

# Examining Impact of Knowledge Management on Organization Productivity (Case Study: Employees of Shahid Rahnemoon Hospital, Yazd)

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**Abstract:** *In today's world, knowledge has become a key source that survival of organizations depends on it directly or indirectly. The present research aimed to investigate impact of infrastructural and process factors of knowledge management on organization's productivity (case study: staff of Shahid Rahnemoon Hospital, Yazd). Accordingly, conceptual models and theories are presented by reviewing theoretical literature and research background. The research is applicable objectively, and its method is descriptive and survey type, in terms of collecting data. Its population consisted of all employees of Shahid Rahnemoon Hospital. A questionnaire was used as the research tool. After distributing the questionnaires among subjects and returning them, the researcher analyzed results of the hypotheses using descriptive and inferential statistics such as confirmatory factor analysis, structural equation modeling and fitness tests of total model. Finally, the results showed that infrastructural and process elements of knowledge management have a significant effect on organizational productivity.*

**Keywords:** *Organizational productivity, Infrastructural and process factors of knowledge management, Knowledge management*

## INTRODUCTION

Today, productivity is more than an economic benchmark and indicator. It is considered as a comprehensive approach, systemicist culture and attitude and a whole containing all components, so that it can affect every economic, social and cultural aspect of a country, organization or individuals. Productivity is one of basic issues with a few hundred years history at various levels and different human activities; therefore, its importance has been strongly emphasized in economic, social and industrial activities. Undoubtedly, manpower has a privileged position among existing capitals. It should be noted that progress of each nation depends on work and effort of all sectors of the society and productivity is a criterion to assess performance of these activities and efforts in various social and economic sectors. Productivity in organization is considered as a determinant factor for wages, prices and other factors of production. Productivity ratios are used by management as a means to control production process; it can also be used as a benchmark to compare performance of institutions. Terminologically, productivity means production power, fertility and being productive. In recent years, this term has been used in scientific and administrative culture of the country. In some research papers, there have been selected equivalents for the term of productivity such as efficiency, production power and production capability [1].

Firms require knowledge to increase their ability to improve goods and services and to increase productivity and as a result, to enjoy customers and consumers. The modified goods and services should be matched by changes in systems, structures and solutions for problem solving. Although knowledge is not easily measurable, organizations should effectively manage knowledge, in order to obtain benefits that can be gained by skills, experiences and tacit knowledge of employees in their system and structure. However, one of the most important identified challenges is the ability to understand knowledge management and its objectives that there is still no general agreement on the concept of knowledge management [2].

Knowledge management plays a vital role in supporting organizational learning and facilitates sharing of collective knowledge effectiveness in organization. Accordingly, organizations constantly try to manage the created knowledge in organization using knowledge management. Finally, it can be admitted that undoubtedly, improving human resource productivity is not affected by a particular factor, but it is the result of interaction and combination of various factors. Since productivity is not an abstract concept and necessarily has a functional aspect, organization's management plays a significant role in providing the right context to institutionalize and promote its level. From this perspective, employees' participation has a particular importance because paying attention and emphasizing on dignity of human as a strategic factor in different aspects of the organization determine fate of productivity in organization. Therefore, more attention should be paid to this factor, directing activities properly and providing essential grounds to grow potential abilities, must be considered at the head of organizations' programs. Undoubtedly, success in knowledge-based management programs will attain productivity perfection. In this regard, there have been conducted many studies in various organizations to identify the factors affecting organization's productivity. The present research tries to study the role of each infrastructural and process factor in knowledge management on organization's productivity and how factors affect the factors. Therefore, the research main question is raised as follows: how infrastructural and process factor of knowledge management will affect organizations' productivity?

## **1. Theoretical Foundations and Hypothesis Design**

### **1.1. Knowledge Management**

Firms require knowledge to increase their ability to improve goods and services and to increase productivity and as a result, to enjoy customers and consumers. The modified goods and services should be matched by changes in systems, structures and solutions for problem solving. Although knowledge is not easily measurable, organizations should effectively manage knowledge, in order to obtain benefits that can be gained by skills, experiences and tacit knowledge of employees in their system and structure. However, one of the most important identified challenges is the ability to understand knowledge management and its objectives that there is still no general agreement on the concept of knowledge management [2].

