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The role of the Management Information System Aspects in the Organizational Efficiency of the Health Care Sector

Abdolali Keshtegar^{1*}, Hamed Sallari² and Mehdi Esmaili³

¹ Assistant Professor, Department of Management, University of Sistan and Baluchestan, Zahedan, Iran, Corresponding Author*

² MA Student, Department of Management, University of Sistan and Baluchestan, Zahedan, Iran

³ Ph.D. by Research, Department of Management, Zahedan Branch, Islamic Azad University, Zahedan, Iran

Abstract: According to the importance of the discussions on the efficiency and the effectiveness which collectively determine the organizational efficiency, in the today's world organizational efficiency development and promotion for the purpose of making optimum use of the information seems to be necessary more than any time before. It has to be pointed out in this regard that the other countries are nowadays paying a careful attention to the organizational efficiency in the organizations and do their best to provide for the prerequisite conditions and groundings to exert organizational efficiency. Thus it is necessary to take various aspects of organizational efficiency into consideration in our country for the time being. The present study aims at the survey of the efficiency and effectiveness of Ali Ibn Abitaleb (peace be upon him) hospital in the city of Zahedan by making use of the management information system. The present study is an applied research in terms of the objectives set to be pursued and it is a descriptive-survey study in terms of the methods employed for collecting the information. According to the study temporal and spatial territory, the study population in the current study includes all of the staff members working in Ali Ibn Abitaleb (peace be upon him) hospital in the city of Zahedan in 2016 the total number of which reaches to 300 individuals out of whom 169 individuals were selected as the study sample volume based on Morgan's table. The study sample volume was administered with a sufficient number of questionnaires. Considering the type of the information required in performing the study there was made use of two research methods: library searches and field studies. The questionnaires content validity was verified and confirmed by the experts and the questionnaire reliability as well was confirmed by taking advantage of Cronbach's alpha method. In the present study, the data acquired were analyzed and described by making use of descriptive statistics methods such as tabulating the data in diagrams and frequency distribution tables, frequency percent and so forth and also it is worth mentioning that the inferential statistics including linear regression and data normality tests were applied to test the hypotheses put forth in the current research paper. The study findings

indicated that the management information system components and indicators are all effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

Keywords: management information system, hospital, organizational efficiency, staff members

INTRODUCTION

Undoubtedly, the today's world should be characterized with special features and one of the most distinctive traits of the present era is the constant and astounding changes and evolutions made in the mindsets, ideologies, social values and the way things are done and many of the other phenomena, as well. Organizations are dramatically influenced by such changes and variations in the mindsets and ideologies etc. The numerosity of the changes with which the organizations usually find themselves confronted is of so much a pressure and force which crushes any sort of resistance in the today's customer-oriented and competitive world and takes everyone forward in an advancing move. Undoubtedly, the present era is faced with extensive international evolutions and threats therefore estimating the organizational vitality and keeping on surviving requires finding solutions and new methods for fighting with the problems and coping with the challenges all of which are highly dependent on innovation, initiative actions, product creation, processes and novel methodologies (Ahmadi, 2012: 1).

The problems organizations are confronted with today cannot be solved via the solutions from yesterday and forecasting the future cannot solve the future problems rather there is a need for taking appropriate measures in order to make the future (Khaki, 2008: 1).

Awareness and vigilance regarding the opportunities and acquiring the information and that in a fast and rapid pace is one of the inter-organizational activities; additionally, such a strategic behavior means expanding the organizational activities realm and discovering the opportunities (Slite, 1987: 81).

If various activities are taken into consideration, it can be clearly observed that the fundamental essence of the entire array of the management activities is decision making which is considered as the integral part of the management and it reveals itself in nearly all the management tasks; furthermore, making decisions in the today's turbulent and lumpy world would practically result in straying and embezzlement without having continuous access to the relevant information. Information is a robust source and it is often considered as bearing an axiomatic principle for the organization and it is frequently reminded of as the "vital blood of the organizations" (Kenneth & Calhoun, 2006: 46).

Management information systems can support the management in decision making processes in various organizational levels through taking advantage of novel and modern tools and collecting and processing the data. The most important task of the information systems is filtering and purifying the information. In Wiseman's idea, management information system is a system which is assigned with the duty of processing management operations for the purpose of producing reports with certain formats. According to the importance given to the discussions on efficiency in the today's world, the development and the promotion of efficiency aiming at making optimum use of the information seems necessary more than ever and it is noteworthy that the other countries have paid a great deal of attention to efficiency in the organizations and they have paved the way for the organizational efficiency. Thus, paying attention to the various aspects of efficiency in our country appears necessary for the present time (Rahnavard, 2003: 3). In this regard, the main theme of the current study is that we are in need of determining how the

various aspects of the management information system and organizational efficiency are related in the country's organizations and when such relationships are identified there is the hope that the organizational efficiency can be enhanced in the organizations striding in the country. Therefore, in the current research paper we are seeking to find an answer to the question that "is there a relationship between the various aspects of the management information systems and the organizational efficiency?"

