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A Scheme to Examine the Relationship Between Human Resources Efficiency and Knowledge Management

Gholamali Tabarsa and Maryam Kadhim
Department of Business Administration, Shahid Beheshti University, Tehran, Iran

Abstract: This study aims to provide a scheme to examine the relationship between human resources efficiency and knowledge management. In this regard, Damsan Rayaneh Company, one of five highest companies in the field of network security, was selected as the statistical population. The questionnaire was the tool to gather the data and Cronbach's Alpha Coefficient was used to confirm the validity and reliability of the content analysis. To analyze the data, Friedman Test and Pearson Correlation coefficient were used. The results show that there was a significant positive human resources efficiency and all knowledge management dimensions, namely, achieving, analyzing, maintaining and using knowledge.

Key words: Human resources efficiency, knowledge management, knowledge management dimensions, network, security

INTRODUCTION

The competitiveness and organizational basis in contemporary economy has become one of tangible physical resources for the knowledge (Kyoung, 2013). The main focus of management information systems has changed to knowledge management (Azizi, 2007). Businesses that are able to obtain knowledge within their organizations and in the operations, extend and expand it in their products and services, will be of particular advantage over its competitors Ganji. In developed countries, many organizations are knowledge-based businesses in which knowledge management is necessary (Campbell, 2003).

Today, along with the organizations' understanding of the fact that competitiveness is based on the effective knowledge management, the science has become an integral activity of the business of the organizations (Ogiela, 2015). One of the main concerns of knowledge management is how to implement it (Sivri and Krallmann, 2015). Many companies and organizations that are trying to determine the best approach to start a knowledge management and are not confident enough to accept it or not. Therefore, knowledge of the main reasons for the adoption and implementation of knowledge management that makes it successful, will pave the way forward them (Ozbag *et al*., 2013).

On the other hand, in today's competitive world productivity is formed as a philosophy based on the recovery strategy and includes the most important objective of any organization and can contain as a chain the activities of all sectors of society (Almeida and Carneiro, 2009). So, that the mission and purpose of all managers in the organization is the effective and efficient use of resources such as labor, capital, materials, energy and information (Lee *et al*., 2014).

And since, the factors of production, human resource factor unlike other enterprise resources can be relevant as coordinator of intelligence and other factors and also is the most important instrument in increasing or decreasing the efficiency of the organization, therefore, a special place and special attention should be paid to it (Fu *et al*., 2015). The role is more important in service organizations because the human is the athlete and the service sector. Now, if this man is motivated, capable and efficient can be applied to other resources in a favorable manner and will fulfill the productivity and ultimately the organization's productivity, otherwise, it will bring the passiveness, stagnation and backwardness of manpower and motivation. Therefore, the present study will examined the relationship between productivity, human resources and knowledge management.

Literature review

Knowledge management: With the arrival in the 1990s, knowledge is recognized as one of the most needed strategic resources in organizations and since, then the production of knowledge is essential to gain competitive advantage and success of organizations (Campbell, 2003). Traditional competitive strategies that are based on the industrial localization such as costs leadership, diversity or focus are not suitable for dynamic environments.

Corresponding Author: Maryam Kadhim, Department of Business Administration, Shahid Beheshti University, Tehran, Iran

Today, the competence and capability of the organization to maintain a competitive advantage through the development focused on a variety of organizational capabilities, the strategic focus was on the organizational strategic discussions (Gibbert *et al*., 2002). These strategies are not based on specific products and markets but also have been established on the dynamic behavior and processes. In addition, the organization's ability has greatly increased to recover and make new and innovative forms of competitive advantage (Lin *et al*., 2006). A competitive advantage depends on the ability to create in the modern economy is knowledge, learning how to learn and strategic change management (Becker *et al*., 2009). This requires a high level of organizational ability called dynamic capabilities. Dynamic capabilities include the organization's ability to learn new and innovative forms of competitive advantage in different market conditions. Creating competitive advantage through dynamic capabilities requires a continuous flow of knowledge is updated continuously within and outside the organization and storage of knowledge (Ozbag *et al*., 2013).

Perhaps, the boom years of the past two decades is said knowledge management. According to statistics provided by Fortune magazine in 2003, 90% of the world's highest 500 companies have formal knowledge management programs and/or are developing such programs and the growing trend is seen in publications, university studies in the doctoral thesis and graduate and other research projects (Massa and Testa, 2008). Over the years many specialized publications have formed about knowledge management and in general, the theoretical background and the opinions of experts show that the necessity of using knowledge management in organizations is undeniable (Sivri and Krallmann, 2015; Kyung, 2013).