Knowledge management is a key approach to solve business problems such as competitiveness, reducing market share, productivity paradoxes, additional information and the need for creativity in dealing with multiple companies. The logic of the need for knowledge management is based on major changes in business environment. Knowledge management is a term that has been used by a wide range of organizations in recent years and has become an important issue in business fields. Today, most scientific and business players believe that in the competitive field, only organizations with superior knowledge can protect their long-term preferences and competitive advantages. Meanwhile, in addition to use their existing knowledge correctly, they should be able to create and supply a new knowledge. In addition to fulfill missions and objectives of organization, managers of today's organizations should preserve and uphold organizational values that this is not possible except by creating and managing knowledge properly. Success in knowledge management requires creating a new working environment where knowledge and experience can be easily shared [3].

Employees' motivation is a variable that affects implementing knowledge management. People are considered as the heart of knowledge management and one of underlying factors of the knowledge management. This is employees who create, store, transfer and use knowledge. Therefore, they should have tendency and motivation to do this. Information technology and its support can be linked with implementing knowledge management. Various tools can enhance implementing knowledge management such as Internet, Intranet, Extranet etc. The purpose of developing technology is to solve a problem or dilemma in society or better using of resources and create opportunities for growth and development [4].

The factors affecting success of knowledge management are divided into six categories: leadership; culture; structures; roles and responsibilities; information technology infrastructure; and measurement. While other researchers consider the following factors as critical ones for success of knowledge management: open and trusted organizational culture; senior management leadership; staff engagement; staff training; reliable teamwork; staff power; information system infrastructure; performance measurement; benchmarking; and knowledge structure. Regarding the literature, a wide range of these elements, indicators and components are available for researchers [5].

### **1.2. Productivity**

There have been written books and articles about human force productivity, its importance in productivity of organizations, factors affecting productivity of this resource and barriers to productivity of staff. It has been addressed in various lectures and seminars. Articles and studies on classical age identify factors

affecting human resource productivity including conditions of work environment and financial incentives, and recommends managers use these factors to improve productivity of labor force. After emerging human relations' school, there were added non-financial motivational factors to the set of factors affecting productivity. There was recommended that managers consider non-financial needs of their employees and make more efficient staff by satisfying these needs. Despite the fact that the theory of requirement in management does not consider a particular factor or a group of certain factors as a factor in productivity improvement, but while stressing diversity of human needs, it is believed that there are several ways to promote productivity, which should be recognized and applied based on the needs of each organization [6]. Many factors affect definitions and views of different schools on productivity. From the past, productivity has attracted attention of scholars and researchers in different courses such as economy, industrial and organizational psychology, accounting, physics, engineering and management. Understanding knowledge, experience, backgrounds and environmental conditions has led to the definition and interpretation of productivity in different ways. Each discipline has its own principles and views about how organizations, groups, people and machines work in different environments and how their productivity is measured. The importance of management concepts is due to their contribution to organizational productivity. Managers should decide on long-term and short-term productivity to avoid problems with productivity growth. Productivity is the optimal use of time, facilities, capital and other inputs to meet organization's objectives, which is shown by the ratio of output to input. In general, productivity means effective and efficient use of data to reach the output. Many researchers define productivity as equivalent to quality, efficiency and usefulness. Also, many researchers define productivity as the sum of efficiency and effectiveness. Others consider it as the multiple efficacies in effectiveness. From scientific viewpoint, efficiency refers to the proper use of resources and effectiveness to achieve objectives; therefore, productivity refers to the optimal use of resources in pursuit of success or the same objective [7].

indicators of a healthy and productive organization include individuals who have the required skills to change programs to actions that direct organization to achieve its objectives. Such an organization needs to plan for training basic managerial techniques and practical implementation practices for all its employees. In such a situation, there will be created the require conditions for employees' self-guiding. This is an old skill that is so important in today's world. Of course, conditions of internal guidance consist of providing necessary beds for this by senior and mid-level executives. In fact, an organization must provide necessary requirements for productivity of its own manpower to increase its productivity. The objectives of improving productivity include optimal use of material resources, human resources, facilities etc. scientifically, by reducing production costs, expanding markets, increasing employment, trying to increase real wages and improving life standards so that it benefits for worker, management and general public. Productivity is a culture and a rational view toward work and life that aims to make activities more intelligent in order to make optimal use of resources and to achieve a better and more uplifting life. Increasing productivity becomes important as a basic necessity for promoting standards of a nation's life [1]. Physical resources, human resources and other factors should be scientifically used at a maximum level so that improving productivity to bring about reducing production costs, expanding markets, increasing employment and raising life standards of all sectors of the nation. Productivity is any increasing output, which is due to the increase in a unit of the input. Generally, productivity is considered as the ratio of value of results and products to the value of all spent resources for their production [8].

According to the discussed issues, the following hypotheses are presented:

1. Knowledge management infrastructural elements have a positive effect on organization's productivity.
2. Knowledge management process elements have a positive effect on organization's productivity.
- 3.

