International Journal of Academic Research in Business and Social Sciences
September 2013, Vol. 3, No. 9
ISSN: 2222-6990

Assessing office automation effect on Innovation Case study: Education Organizations and Schools in Esfahan Province, Iran

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DOI: 10.6007/IJARBSS/v3-i9/209 URL: http://dx.doi.org/10.6007/IJARBSS/v3-i9/209

Abstract
Today organizations act in a dynamic, very ambiguous and changing environment. So each organization has to deliver high quality services and benefit from innovative systems to be successful in such an environment. This research aims to explore the relationship between implementation of office automation and innovative using structural equitation modeling method (SEM). Aim of this research is applied and its method is survey-descriptive. Statistical society is managers of education organizations and schools in Esfahan and Lenjan cities. 130 individuals were selected as sample by randomly sampling method. Content and construct validity were used In order to evaluate validity of questionnaire and relations between variables of this research have been confirmed based on results of SEM method. Regarding obtained results, effectiveness amount of office automation on innovation is measured equal to estimated standard amount as 0/24. Obtained results from main hypothesis test of this research completely conform which there is about office automation in studied organization.
Key words: Information technology, Office automation, Innovation, Education.

Introduction

Survival of each organization depends on its dynamic interaction with internal and external environment. Development of technology and entrance of organizations to service economics has changed quality of services to a challenging issue for organizations in such way that success of any organization depends on having high quality and innovative services(Yazdani et al., p.53-69). In the late 20 century much extended changes in all domains of business have been occurred around the world that has created serious challenges in handling and managing affairs of private and public sector. One of the proceedings adopted by governments to deal with these challenges is using innovation. Innovative action is a pervasive and necessary necessity for all organizations including private, public, voluntary etc. in any size (Kazemi et al.). Application of new communications and information technologies has created significant

changes in products, activities and life of people. Communications and information technologies quickly change social structure and lifestyles of people around the world and Information societies which aim at production of information and scientific knowledge are extending (Alagheband, 2007). Today, importance and necessity of the innovation (individual or organizational) has been recognized for Many organizations and companies and most of economical and social sectors . This tendency is mainly caused by new complicated situations and conditions that have developed technological and competitive impasses in organizations and have caused serious problems in continuity of traditional methods . This fact caused office automation to be implemented in education organization first in organizations and then in schools in 2007(Modi,2012). Also schools and education organizations of Esfahan have tried to implement information technology systems and office automation in order to improve their decision making process and also to provide innovation beds to make themselves synchronized with environmental changes and provide necessary conditions in order to increase education system performance . Today automation and using new technologies is not only considered as a need but as a critical necessity. Organizations including education organization with regard to span of their practice scope and frequency of activities related to their duties and responsibilities must pay special attention to this fact. Regarding stated necessity and lack of a comprehensive research in this regard, this research tries to explore and consider relationship between mentioned structures in order to assess effect of office automation implementation on innovation.

Research Literature

Information Technology

Increasing use of information and communications technologies facilitates movement towards a knowledge-based society that this provides ways which help development. This increasing procedure has developed some fundamental and multilateral changes in people life. These new technologies change interactions between people and society (Sarafizadeh Ghazvini et al. 2011). Communications and globalization are two available samples that show how information technology could eliminate time and place obstacles .Significant results of this trend has changed lifestyle of people and produce main changes in business . In result development and is created that removes users challenges and make them happy and satisfied (Turban et al.2007). There are some main problems such as lack of planning, implementing information systems inappropriately, lack of integrity, and inability to protect the information and data security that cause information systems and technology to be used in an inefficient manner (Rey, 2007).

Office automation:

Office automation includes all official and unofficial electronic systems which is related to establishment of information communication between individuals inside and outside institute and vice versa. The main word which makes office automation different from data processing, management information system and decision support system is communication. Office automation includes application of electronic devices in office activities in order to increase efficiency that is provided in result of completion of information exchange inside office and between offices and their environment and finally by presenting better information to make

decision can be beneficial for manager(Beheshtian, 1999). Some of office automation definitions are: application of electronic or computer devices by human in order to appropriate utilization from data or produce outcome (Yang et al. 2007). Office automation is defined as applications of electronic and electromechanical devices to increase staff efficiency (Mcleod, 1987). Office automation system is a system which provides Administrative correspondence as written, oral or visual and transfers them after being stored, corrected and presented (Sarafizadeh and Alipanahi, 2002).

