Barney, Wright and Ketchen, 2001).

Iran's hand-made carpet affected of cultural characteristics has been one of the most important goods among non oil exports.

Unfortunately because of shortage in organizational, structural, managerial and especially commercial, Iran's carpet industry has situated in retrenchment period. In other side, ignoring the commercial and business fundamentals which include production process, its competitive advantages have been decreased (Hossaini, Haghshenas & Saeedi, 2010).

This industry is one of most powerful ones in Iran (after petrochemical industry) and although the export rate was descending, but it was the top one all over the world until at 2008, which China and India could be replaced as the best hand-made carpet exporters. Not to applying new techniques like internet marketing, e-commerce and international marketing are the most reasons which make Iran to be situated in the third place (Almasi et al, 2010).
So in this paper we try to survey the effect of knowledge management on Iran's carpet industry compatibility.

2. Knowledge Management

There is an increasing attention toward the knowledge management field, both from scientific and business perspective. It can be understood easily, considering the growing numerous publications in this field (Zack, 1999). The studies have been done in Europe propose that in 2000, knowledge management was applied in 80 percent of the biggest companies in the world (KPMG, 2000).

In recent years, the knowledge itself has turned to a key subject toward the organizations' competitive capabilities. Also the idea of 'knowledge is being manageable' has taken its place in many knowledge-based businesses, learning organizations and intellectual capital managements. Therefore, organizations are looking for new ways to survive in the business and stay effectively competitive. One of the ways to achieve effectiveness is to discover and develop the properties with high efficiency, thoseproperties which were not used properly in the past (Ndlela & Du Toit, 2001).

To understand knowledge management, it must be considered as an interdisciplinary field of research, which makes it

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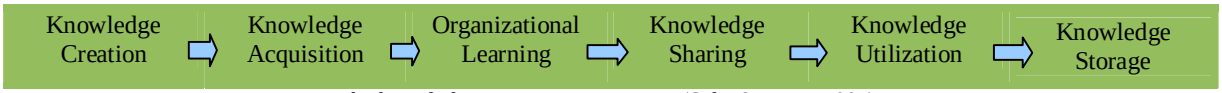
a little complicated and ambiguous. Although the hardiness should not become the reason of abandon the issue. At the time of codifying one organization's strategies, the ideas about knowledge management must be considered and applied.

The knowledge management process helps the organizations to recognize, select, organize and propagate the information and important specialties. These information and specialties are part of the organizational memory and usually are unstructured (Turban & Mclean, 2002). In another way, the knowledge management has been defined as the process of awareness of existing knowledge in the organization, create, share, transfer and employ that knowledge, and finally obtain new knowledge and save and store it for the organization, in which all those actions happen within the learning process of an organization, considering its culture and strategies (Sallis & Jones, 2002). Structuring the knowledge is what, that helps organizations in problem solving improvement, dynamic learning, strategic programming, and decision making more effectively. The focus of knowledge management is to recognize, explain and organize knowledge and to increase organization's value. This concept (knowledge management) has been used in various fields such as knowledge engineering (De Hoog, 1997) and artificial intelligence (Glazer, 1998).



The knowledge Management Process (Salis & Jones, 2002)

Knowledge Creation in an organization means to provide ability in the system, which facilitates the creation of a new brand of knowledge and its distribution all over the organization (Nonaka & Takeuchi, 1995).

Knowledge Acquisition includes of a group of spiral interactions between tangible and intangible (hidden) knowledge which appears through four stages;

1) Social building, 2) Exterior building, 3) Combination, 4) Interior building (Nonaka & Takeuchi; 1995)

Organizational Learning is combined of a collection of synchronizing interactions between individuals and groups and also organizational synchrony (Cangelosi & Dill, 1965).

Knowledge Sharing is considered as two actions; 1) Transfer (to transfer knowledge to a potential receiver), 2) Absorption (the knowledge absorption by an individual or a group) (Nonaka & Takeuchi; 1995).

Knowledge Utilization consists of activities such as creating a new knowledge from an existing one.(to discover the customers interests from analyzing their behavior) and to apply the current knowledge (such as finding new customers and current costumers' retention) (Lee & Yang, 2000).