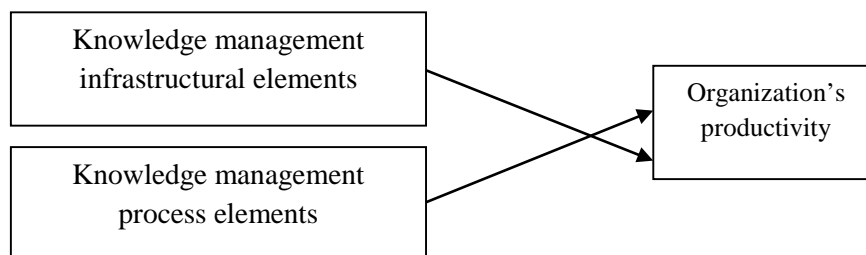


Fig. 1. The research model

#### 4. Research Method

The present research is defined as an applied research objectively because it aims to enhance productivity of organization. Also, in terms of how to obtain scientific data, it is a survey research because a questionnaire has been used to examine each of measures and variables. Its population consisted of all employees of Shahid Rahnemoon Hospital, Yazd ( $n= 276$ ). The questionnaire was distributed among 162 subjects. There were conducted many studies through studying theses and papers to fully clarify the used concepts and variables in the research and their measurement method, so that questions can be designed to examine the hypotheses. After designing the questions, a basic questionnaire was provided to guidance counselors to be corrected and verified. For formal validity, finally, 30 questionnaires were prepared and distributed among staff members of Shahid Rahnemoon Hospital. Then, their views on formal validity were examined. Confirmatory factor analysis and structural validity were investigated. The questionnaire reliability was measured using SPSS software to identify the Cronbach's alpha. Since total Cronbach's alpha value of the questionnaire and variables is greater than 0.7, so the test has an acceptable reliability. The one-sample t-test was used to examine the variables according to the mean scale of measurement. The data were analyzed using SPSS18 software. The relationships between variables and factors were confirmed using confirmatory factor analysis and structural equation modeling technique by LISREL 8.72 software.

## 5. Research Findings

The one-sample t-test for comparing the observed mean of the research variables with theoretical mean of measurement scale has shown that according to the significance level of smaller than 0.05, the mean of all variables is significantly different from theoretical mean.

**Table 1. One-sample t-test for the research variables**

Variable	Comparing the observed mean with constant value of 3				
	Mean	t-statistic	Degrees of freedom	Significance level	Mean difference
Knowledge management infrastructural elements	3.8139	20.174	445	0.000	0.81390
Knowledge management process elements	4.0404	30.305	445	0.000	1.04036
Organization's productivity	3.8363	21.456	445	0.000	0.83632

Before asserting results, it is necessary to ensure accuracy of the measurement model. In this research, confirmatory factor analysis was performed using path analysis to test the significance of the factors. This analysis was performed by structural equation modeling using LISREL statistical software.