Innovation

There are many definitions about innovation in literature. Although most definitions share a knowledge that can be changed to products, processes and new services and meet changing demands of customers(Nystrom, 1990). Carnegie and Butlin(1993) define innovation as a new or improved thing and applied by institute in order to create value added(as direct for institute or customers). Livingstone(1998) defines innovation as new products or processes that increase value of new products in order to creative use of information and efficient human resources management systems. Innovation is acceptance of an instrument, system, policy, program, process, product or new service that can be provided inside organization or outside it and be new for organization (Hult and Ketchen, 2001). Herkema(2003) defines innovation as a knowledge process that help to create new knowledge in order to develop commercial and appropriate solutions . According to Chen et al. (2004) innovation refers to identification of a new combination of production main factors inside production system. Innovation is related to changes and can be as developmental or reformative. Also innovation can be defined as application of discoveries and introductions and a process which can develops new results(Gloet and Terziovski) . Innovation means to provide constant value for customers. Innovation is successful implementation of creative ideas in organization. In this view creation by individuals and teams is a main point in innovation (Rhee et al.). Innovation is a process by which knowledge, in order to create new knowledge, is obtained, shared and incorporated to be used in new products and services. Innovation is adoption of an idea or behavior that is new for organization (Chen et al., 2012).

Education

Education is a process of realization and balanced evolution of any individual existential wholeness in order to satisfy social needs on the one hand and the higher purpose of achieving the pious self on the other hand(Beheshtian, 1999). The philosopher Plato defines Paideia as a type of education. This word is derived from pais which means child and is referred to what we know as education and preparation for life (A.B. Casel, 1970, page.146).Paideia is the last Greek word for the meaning of culture. When Varo and Cicero were forced find a word to express such culture they selected the word Humanization which means endow with human characteristics or attributes (Cacel, 1970, page.148). General pattern of official organizations , Institutes and entities of societies that have responsibility to transfer and develop culture , overall upbringing of individual and training skillful human power are named education system(Alagheband,1994, p.7).But on the other hand these technologies in education system have been meet some problems and resistances caused by employees, teachers, students and their parents.

Conceptual Model of research

Two main structures considered in this research include Implementation of office automation and innovation that each is measured by variables and indices. Regarding mentioned necessity about implementation of office automation and its effect on innovation in education we have considered effect of the office automation component on innovation.

So below theoretical pattern is presented:

