

The Analysis of the Relationship Between IT and the organizational Agility of Bojnourd Social Security Hospital

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Abstract

In the current research the relationship between the acceptance of IT and organizational agility of Bojnourd Social Security Hospital is analyzed. In this regard, Davis's technology acceptance model (TAM) and organizational agility, based on the model of London Institute study, has been examined. The statistical population is the entire hospital staff of 360. The sample size was determined 186 by using Krejcie and Morgan table. This research is practical in terms of purpose, and in terms of method, it is correlative and gauging. To collect information on the acceptance of IT and organizational agility, Sheykh Shoaie questionnaire and Spears questionnaire are used respectively. To determine the reliability of the questionnaires, Cronbach's alpha coefficient is used (IT questionnaire 92% and organizational agility 96%) and, to determine the validity of them, content validity is utilized. To analyze the data, indicators such as frequency, percentage and drawing tables and graphs are used on the level of descriptive statistics. Moreover, Spearman correlation coefficient is utilized on the inferential statistics level and, by and large, they suggest that there is a significant relationship between the perceived usefulness compared to IT application and organizational agility, between the perceived ease of use compared to IT application and organization agility, Between attitudes toward the use of IT and organizational agility, and Between the tendency to use IT and organizational agility.

Keywords: Technology Acceptance Model, organizational agility, perceived usefulness, the perceived ease of use.

Introduction:

IT utilization leads to an increase in staff knowledge and enriches job contents. Knowledge of the employees leads to their professional dominance over the organization and, if it is true that knowledge is power, then we can claim that the organizations in which IT becomes omnipresent, the staff wield more power(Sarafizadeh. P.254,1388) Today, the issue of adoption and use of IT is being discussed in every organization, for it makes a radical change in the process of bureaucracy and increases management and staff efficiency, production diversity, and customer satisfaction. That is the reason why programmers are continually dealing with the process of making decisions on accepting and utilizing IT in organizations. Agility can be defined as the close alignment of the organization with changing business needs in order to gain a competitive advantage. In such an organization, staff goals are in line with organizational goals and these two are intended to give an appropriate response to the changing needs of the customers (Jafarnezhad and Shahabi, 1386). Bill Gates, Microsoft's founder and CEO, says that if organizations are able to adroitly and intelligently create the evolution mechanism in themselves, then they should not be worried about unpredictable future. In other words they must make changes in their services, products and processes faster than their rivals (Jafarnezhad and Shahabi, 1386). Agility enhances the ability of organizations to deliver high quality products and services; therefore, it is an important factor in the efficiency of the organization (model government, 8:1387). The aim of an agile organization is to satisfy its staff and customers. An organization necessarily has a set of capacities to respond to changes in the business environment. Since most business situations in most companies are found in a huge amount of unpredictable demands, a rapid increase in agility is required (model government, 1:1387). So the main question of this study is whether there exist a significant relationship between the use of IT and organizational agility in Bojnourd Social Security Hospital.

Literature review

National studies:

Fathian and Salehi (1383) conducted a research entitled *The Role of Information Technology in the Agility of Small and Medium Enterprises in Iran*. The research has shown that in small and medium enterprises of Iran, the average impact of IT on the development of human resources is more than other agility pivots. The same is correct for service organizations, in which the impact of IT on effective communication with insiders and outsiders and also on quickly responding to market changes and environment, rises above other agility pivots. According to the study, Potential impact of information technology on organizational agility has not been put into practice yet and it is necessary to pay special attention to some of the agility pivots.