STUDY HYPOTHESES

Main hypothesis: The various aspects of the management information system is effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

Sub-hypothesis

- Management information system's temporal aspect is effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.
- Management information system's Structural aspects effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.
- Management information system's Content aspects effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

Study concepts

In the present study, there is made use of management information system and its aspects as the independent variable all of which are excerpted from Ahitov and Newman's model (2002) and the dependent variable chosen for the present study is the organizational efficiency and the study conceptual model has been illustrated as below:

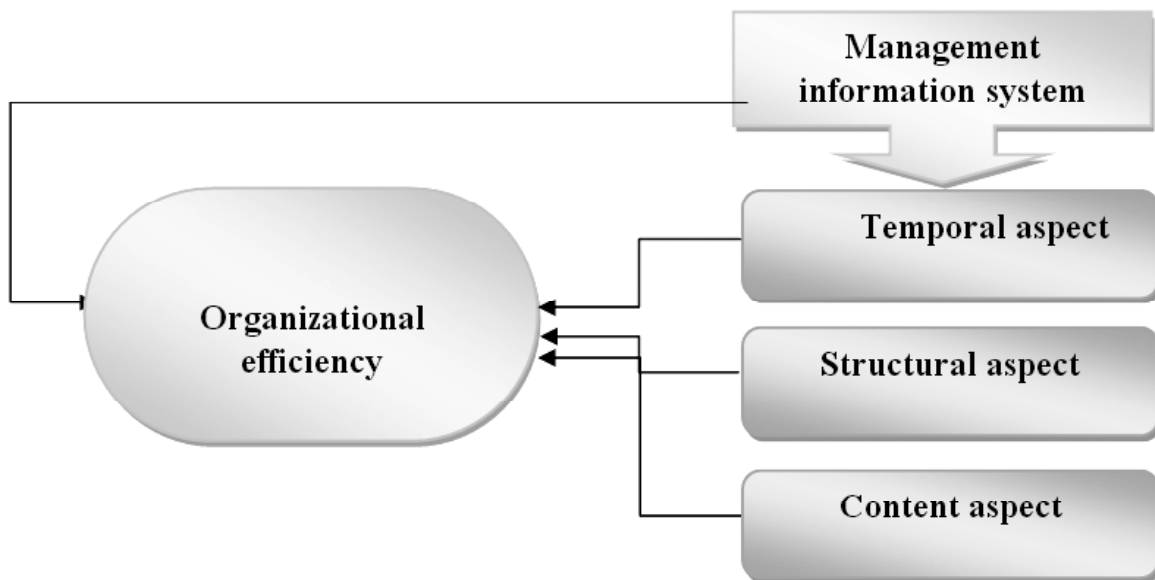


Figure 1: Study conceptual model

Study Methodology

The present study is an applied research in terms of the objectives it is pursuing and it is a descriptive-survey method according to the methodology it uses to collect the data. The study population includes all of the staff members working in Ali Ibn Abitaleb (peace be upon him) hospital in the city of Zahedan the total number of which reaches to 300 people out of whom 169 individuals were selected as the study sample volume based on Morgan's table. According to the type of the information required for carrying out the present study there is made use of two study methodologies: investigating the existing documents and evidences and performing field studies. To quantitatively analyze the information and also for gathering the attitudes and propensities of the managers and the employees there is made use of questionnaire. The questionnaires have been designed in such a manner that the data assessment can be conducted based on Likert's scale. To measure and evaluate the variables "management information system" and the "organizational efficiency" we have made use of the ordinal or ranking scales. To determine the validity, the MIS questionnaires and the organizational efficiency scales were handed over to the supervising professor and three of these respectable professors inspected the questionnaires and inquired for their own ideas regarding them. And, finally, the questionnaires' validity was confirmed. To verify the questionnaires credibility and reliability, Cronbach's alpha method was applied. Cronbach's alpha coefficient for the MIS questionnaire was obtained 0.852 and the organizational efficiency Cronbach's alpha coefficient was calculated 0.874. Therefore, according to the coefficients obtained it can be claimed that both of the questionnaires enjoy the required validity. In the present study, descriptive statistics and inferential statistics including correlation coefficient and linear regression and data normality tests were applied to examine the study hypothesis. All of the data analyses were carried out by taking advantage of SPSS and OFFICE software.