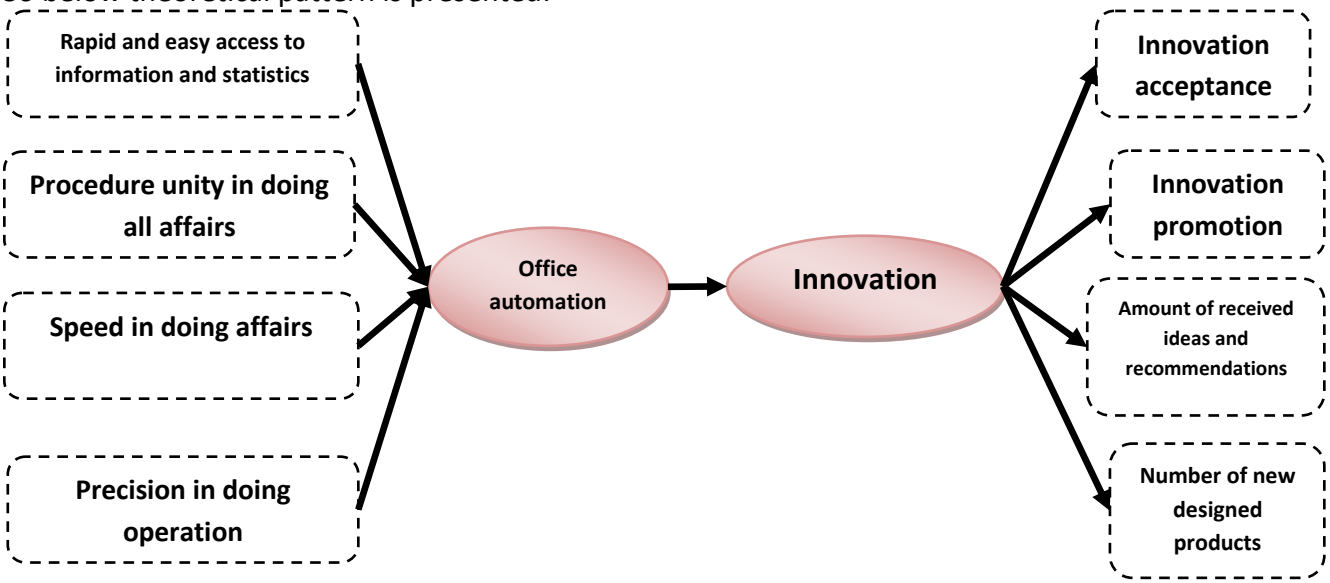

Figure 2 -Conceptual model of research

Hypotheses of research

Regarding mentioned contents 5 general defaults are considered in this research which are confirmed or denied using statistical analysis and this is stated during research. Hypotheses of this research are:

Main hypothesis:

$H_{1:}$ implementation of office automation has effect on innovation of Esfahan schools and education organizations.

Secondary Hypotheses:

$H_{2:}$ easy and rapid access to information and statistics increases Innovation.

$H_{3:}$ procedure unity in all affairs increases innovation.

$H_{4:}$ speed in performing affairs increases innovation.

$H_{5:}$ Precision in operation increases innovation.

Methodology

The present research which is based on structural equations model has applied purpose and nature and follows correlation method and use descriptive and inferential statistics method to analyze data. Field method using standard questionnaire and 5-point Likret spectrum were used to collect data and to collect information necessary to confirm or deny research hypothesis. This research uses mainly library methods by using related books, articles and thesises to collect information related to literature of subject and research background .SPSS18 and Amos

20 software are used to analyze data. SEM method is used to analyze hypotheses and consider overall fitting of research model. Statistical society of this research includes managers of Esfahan education organizations, Dist.1, 2, 3 and managers of Esfahan and Lenjan education schools (including Zarinshahr, Chamgordan, Mobaraeh and Sedeh districts). It must be noted that other districts like Dist.2 and Fouladshahr Dist. were not selected because statistical society of these regions cannot be accessible for research. So researcher has had access to mentioned regions to distribute questionnaire. Sampling was done by classified random method. This classification has been done by random selection of Esfahan, Zarinshahr Mobarakeh, Chmgordan and Sedeh cities. Sample volume also with regard to Cochran formula d=0/1 , t=1/96 and maximum variance between research variables was obtained as 125 individuals. In general 130 questionnaires were distributed in statistical society and 127 questionnaires were finally collected and analyses of this research are performed based on obtained responses.

Table 2) Demographic properties

Properties description		Percent	Properties description		Percent
Age	20-30	7	Study	B.S	70
	30-40	43		M.A	26
	40-50	50		PHD	3
Sex	male	52			
	female	48			

In this research face validity is used to consider validity of questionnaire and to achieve this aim some questionnaires were given to scholars who have specialty in knowledge management domain especially subject of this research namely knowledge sharing. Using Delphi method corrected questionnaire was delivered to scholars again after considering their opinions and finally after applying their final opinions , the certain and final questionnaire was produced and so face validity was confirmed. To determine final reliability of research Cronbach's Alpha method is used. Regarding variance of each question and also obtained general variance, Cronbach's Alpha coefficient was calculated using SPSS software which was obtained as 0/89 for questionnaire and this shows good reliability of this questionnaire.

Table 3) Cronbach's Alpha coefficients

Cronbach's Alpha coefficient	Variable
0/85	Quick and rapid access to information and statistics
0/82	procedures unity in affairs accomplish
0/91	Speed of affairs accomplishment
0/93	Precision in doing operation