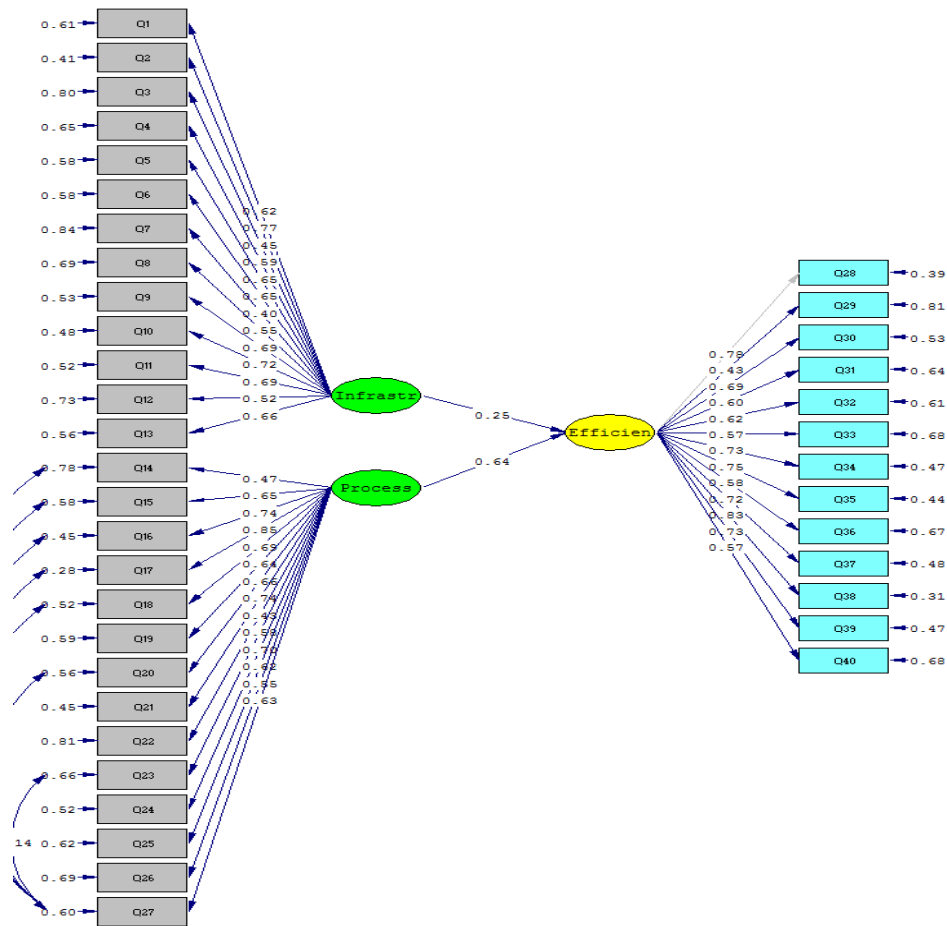


Fig 2. Model in mode of standard coefficients

To validate the model, evaluation of fitting indices has a great importance:

Table 2. Fitting indices

Indicators	The reported value
Chi square	1072.79
Degrees of freedom	417
Chi-square to degree of freedom	2.57
RMSEA	0.590
GFI	00.82
AGFI	0.78
NFI	0.96
NNFI	0.97
IFI	0.97
CFI	0.97

As seen, value of the degree of freedom is 2.57 and less than 3, which is a good value. The low level of this index indicates a small difference between the research conceptual model with the research observed data. Also, RMSEA value is 0.059 and smaller than 0.08. In addition, the less index RMSEA, the better fit of goodness of the model. NFI, NNFI, IFI and CFI indicators are greater than 0.9 and GFI index is larger than 0.8. So, the model shows a good fit and it is approved.

**Table 3.** Summary of standard coefficients, determination coefficients, t-statistic and result of the research hypothesis

Routes	Standard coefficient	t-statistic	Coefficient of determination	Result
Infrastructure elements → Productivity	0.04	2.15	0.51	Confirmed
Process elements → Productivity	0.14	5.4		Confirmed

*H<sub>1</sub>*: Infrastructural elements of knowledge management have a significant relationship with organization productivity.

As the results of absolute value of t-statistic is 2.15 and as it is greater than 1.96 at confidence level of 95%, it can be said that infrastructural elements of knowledge management have a significant effect on organization productivity.

*H<sub>2</sub>*: Process elements of knowledge management have a significant relationship with organization productivity.

As the results of absolute value of t-statistic is 5.4 and as it is greater than 1.96 at confidence level of 95%, it can be said that process elements of knowledge management have a significant effect on organization productivity.

## 6. Discussion and conclusion

The present research was conducted to investigate the effect of knowledge management elements on organization productivity. The results of structural management equation modeling showed a significant relationship between elements of knowledge management infrastructure and organization productivity. This conclusion is consistent with the obtained results by Ranjbarian and Barari (2009), Bagheri (2010) and Demsrix et al (2015). In explaining this finding, it can be said that the role of knowledge in organizations will show how to start work from the first day of the week for more effective knowledge in organization. Accordingly, it can be an effective step to improve the benefit and effectiveness of the organization's processes using technology, creativity and innovation. The structural equation modeling results showed a significant relationship between elements of infrastructural knowledge management and organization productivity. This result is consistent with the obtained findings of Khajoei and Naibzadeh (2013), Chow and Shao (2012), Marquardt (2013), Margaevida et al (2015) and Jang et al (2011). In explaining this hypothesis, it can be said that knowledge management is a key to support and promote the desired results of information technology. Emerging knowledge management concepts and tools can be seen as a response to change information technology process. Past conceptual research suggest that knowledge management can help improving company performance and competitiveness. If programs of knowledge management are implemented successfully, they will lead to the improvement of enterprise performance and productivity.

## Suggestions

As the research results showed that infrastructural elements of knowledge management have a significant relationship with organization productivity, accordingly, it is suggested to consider mechanisms for attracting knowledge from employees, customers and competitors. As the research results showed that process elements of knowledge management have a significant relationship with organization productivity, accordingly, it is suggested that organization considers various ways to develop employees' knowledge and promote them based on knowledge.

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