RESEARCH FINDINGS

Main hypothesis: Aspects of the management information system is effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

To determine the effectiveness, goodness-of-fit in regression model was analyzed which was discussed below. To propose the model of the relationship between Aspects of the management information system (Y) and Organizational efficiency (X) after investigating its adequacy indicators in below table, the model is presented.

Table 1
Goodness of fit of regression model between Aspects of the management information system and organizational efficiency

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.181	0.033	0.026	10.69

The relationship between independent variables and the dependent variable equals to .181. R Square is .033 which shows that 3.3 percent of variation in Aspects of the management information system is predicted by organizational efficiency. Because this measure do not consider the degree of freedom, adjusted R Square was used which equals to 2.6 in this study. According to the indices, the model was adequate.

Table 2
Regression equation of
organizational efficiency

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	Constant	62.74	10.35	0.181	6.06	
	Aspects of the management information system	5.45	2.46		2.212	0.029

Dependent Variable: organizational efficiency

The inserted variable in regression equation is the core of regression analysis which can be seen in Table 2 the regression equation is provided by unstandardized coefficients.

$$\text{Organizational efficiency} = 62.74 + (5.45) \text{ Aspects of the management information system}$$

It can be said that with increase of one unit of each independent variable depending on the written coefficient, the dependent variable is increased. In other words with increase of one unit in Aspects of the management information system, the standard deviation 5.45 unit of organizational efficiency is increased, so they have positive relationship. T-test relating to regression coefficients are displayed in the table for independent variable as well. The sig. value equals to .029, so Aspects of the management information system has a meaningful effect on organizational efficiency.

Sub-hypothesis 1: Management information system's temporal aspect is effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

To determine the effectiveness, goodness-of-fit in regression model was analyzed which was discussed below. To propose the model of the relationship between Management information system's temporal aspect (Y) and Organizational efficiency (X) after investigating its adequacy indicators in below table, the model is presented.

Table 3
Goodness of fit of regression model between Management
information system's temporal aspect and organizational efficiency

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.365	0.134	0.125	0.333

The relationship between independent variables and the dependent variable equals to 0.365 R Square is 0.134 which shows that 13.4 percent of variation in Management information system's temporal aspect is predicted by organizational efficiency. Because this measure do not consider the degree of freedom, adjusted R Square was used which equals to 12.5 in this study. According to the indices, the model was adequate.

The inserted variable in regression equation is the core of regression analysis which can be seen in Table 4 the regression equation is provided by unstandardized coefficients.

Table 4
Regression equation of organizational efficiency

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	Constant	2.86	0.283	0.364	10.10	
	Management information system's temporal aspect	0.313	0.066		4.70	0.000

Dependent Variable: organizational efficiency

$$\text{Organizational efficiency} = 2.86 + (0.313) \text{ Management information system's temporal aspect}$$

It can be said that with increase of one unit of each independent variable depending on the written coefficient, the dependent variable is increased. In other words with increase of one unit in Management information system's temporal aspect, the standard deviation 0.313 unit of organizational efficiency is increased, so they have positive relationship. T-test relating to regression coefficients are displayed in the table for independent variable as well. The sig. value equals to .000, so Management information system's temporal aspect has a meaningful effect on organizational efficiency.

Sub-hypothesis 2: Management information system's Structural aspect is effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

To determine the effectiveness, goodness-of-fit in regression model was analyzed which was discussed below. To propose the model of the relationship between Management information system's Structural aspect (Y) and Organizational efficiency (X) after investigating its adequacy indicators in below table, the model is presented.

Table 5
Goodness of fit of regression model between Management information system's Structural aspect and organizational efficiency

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.271	0.073	0.067	0.347

The relationship between independent variables and the dependent variable equals to 0.271 R Square is 0.073 which shows that 7.3 percent of variation in Management information system's Structural aspect is predicted by organizational efficiency. Because this measure do not consider the degree of freedom, adjusted R Square was used which equals to 6.7 in this study. According to the indices, the model was adequate.