In general, knowledge management insists on the identification and detection of knowledge in a way that increase with a formal method of distribution and its value through reuse. Knowledge management includes the practices to identify, seize, organize and process information to create knowledge which will then be distributed. Knowledge management is the knowledge to the right people at the right time and right place (Ogiela, 2015).

Knowledge management practice is distinguished (rather than the management of those students run) by the following characteristics of the four specified activities (Ozberg *et al*., 2013):

- Acquisition of knowledge (learning, creating or defining)
- Analysis of knowledge (evaluation, validate or value)
- Preservation of knowledge (organization, provided, maintenance)
- Application of knowledge (application, transport, multiplexing)

Efficiency of human resources: The importance of human capital has long been emphasized to increase productivity. Preliminary studies by Becker *et al*. (2009), led to the creation of human capital theory that human resources also increases the final production based on the idea of increasing the level of training of human resources (Fu *et al*., 2015).

Almeida and Carneso (2009) colleagues believe that necessary context in organizations plays an important role in efficiency of human resources. These factors are depending on organizational and environmental factors such as authority and responsibility, tools, technology, resources, organizational structure, rules, procedures and so on. The more these factors are present in the organization, as well as the efficiency of human resources and competencies will further be increased.

Some experts introduced of strategic role of human resources efficiency in the success of organization as follows: participation in the added value, contributing to a competitive advantage and the impact of human resource management on organizational performance (Gray, 2000; Lee *et al*., 2014).

Jonathan and colleagues described the feedback and support of the important factors in improving the efficiency of manpower. Support includes factors such as adequate funding, adequate staffing, facilities and equipment and any necessary assistance to the organization (Fu *et al*., 2015).

Knowledge management and human resources efficiency: Taheri (2009) said in a research that knowledge management affects the executive success (increasing the quality of service and reducing the customer complaints) but the impact of knowledge management was not observed in the success of the economic impact (increase revenues and reduce costs).

Maria Martenson said that the efficiency in any organization, including the strategies that should be considered because it is achieved in competitive advantage productivity. What is the basis of efficiency are educated and knowledge creating people that proved to be able to change the thinking to work, product or service. So in her view, the knowledge management is a prerequisite for efficiency and flexibility in working.

Parikh in a study suggests that knowledge management plays an important role in improving the efficiency and effectiveness and the developing the efficiency of human resources.

Jarvenin found that the principles and mechanisms of learning and knowledge management can be used to improve the efficiency of the use of human resources.

Harry Onyas suggested that deeper understanding of organizational knowledge creation and management helps organizations to improve performance.

Timothy said that the companies can have access to more knowledge and resources by increasing the probability of successful innovation and also the results showed that KM has a positive impact on the organization outputs, improving their products and the promotion of human resources.

Liao and colleagues in a study have seen a positive association between 362 manufacturing units in China in acquisition of knowledge and creativity and efficiency of developing human resources.

MATERIALS AND METHODS

The present study is descriptive-survey in terms of methodology and is applicable based on the target. The scope of the investigation is in 2015 and the location is Damsan Rayaneh Company which is one of the 5 leading company in the field of network security.

The research population consists of the company's experts of Damsan Rayaneh Company. Simple random sampling is used and to determine the sample size Cochran formula was applied as follows:

$$n = \frac{N \times z_{\frac{\alpha}{2}}^2 \times p \times q}{\varepsilon^2 \times (N-1) + z_{\frac{\alpha}{2}}^2 \times p \times q}$$

$$= \frac{100 \times (1.96)^2 \times 0.5 \times 0.5}{(0.05)^2 \times 99 + (1.96)^2 \times 0.5 \times 0.5} \approx 79$$

Given the number of samples, 85 questionnaires will be distributed among experts and professionals, of which 79 are usable questionnaires. In the study, the content validity is used to assess the validity of the questionnaire. First, the questionnaire was evaluated by experts and the next step for the test simplicity and easiness of questions, since it was determined that the questionnaires to be distributed among the experts, a number of questionnaires were distributed among the statistical community and finally, it was attempting to distribute a questionnaire with regard to its investigation and the review and final approval. Cronbach's alpha was used to determine the reliability of the questionnaire used in this study. The method is used for calculating the internal consistency of measurement tools such as questionnaires or tests that measure different features (Table 1).

Table 1: Calculation of reliability of the survey tool

No. of items	Cronbach's alpha
32	0.8713

Since alpha coefficient is >0.7 and reliability of the questionnaire is approved. In the present study to evaluate and achieve the same the importance of knowledge management or not because the responses provided based on Likert range therefore, the Friedman non-parametric analysis of variance was used and finally Pearson test can be used to evaluate the hypotheses.