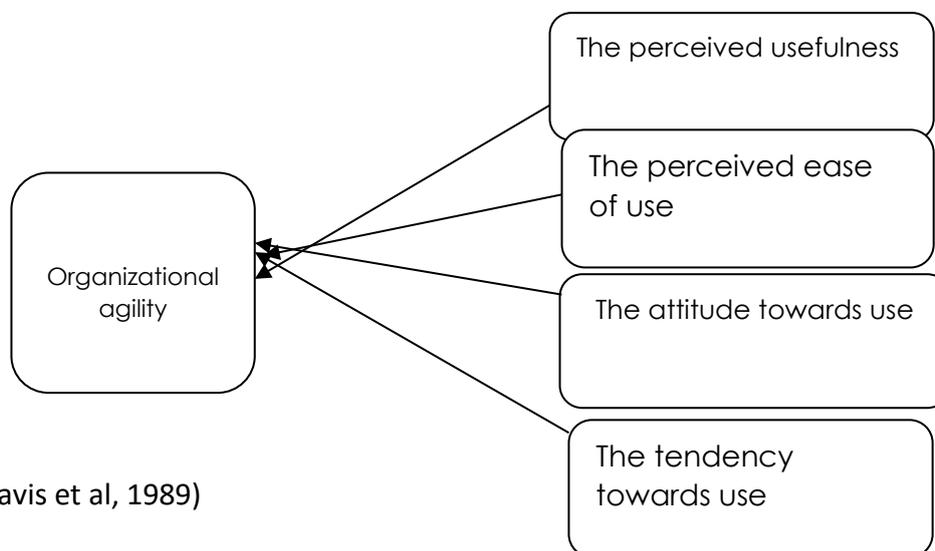
Rajabzadeh and Shahabi(1385), had an article published in the Second International Administration, Information and Communications Conference entitled *A Presentation of the Measurement Model of Agility in Governmental Organizations and a View of IT Impact on Organizational Agility*. In this article, with a literature review of agility measurement and emphasis on the role of IT, a conceptual innovative model for measuring the agility among the governmental organizations was presented.

Fathian and Fekri carried a research entitled *The Impact of Information Technology on Organizational Agility in Iranian Enterprises*. The purpose of the study has been the utilization of IT to increase the organizational agility and analyzing its effect on Iranian enterprises. This research was empirically conducted, i.e. by distributing a number of questionnaires among the managers. The results show that utilizing IT is of paramount importance and is vitally necessary to organizational success and to turning from institutions to agile organizations. Zeen and Roose have conducted a research entitled *A Study of the Relationship between the Acceptance of Information Technology and Organizational Agility in Manufacturing Organizations in Malaysia*. The results indicate that the positive relationship between the acceptance of IT and the ability to become an agile competitor has existed. Moreover, the quality of information and being supported by senior managers, attitudes toward the use of IT and the actual use of IT have had considerable direct effects on organizational agility of manufacturing companies. The key to increasing organizational agility is to improve the attitudes of administrators and operation managers towards IT and also to institutionalize positive mental norms for the use of information technology. In this context senior management support is considered crucial.

Conceptual model and the research hypotheses:

For a scientific and systematic research, a practical and theoretical framework is required, which is the so-called conceptual mode. The conceptual model of this study is as follows:

On the right side of the model, the dimensions of The acceptance of IT are situated, including the perceived usefulness, the perceived ease of use and the tendency towards use, and on the left side, organizational agility is situated as the dependent variable.



Source: (Davis et al, 1989)

Research objectives:

The main objective: determining and getting to know the relationship between The acceptance of IT and the agility of the organization in Bojnourd Social Security Hospital.

The secondary hypotheses:

1. Determining and getting to know the relationship between the perceived usefulness of IT and the agility of the organization in Bojnourd Social Security Hospital.
2. Determining and getting to know the relationship between the perceived ease of use of IT and the agility of the organization in Bojnourd Social Security Hospital.
3. Determining and getting to know the relationship between the attitude towards making use of IT and the agility of the organization in Bojnourd Social Security Hospital.
4. Determining and getting to know the relationship between the tendency towards making use of IT and the agility of the organization in Bojnourd Social Security Hospital.

Hypotheses

There is a significant relationship between the acceptance of IT and organizational agility in the Bojnourd Social Security Hospital.

The secondary hypotheses:

1. There is a significant relationship between the perceived usefulness of IT and the agility of the organization in Bojnourd Social Security Hospital.
2. There is a significant relationship between the perceived ease of use of IT and the agility of the organization in Bojnourd Social Security Hospital.
3. There is a significant relationship between the attitude towards making use of IT and the agility of the organization in Bojnourd Social Security Hospital.
4. There is a significant relationship between the tendency towards making use of IT and the agility of the organization in Bojnourd Social Security Hospital.