Knowledge Storage is a process. Through this process all the cases which seem to be valuable enough to be protected, are recognized and then will be stored in the organizational memory form (Sallies & Jones, 2002).

Knowledge management in relation to acquisition of competitive advantages

Although many studies propose knowledge as source for competitive advantage, still this source is not being applied and managed in organizations properly and just a few percentages of organizations' managers believe in the implication and management of knowledge in their organizations (Takeuchi, 1998).

Some experts believe that a company can compete and win the competition if it possesses the better and more appropriate knowledge rather than its competitors (Zack, 1999). In this viewpoint, competitiveness is fundamentally based on the company and the knowledge (Cater, 2001). Knowledge can be considered as a proper source for increasing competitiveness, because when one company owns it, it can uses the knowledge to reduce its final costs in many domains (Grant, 1997).

The knowledge-based management doctrine is established on considerable empirical background. The studies have been done on this filed propose the direct effect employees' knowledge on competitiveness benefits (Makovec & Zabkar, 2001), sales growth (Hall, 1991), Market's contribution (Makovec & Zabkar, 2001), profitability and increasing value of staffs (Cater & ALfirevic, 2003). In the knowledge-based viewpoint, a stable competitive benefit can be obtained just through the knowledge. It implies that the amount of knowledge outside of an organization is a way more than the existing knowledge inside it and therefore, the organizations are able to go further for a stable competitiveness through the more and more learning and knowledge (Zack, 1999) & (Liao & Hu, 2007).

Also in the resource- based viewpoint, strategic properties of organizations must be valuable and exclusive and cannot to be replaced. The interesting fact is even here, the organizational knowledge is effective on competitiveness, more than any other factor (Barney, 1991).

As mentioned before, knowledge is an important factor to attract resources, and to apply the abilities in efficient way and also to coordinate these abilities in the way to achieve competitiveness. In addition to those, knowledge is one of the most important sources for innovation in organizations, processes and products. It also is considered as a crucial strategic resource for stabilize the competitiveness in the organization. In this context, it seems necessary for those organizations - which are focused on innovation and better responding due the market requirements to utilize technology and opportunities- to create the technical, marketing, and content abilities through producing a new knowledge combined with the existing knowledge (Peteraf, 1993).

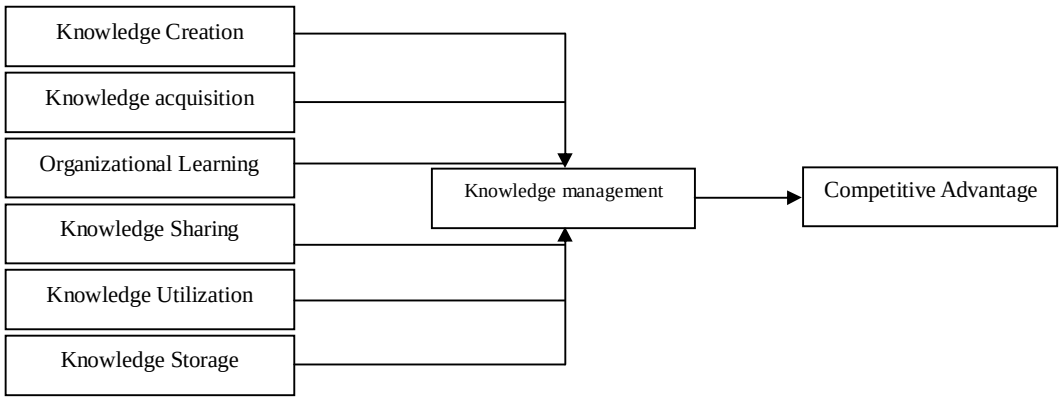
Therefore, knowledge sharing results in central competence development. It improves organizations performance and finally, creates the competitive benefits for organizations (Liao & Hu, 2007).

Nowadays organizations – because of the distribution of knowledge sources, and technology, and also the rapid changes and higher rate of emerging new requirements – are not able to create compatible innovations and systematic supply of products. Therefore، they ambitiously try to transfer knowledge and produce new knowledge and innovate by

using horizontal and vertical networks. And all of that is in regard to overcome the situation and achieve the competitive benefits (Ford & McDowell, 1999).