RESULTS AND DISCUSSION

Data analysis: As mentioned in the previous study, the statistical community are the experts and professionals of Damsan Rayaneh Company that respondents' demographic data are shown in Table 2.

First, Friedman test is used to determine the difference between knowledge management dimensions. The hypotheses for this test is defined as follows which Friedman test for knowledge management elements are shown in Table 3 and 4.

- H_0: Priorities of knowledge management are the same

Opposite hypothesis: at least two dimensions have two different priorities. According to Table 4, because the value of the test statistic is <0.05, the null hypothesis is rejected and opposed hypothesis that differences in priorities of knowledge management will be accepted.

In the next step, as shown in Table 3, the following are the preservation and development of the knowledge are in the highest rank. Therefore, to determine the difference between them, the paired comparisons will be used. In addition, the test is used to the two dimensions of knowledge acquisition and analysis to see if there are significant differences between these two variables or not?

As is clear from Table 5, the test statistic is >0.05 and therefore, the assumption of the equality of means of preservation and application of Knowledge Management in the community is confirmed.

As is clear from Table 6, test statistic is >0.05, so equality hypothesis means of two dimensions of knowledge management is confirmed in acquiring and analysis of the knowledge in the community. Finally, we test the hypothesis:

- H_1: There is a significant relationship between the efficiency of human resources and business management students

Due to the correlation between the two variables, the null hypothesis is based on the lack of the relationship between the efficiency of of human resources and knowledge acquisition is rejected and the relationship between them is approved (Sig.<0.05). The intensity of correlation between two variables is 0.688, according to Mark obtained a there is a positive relationship between the two that with regard to appropriate knowledge acquisition, efficiency of human resources as well is improved (Table 7).

- H_2: There is a significant relationship between the efficiency of human resources and knowledge management analysis

Table 2: Survey population demographics

Parameters	Frequencies	Relative frequencies (%)	Cumulative frequencies (%)
Gender			
Man	57	72	72
Woman	22	28	100
Education			
BA	58	73	73
Masters	19	24	97
Ph.D	2	3	100
Work experience			
5-1	15	19	19
10-5	27	34	53
15-10	15	19	72
>15	22	28	100

Table 3: Friedman test for elements of knowledge management

Elements	Average rating
Acquisition of knowledge	1.59
Knowledge analysis	1.79
Preservation of knowledge	4.09
Application of knowledge	4.08

Table 4: Results of the test of goodness of fit test for the management of knowledge

Parameters	Values
Number	79.000
Chi square	277.988
Degrees of freedom	3.000
Sig.	0.000

Due to the correlation obtained between the two variables, the null hypothesis is rejected based on the lack of efficiency of of human resources and knowledge analysis, the relationship between them is approved (Sig.<0.05) (Table 8). The intensity of correlation between two variables is 0.455, according to Mark obtained, here is a positive relationship between the two that by taking the proper knowledge analysis, efficiency of human resources will be improved.

- H_3: there is a significant relationship between the efficiency of human resources and preservation of knowledge management

Due to the correlation between the two variables, the null hypothesis is rejected based on the lack of efficiency of of human resources and preservation of knowledge and the relationship between them is approved (Sig.<0.05) (Table 9). The intensity of correlation between two variables is 0.769 that due to the resulted mark, there is a positive relationship between the two variables, namely with regard to preservation of the appropriate knowledge in the organization, efficiency of human resources will be improved.

- H_4: there is a significant relationship between the efficiency of human resources and KM

Due to the correlation between the two variables, the null hypothesis is rejected based on the lack of efficiency of of human resources and development of knowledge the relationship between them is approved (Sig.<0.05) (Table 10). The intensity of correlation between two variables is 0.324, according to Mark obtained, there is a positive relationship between the two variables that with the use of knowledge, efficiency of human resources will be improved.

Table 5: Paired comparisons between preservation and development

	Paired comparison							
				Difference in the confidence level of 0.95				
Variables	Average	SD	Average SD	Least	Highest	t	df	Sig.
Couples preservation and development	4.15	2.321	1.652	-2.567	3.755	1.578	105	0.332

Table 6: Paired comparison between business and knowledge analysis

	Paired comparison							
				Difference in the confidence level of 0.95				
Variables	Average	SD	Average SD	Least	Highest	t	df	Sig.
Couples acquisition and analysis	1.539	1.172	0.109	-0.567	1.442	0.791	105	0.655

Table 7: Correlation between efficiency of human resources and knowledge acquisition