Introducing the variables:

a) Independent variable or the predictor

The present study proposes the adoption of information technology as an independent variable, or predictor, and we are going to examine its relationship to the agility of the organization.

b) Dependent variable or the criterion

The present study proposes the agility of the organization as the main variable, and we are going to examine its relationship to the acceptance of IT.

c) Moderator variables

In the present study sex, employment type, educational degree, work experience and the employees' age act as the moderator variables.

Statistical population:

- 1- Any scientific research is conducted with the aim of understanding a particular phenomenon within a statistical population. Therefore, the research topic might include its features, functions and variables, or it might examine the relationships between variables, active and reactive attributes and influential factors in society.
- 2- The statistical population refers to all the people, events or things that the researcher wants to carry a study on (Secaran, 1381:294). In this research, the statistical population is Bojnourd Social Security Hospital staff of 360.

Sample size and sampling:

The sample group is a small subset of the statistical population including some of the members chosen from the statistical population. Therefore, the sample group is a small subset of the statistical population that enables the researcher to extend the results to the entire statistical population (Secaran, 1381:295).

The sample includes all the Bojnourd Social Security Hospital staff, which based on stratified random calculation method, amounts to 186.

Methodology

A – type of research method:

From the view point of methodology, this paper is a kind of survey - correlational. In terms of the kind of supervision and degree of control, this study is considered as a field study. Applied research attempts to answer scientific issues and problems that exist in the real world (Khaki, 1382: 94).

B – The method of data collection:

Method of data gathering is conducted using both library and field.

C – Tools of data collection:

In order to collect the necessary information, we use available books and articles in the library, the Internet and standardized questionnaire. For measuring ICT adoption, Questionnaires (Shoaie 1386) and for measuring organizational agility, standard questionnaire (Aspritzer 2007) was used.

D - Method of data analysis:

Method of data analysis in this study is in the following ways:

1 - Descriptive statistics for estimating central parameters and set the statistical distribution tables were used.

2 - Inferential statistics (variance analysis) is used to test the hypotheses. We should know, to generalize the results of research, we commonly use statistical tests. This research, for analyzing data with the help of software SPSS, statistical test of regression analysis was used. Regression analysis is a statistical technique in which the dependent variable, the variable or independent variables are explained and predicted (Saei , 1381 : 151).

The realm of research

Location of this study is in the social security hospital in the city of Bojnourd.

Scope of investigation

Period of this research, from the date of enactment, is around 6 months.

Descriptive analysis of the data:

Testing of the main hypothesis

There was a significant relationship between IT acceptance and organizational agility .

H0: There is no correlation between the adoption of information technology and the agility of organizations.

H1: There is a correlation between the adoption of IT and enterprise agility. As can be seen in Table 1 , it can be said that between the adoption of information technology (independent variable) and organizational agility (the dependent variable) , there was solidarity (30 / 0) and between these two variables, with a 99% confidence coefficient, is significant positive relationship . So, H1 is accepted.

Examine the relationships among the main factors forming technology acceptance model with enterprise agility:

Generally according to the classified findings in this table, there is a high consistency between the main factors forming a IT acceptance model. And there is a high correlation between the organizational agility and these factors.

The testing of first sub-hypothesis:

Between the perceived usefulness of the application of information technology and organizational agility, there is a relation.

H0: there is no correlation between the perceived usefulness of the application of IT and agility of organizations.

H1: there is a correlation between the perceived usefulness of the application of IT and agility of organizations.

As shown in Table 3, one can say that between the (independent variable) benefits perceived (the dependent variable) enterprise agility, cohesion (25 / 0) exists between these two variables with 99% confidence coefficient correlation of positivity is established. Thus, H1 is accepted.

Testing of the second sub-hypothesis:

Between perceived ease toward to use of IT and enterprise agility , there are also significant relationship.

H0: Between perceived ease toward to use of IT and enterprise agility , there is no significant correlation

H1: Between perceived ease toward to use of IT and enterprise agility , there is a significant correlation

As can be seen in Table 4 , we can say that between the (independent variable) the ease of understanding and (dependent variable) organizational agility , cohesion (27 / 0) exists between these two variables is significant positive relationship is established with a 99% confidence coefficient. Thus, H1 is accepted.

Testing of the third sub-hypothesis :

Between attitudes towards the use of IT and enterprise agility there is a relation .