Conceptual model of the research and hypotheses:

Considering research literature, the conceptual model below can be chose for the aim of the current study. This model measures the effect of intellectual capital and knowledge management on competitive advantage. Within this model, intellectual capital and knowledge management are independent variables and competitive advantage is the dependent variable.



Conceptual framework of research

3. RESEARCH METHODOLOGY

Samples for this research were chosen from managers in different levels: 98 managers and whereas this number seems to be inadequate, the sampling was done through an integral counting method.

Current study can be considered as a descriptive survey if to view from data collection aspect and as an applied research if to investigate the goals of the study. To collect the data library method (to refer to books, articles, libraries, etc...) and fieldworks (questionnaire) was being used. The questionnaire was designed in three parts; 38 questions in knowledge management and 22 questions in competitive advantages and then distributed within the samples (participants).

To analyze the data SPSS 17 was used. The management experts were being asked to evaluate the validity of questionnaires. For this mean, the questionnaires were given to some professors and experts in management, and after their modifications were being applied and they confirmed it, the questionnaires were given to the participants.

To determine the questionnaires' reliability, the 'Cronbach Alfa technique' was applied. For this purpose, 35 persons were chosen by random (from the participants) and the questionnaires were given to them. The 'Cronbach Alfa' values for all variables were calculated:

Table 1: the results of reliability

Variables	Cronbach's Alfa
Total knowledge management	0.91
Competitive advantage variable	0.92
Knowledge creation	0.86
Knowledge acquisition	0.81
Learning organization	0.75
Knowledge Sharing	0.82
Knowledge utilization	0.88
Knowledge storage	0.78

These values support the reliability of questionnaires, because the calculated results for Cronbach's alpha are more than 0.7 (Nunnually & Bernstein, 1994).

4. Data Analysis

4.1. Pearsons correlation test

To investigate the relations of the variables this test was applied. The results are shown below:

Table 2: the correlation between knowledge management and competitive advantage

Correlation	Pearson r	sig	Test result
Knowledge management with competitive advantage	0.54	0.000	H_0 hypothesis is rejected
Knowledge creation with competitive advantage	0.31	0.000	H_0 hypothesis is rejected
Knowledge acquisition with competitive advantage	0.62	0.021	H_0 hypothesis is rejected
Organizational learning with competitive advantage	0.45	0.000	H_0 hypothesis is rejected
Knowledge sharing with competitive advantage	0.47	0.035	H_0 hypothesis is rejected
Knowledge utilization with competitive advantage	0.61	0.000	H_0 hypothesis is rejected
Knowledge storage with competitive advantage	0.41	0.000	H_0 hypothesis is rejected

Table 2, which present the correlations of each of the six items. Pearson correlation matrix reveals that knowledge management and its dimensions are all significantly and highly correlated with competitive advantage.

As can be viewed from table 2, there is a meaningful and direct correlation between knowledge management and its dimensions with competitive advantage.

According to table 5, hypotheses were supported. Strong positive correlation was found between knowledge acquisition and knowledge utilization with competitive advantage ($r > 0.6$, $p<0/05$).

4.2. Regression test

To investigate how intense is the effect of knowledge management and intellectual capital on gaining competitive advantage, the regression test was used.

Table 7: Multi-variables regression analysis between knowledge management and competitive advantage

Variables	Standardized Coefficients	Unstandardized Coefficients		T value	sig
	Beta	Std. error	B		
Constant		4.327	1.412	13.245	0.03
Knowledge management	0.584	0.045	0.541	7.45	0.000
Constant		3.815	1.354	14.394	0.000
Knowledge creation	0.476	0.068	0.425	6.19	0.008
Knowledge acquisition	0.583	0.39	0.573	7.26	0.031
Organizational learning	0.439	0.54	0.396	5.23	0.000
Knowledge sharing	0.646	0.076	0.614	8.32	0.015
Knowledge application	0.561	0.45	0.519	6.54	0.000
Knowledge storage	0.611	0.61	0.597	7.78	0.000

Due the table above it can be viewed that the positive and meaningful linear correlation exists between knowledge management and its dimensions with competitive advantages of Iran's carpet industry. The linear correlation is explained below:

Competitive advantage= 1.354 + 0.425 Knowledge creation + 0.573 Knowledge acquisition + 0.396 Learning organization + 0.614 Knowledge sharing + 0.519 Knowledge application + 0.597 Knowledge storage.