The inserted variable in regression equation is the core of regression analysis which can be seen in Table 6 the regression equation is provided by unstandardized coefficients.

$$\text{Organizational efficiency} = 3.54 + (0.156) \text{ Management information system's Structural aspect}$$

It can be said that with increase of one unit of each independent variable depending on the written coefficient, the dependent variable is increased. In other words with increase of one unit in Management

Table 6
Regression equation of organizational efficiency

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	Constant	3.54	0.193	0.271	18.39	
	Management information system's Structural aspect	0.156	0.046		3.38	0.001

Dependent Variable: organizational efficiency

information system's Structural aspect , the standard deviation 0.156 unit of organizational efficiency is increased, so they have positive relationship. T-test relating to regression coefficients are displayed in the table for independent variable as well. The sig. value equals to .001, so Management information system's Structural aspect has a meaningful effect on organizational efficiency.

Sub-hypothesis 3: Management information system's Content aspect is effective on the organizational efficiency of Ali Ibn Abitaleb (peace be upon him) hospital.

To determine the effectiveness, goodness-of-fit in regression model was analyzed which was discussed below. To propose the model of the relationship between Management information system's Content aspect (Y) and Organizational efficiency (X) after investigating its adequacy indicators in below table, the model is presented.

Table 7
Goodness of fit of regression model between Management information system's Content aspect and organizational efficiency

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.130	0.017	0.010	0.357

The relationship between independent variables and the dependent variable equals to 0.130 R Square is 0.017 which shows that 1.7 percent of variation in Management information system's Content aspect is predicted by organizational efficiency. Because this measure do not consider the degree of freedom, adjusted R Square was used which equals to 1 in this study. According to the indices, the model was adequate.

Table 8
Regression equation of organizational efficiency

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig
		B	Std. Error	Beta		
1	Constant	3.81	0.239	0.130	15.94	
	Management information system's Content aspect	0.088	0.56		2.57	0.017

Dependent Variable: organizational efficiency

The inserted variable in regression equation is the core of regression analysis which can be seen in Table 8 the regression equation is provided by unstandardized coefficients.

$$\text{Organizational efficiency} = 3.81 + (0.088) \text{ Management information system's Content aspect}$$

It can be said that with increase of one unit of each independent variable depending on the written coefficient, the dependent variable is increased. In other words with increase of one unit in Management information system's Content aspect, the standard deviation 0.088 unit of organizational efficiency is increased, so they have positive relationship. T-test relating to regression coefficients are displayed in the table for independent variable as well. The sig. value equals to .017, so Management information system's Content aspect has a meaningful effect on organizational efficiency.

DISCUSSION AND CONCLUSION

Although the role of information systems has been defined as a source of supplying the information required by the users, particularly the managers, the information demanded by the managers differs in various levels. Thus, in designing the information systems there is a need for the various levels of the managements to be taken into consideration since this is influential on both the information source and on the way the information should be delivered, as well. Management levels are operation management, intermediate management and senior management (Foster, Lucia, John, 2009). Senior management in contrast to the lower level management usually places a greater emphasis on the information from the external sources of the organization whereas the executive managers pay more attention to the internal information. Senior management, as a result of the nature of their job, prefers the information to be presented in brief while the executive managers are needful of complete and accurate information. Based on this, organizing the information in respect to the management levels and efficiency analyses and effectiveness measurement of the management information system is highly essential regarding the management decision-making process.

In the today's highly competitive world the organizations should learn how to make fast decisions to adapt and coordinate with the status quo of the affairs in the world and they have to learn from their bad experiences and the mistakes they had made previously. One of the most important tools which will assist the managers in this regard is the up-to-date management information systems (Zafar, 2013) which will be taken into practical use as the managers' powerful arm through taking widespread advantage of the technological facilities and resources. Such systems enable the managers to make fast decisions and select the best solutions among the entire array of the extant solutions in a short time (Romer et al, 2001).

No doubt, the fast pace of the changes in the peripheral environment and the increasing complexity of the today's organizations augments the managers' need of the information, the losses resulting from the weak decision making acts are irreparable and also the effects of the appropriate decision making which is adopted in a timely manner cannot be described in words.

STUDY SUGGESTIONS

- The best hardware available in the organizations should be improved according to the needs in respect to the management information system.

- Comprehensive and coordinated software as required by the organizations' management information system should be prepared by making use of the extant software.
- The management should take steps in staffing the organization with specialized and skilful human resources as required by the information systems sector regarding advanced hardware and software technologies and the extant workforce should, as well, be trained within the supplemental training programs in order to be upgraded.
- The intermediaries in transferring the information to the managers should be eliminated as a result of which we can bear witness to a lesser degree of information distortion (the real and correct information will be transferred to the management). The companies' managers should try to create an atmosphere of trust and hope among the staff and particularly in the companies' information experts in the designing and implementation processes and they are also required to align the staff goals with the organizational objectives.

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