H0: the attitude toward use and organization agility there is no correlation .

H1: the attitude toward use and organization agility there is a correlation .

As can be seen in Table 5 , we can say that between (independent variable) attitude toward the use of technology and (the dependent variable) organizational agility , cohesion (18 / 0) exists between these two variables is significant positive correlation with 95% confidence

coefficient is established. Thus, H1 is accepted.

Testing of the fourth sub-hypothesis:

Between the desire to use IT and enterprise agility there is a relation .

H0: Between the desire to use IT and enterprise agility there is no correlation .

H1: Between the desire to use IT and enterprise agility there is a correlation

As can be seen in Table 6 , we can say that between (independent variable) tend to use technology and (dependent variable) organizational agility , cohesion (23 / 0) exists between these two variables is significant positive correlation with 99% confidence coefficient is established. Thus, H1 is accepted.

Summary results of hypotheses

The main hypothesis of the research:

There is a significant relationship between IT acceptance and organizational agility , as indicated in Table 2, one can say that between (independent variable) the adoption of information technology and (dependent variable) organizational agility , there is a positive correlation with confidence coefficient 99 / 0, so the main research hypothesis is accepted. This result is exactly in consistent with the result of the study (Zin and Rooz , 2005 , Rahmani 1390)

The first sub-hypothesis :

Between the perceived usefulness toward to application of technology and organizational agility , there is a significant relationship. As in Table 3 were observed , one can say that between (independent variable) perceived usefulness and variable (dependent) organizational agility ,there is a positive correlation with confidence coefficient 99 / 0, then the first hypothesis is accepted.

However, compared with the results of the study (Zin and Rooz , 2005), that usefulness variable use of IT with the mediation variable, tend to use IT on agility in manufacturing organizations in Malaysia have affected , our results indicate that in the health network, variable benefit immediately and directly have a significant relationship with Agility , in the other hand similarity of these two studies show a significant relationship between usefulness variable and organizational agility .

The second sub-hypothesis :

Between perceived ease toward use of technology and enterprise agility , there is a significant relationship. As shown in Table (4), it can be said between the independent variables , perceived ease and the dependent variable organizational agility, positive correlation with confidence coefficient 99 / 0 is satisfied , the second hypothesis is accepted.

The research study (Zane and Rooz, 2005) found that perceived ease of variables in this study with mediation of attitude towards IT use is associated with organizational agility and not establish any direct link between these two factors, Generally similarity in these two studies suggest that two factors are easily understood and meaningful relationship with enterprise agility.

The third sub-hypothesis :

Between the attitude towards the use of IT and organizational agility is a meaningful relationship. As shown in Table (5), it can be said between the independent variable attitude towards the use of IT and the dependent variable organizational agility, there is a significant positive correlation with 95 / 0 is satisfied, the third hypothesis is accepted.

Compared to the research study (Zane and Rooz, 2005) found that the correlation between attitude to the use of IT and organizational agility is significantly below that found in our study contrasts with the results of this study because There is a significant correlation between the two variables. The two studies that show similarities in attitudes towards the use of IT and enterprise agility by two factors are interrelated.

The fourth sub-hypothesis :

Between the desire to use IT and enterprise agility is a meaningful relationship. As shown in Table (6), it can be said between the independent variable desire to use IT and the dependent variable enterprise agility, a significant correlation existed, the fourth hypothesis is accepted. The results of our research together with study (Zane and Rooz, 2005) between two variables tend to use and enterprise agility are consistent and there is a relationship.

5-3 - Discussion and interpretation:

The advent of new technology of information and the impact that has had on various aspects of life, has led to the emergence of some fundamental change in human relations. This phenomenon affects human demands with impressive pace and has created new needs. Today, ICT can be a powerful tool for improving the quality and efficiency of staff used. Development of devices based on these technologies and rapidity of implementation requirements has led to a new form of interactive and creative learning environment. Based on this information, particularly information that appears to have a central role in the organization or strategy can build a base of power, as well as leveraging used. Organizational agility is meaning to organization's ability to create customized products in a short time, high reliability, low cost and time. Organizations to achieve agility needs to agility enablers that a large number of them directly related to IT constructs such as information technology hardware and equipment, multi-function devices, internal networks, systems, information integration, planning, etc.