Table 8 suggests the direct and meaningful linear correlation between intellectual capital and its dimensions with competitive advantage. The linear correlation is shown below:

4.3. Average Test

This test has been used to measure the knowledge management and intellectual capital levels and their dimensions.

Table 12: Results from Average test application

Dimensions	$Z_{0.05}$	Z value	Test result
Knowledge management	1.645	2.636	High level ranking in application
Knowledge creation	1.645	1.795	High level ranking in application
Knowledge acquisition	1.645	3.215	High level ranking in application
Learning organization	1.645	1.212	Low level ranking in application
Knowledge sharing	1.645	2.337	High level ranking in application
Knowledge utilization	1.645	1.946	High level ranking in application
Knowledge storage	1.645	2.145	High level ranking in application
Competitive advantage	1.645	3.011	Favorable level ranking of Iran's carpet industry

As it can be viewed, the entire variables except learning organization are higher than Z-value. Therefore table 12 suggests that the 'Saipa' company is in a favorable level from its competitive advantage, intellectual capital, knowledge management and their dimensions and it is not in a desirable level from leaning organization aspect.

5. Conclusion and further suggestions

Current study is done in a community which includes of 98 managers, consultants and experts in Saipa co. In this sampled society 0.83 percent was men and 0.17 women. 32 percent were carried a bachelor degree, 60 percent master, and 8 percent a doctorate. Meanwhile 62 percent of participants had work experience between 16 to 25 years and 8 percent more than 30 years of experience.

The results from correlation test propose a meaningful and positive relation between knowledge management and intellectual capital with gaining competitive advantage in Saipa co. While the regression test shows how intense is the effect of every variables, in which the knowledge management dimensions – Knowledge sharing and knowledge storage – were recognized to be more effective.

Meanwhile within the intellectual capital dimensions, the investors' relation was more effective than other variables in gaining competitive advantage.

In continue, with the Friedman test application, knowledge management and intellectual capital dimensions were ranked. In this ranking knowledge sharing and knowledge storage in knowledge (as knowledge management dimensions) and Relational capital and human capital (as intellectual capital dimensions) were having more strength than structural capital.

Finally the average test was applied to the data, to investigate the level of every variable. The results show that the entire variable, except for learning organization was on a desirable level.

Considering the results, some suggestions can be proposed for further improvement:

Whereas knowledge sharing plays a more important role on gaining competitive advantage, rather than other

variables, it can be suggested to Saipa managers that they should put more emphasis on it and therefore they may achieve better advantages through it.

Also considering that the learning organization is in a level, lower than average, this dimension should be more in the focus of attention. To create the necessary environment to exchange knowledge, experiences and skills through team work and acculturation to facilitate learning, and to create and strengthening the learning organizations, all of those can play important roles toward improvements in learning organizations.

The relational capital (from the intellectual capital dime) had the biggest effect on gaining competitive advantage. Therefore it can be claimed that the next step to achieve competitive advantage are: to plan and program improvement for external relations with the customers, suppliers, and investors, to measure customers, suppliers, and investors' satisfaction and loyalty, to inform the staff about the market goals and customers' kinds, and also to publicize the customers, suppliers, and investors' feedbacks and finally to manage the relation knowledge (such as customer's knowledge, investors knowledge, supplier knowledge).

Whereas the human and structural capital are also effective on gaining competitive advantage, it is possible to put a step ahead toward relational capital improvement through giving education and consultation, and organizational opportunities to help human capital to improve. And also to give an appropriate customer-oriented education to those staff who are in close contact with the customers, and to continuing persistency and to respond on time to the customers' expectations and complaints.

And finally to facilitate the implication of knowledge management, some strategies can be applied such as creation of an information database, in regard to make a trustworthy environment that can make it easier for the organization to implicate knowledge management in the system, also to create a knowledge work group to minimize the role of prejudices and irrelevant experiences toward the profitability of results (various viewpoints between the individuals in group work), and finally to create an IT-oriented point of view in respect to data categorizations, information, and codifying them.

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