Variables	Knowledge acquisition	Efficiency of human resources
Knowledge acquisition		
Pearson correlation	1.000	0.688
Sig. (2-tailed)	-	0.000
Number	79.000	79.000
Efficiency of human resources		
Pearson correlation	0.688	1.000
Sig. (2-tailed)	0.000	-
Number	79.000	79.000

Table 8: The correlation between Efficiency of human resources and knowledge analysis

Variables	Knowledge acquisition	Efficiency of human resources
Knowledge analysis		
Pearson correlation	1.000	0.455
Sig. (2-tailed)	-	0.000
Number	79.000	79.000
Efficiency of human resources		
Pearson correlation	0.455	1.000
Sig. (2-tailed)	0.000	-
Number	79.000	79.000

Table 9: Correlation between efficiency of human resources and preservation of knowledge

Variables	Preservation of knowledge	Efficiency of human resources
Preservation of knowledge		
Pearson correlation	1.000	0.769
Sig. (2-tailed)	-	0.036
Number	79.000	79.000
Efficiency of human resources		
Pearson correlation	0.769	1.000
Sig. (2-tailed)	0.036	-
Number	79.000	79.000

Table 10: Correlation between efficiency of human resources and development of knowledge

Variables	Application of knowledge	Efficiency of human resources
Application of knowledge		
Pearson correlation	1.000	0.324
Sig. (2-tailed)	-	0.001
Number	79.000	79.000
Efficiency of human resources		
Pearson correlation	0.324	1.000
Sig. (2-tailed)	0.001	-
Number	79.000	79.000

Finally, after examining the relationship between knowledge management dimensions, it can be concluded that there is a significant positive relationship between the efficiency of human resources and knowledge management. In other words, the establishment of an appropriate system of knowledge management, efficiency of human resource increases.

Main hypothesis: There is a significant relationship between the efficiency of human resources and knowledge management.

Table 11: Correlation between efficiency of human resources and knowledge management

Variables	Knowledge management	Efficiency of human resources
Knowledge management		
Pearson correlation	1.000	0.565
Sig. (2-tailed)	-	0.000
Number	79.000	79.000
Efficiency of human resources		
Pearson correlation	0.565	1.000
Sig. (2-tailed)	0.000	-
Number	79.000	79.000

Due to the correlation between the two variables, the null hypothesis is rejected based on the lack of efficiency of of human resources and knowledge management and the relationship between them is approved (Sig.<0.05). The intensity of correlation between two variables is 0.565, according to Mark obtained, there is a positive relationship between the two vriaables that by taking the proper knowledge management system, efficiency of human resources will be improved (Table 11).

CONCLUSION

Today, the competitive pressures is increasing in the global market so that quality improvement, low production cost, timely meet the expectations of customers and citizens and accountability is not an option but a necessity of strategic management. Global environment and intense competition has caused issues such as total quality management, customer satisfaction, benchmarking, re-engineering, re-structuring, downsizing and outsourcing, strategic planning, organizational learning and knowledge management is the focus of the organizations.

There are many employees in the organization and if the skills, mindset and capabilities of employees become high performance, the organizations will be profitable, juicy and the top.

Excellence of organization depends on excellence of its employees that to have an excellent and a leader organization must first make the excellent and leader employees to start and continue the excellence of the organization. Excellence of staff will be developed by the mental, intellectual capabilities, attitude and knowledge. On this basis, it is necessary that organizations follow in human resource development in a systematic and practical manner.

Therefore, in this study, it is tried to investigate the relationship between productivity, human resources and knowledge management. The results of data analysis showed that there is a significant positive relationship between the efficiency of human resources with all

aspects of knowledge management. In other words, have a good knowledge management system can inmprove the efficiency.

RECOMMENDATIONS

Due to the impact of knowledge management on the efficiency of of human resources, it has been proposed to managers:

- The organization's managers should measure and assess their Knowledge Management component periodically. This would improve the knowledge management and efficiency that is required to become an intelligent organization
- All existing obstacles to the implementation of a knowledge management system and the establishment of new conditions must be investigated and resolved. The role of transformational leadership and commitment of top management of the organization will be shown to have an appropriate level of knowledge management and productivity in these conditions
- The financial support of programs that will promote the knowledge management and ultimately the efficiency of of human resources
- The intensity of attracting qualified people and the knowledge required as well as the employment prospects of people in professional careers and support the staff to provide effective Knowledge management will be helpful for the organization
- Promote the formulation of regulations on the creation and dissemination of knowledge
- The knowledge base system to store, transfer and sharing of knowledge created
- Participation of staff in educating and scientific workshops

It also recommended further research to improve rresults, to test structural equation modeling using LISREL software using variables and compare their results.

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