In this research, between variables perceived usefulness and perceived ease at a confidence coefficient level of 99/0, there is a significant positive correlation. another point is that the study shows that in our research, like many of the studies accepted (Mohaghar and Shirmohammadi, 1383 - Bagheri et al, 1388 - Sheikh Shoaee and Oloomi, 1386, Rahmani, 1390) perceived ease has an influence on perceived usefulness. In other words, as people in using the system, feel comfortable, feel more usefulness for system to perform their tasks.

In this study, between variables of perceived usefulness and perceived ease and attitudes toward technology uses, a significant correlations were found. Unlike its in contrast with the results of the study (Pan and Spu and Barfi, 2003). So these three factors are the most influential factors in the acceptance of information technology. as more usefulness of IT in the mind of staffs, more positive attitude toward use of technology and as ease of use of technology was more, more positive attitude toward use of technology, these results is consistent with the results of(Salari and Yaghma'ee, 1388 - Sheikh radial and Science, 1386 - Bagheri et al, 1388 - Rahmani, 1390 - Park, 2009, Vrlj Vlavl, 2010).

In this study, between the attitude towards the use of IT and the desire to use IT is a meaningful relationship. So the more positive their attitudes towards the use of IT, more stronger in decision to use IT and the results of the studies (Sheikh Shoaie and Oloomi, 1386, Rahmani, 1390, Pan et al, 2003) are consistent.

The overall results of our study show us, for the inclusion facilitated activities in adoption of IT, which areas should be considered more. However, findings due to the present study, detected factors influencing the adoption of technology in the frame of model as influencing factors on adoption of IT that is consistent with studies (Salari and Yaghma'ee, 1388 - Rahmani, 1390 - Aspsy and golding and mary, 2004 - Vrly Vlavr, 2010), respectively.

Therefore, the results obtained can be deduced that our employees, the adoption of IT and enterprise agility in their organizations are high and strong and Correlation rate in belief about the usefulness and ease and attitude and tend towards the use of IT and organizational agility is highly significant and positive.

The results is expressing the reality that: the higher mentality of employees (about the usefulness and ease of use of information technology available to perform tasks at work), and the higher the degree of belief (about using of technology improve their performance without spending a lot of time and energy to learn it), shall cause the employee goals with organizational goals be together in one direction and then seek to gain competitive advantage and flexibility and enterprise agility.

Considering the correlation coefficients between the main factors forming technology acceptance model and organizational agility, we achieve this important thing that in the organizations studied in this research, employees got the benefit from the ease and advantages of the use of IT and organizational agility and positive attitude in implementing the nimble and agile IT organization, so in these fields are well trained and have positive beliefs about the relationship of these factors with the agility of the organization, including the issues world.

Suggestions based on results of hypothesis

According to the hypothesis is proposed:

- 1 - Factors affecting strong communication between employees of different units of the organization are identified.
- 2 - On index of achieving skills in the use of new technologies should focus on employees.
- 3 - Will focus on mechanisms to increase organizational flexibility.
- 4 - Suggested that factors influencing employees' willingness to use new technologies for future work tasks are identified and strengthened.
- 5 - For using information and communication technology in strategic and organizational level, careful planning is needed. These plans include in-depth study of culture, organizational capability, change, external environment of the organization, the level of management support, to meet the information needs of organization and the way for meeting them. Also investigate communication and IT skills in organization to be sure that there is suitable and adequate manpower for maintenance the hardware system as well software.
- 6 - Shortage of ICT knowledge in managers is hindering the adoption of this technology in organizations. Consequently, prior to ICT was used effectively in organization level, managers should be taught in different fields in this technology but unfortunately managers have been

involved in other aspects of technical and dense work that there is no possibility for attention to other dimension of organization management.

7 - Strategies for using ICT helps managers to taking available opportunities when they implement ICT. For prevention of renewed, parallel and delay costs in implementing of big ICT projects of organizations, first development strategies with details , scheduling, acquiring tools and available ways developed and approved. Programs changes from director-based to program-based in new technology. In setting of activities related to ICT, the current situation, direction, coordination efforts, the investment framework, budget allocation, managers belief and confidence coefficient and activities that managers face during a future period is defined and cleared.

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