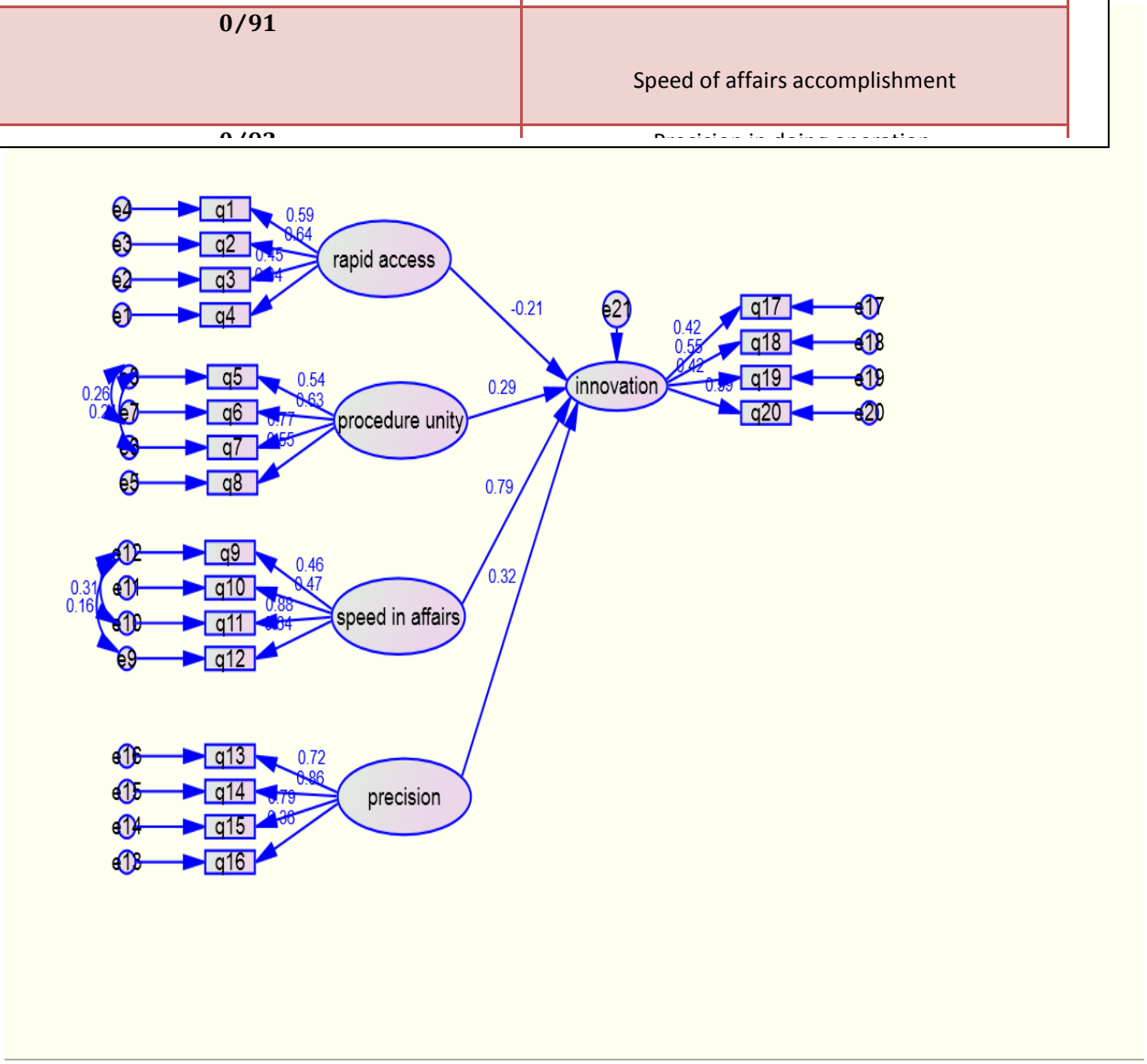

Figure 2) structural equation model to determine study secondary hypotheses (first model)

Table 3) general fit indices of secondary hypotheses (first model)

CMIN/DF	**1.914**	**NFI**	**0.84**
GFI	0.86	CFI	**0.94**
AGFI	0.83	PRATIO	**0.936**

m
d
structural coefficients of the models are evaluated.

Table 4) regression weights

Significance level	**Critical ration**	**Standard error**	**Standard estimated value**	**Regression relationships**		
***	5.128	.125	.640	Easy and quick access	<---	**Innovation**
***	5.703	.080	.455	Procedure unity in doing affairs	<---	**Innovation**
***	2.985	.078	.362	Speed of affairs	<---	**Innovation**

The interpretation of above table is that the first secondary hypothesis, easy and rapid access to statistics and information, enhances the innovation with the significance level of *** (the symbol*** shows p<0.001) and the critical ratio of 0.752 has been confirmed and is indicative of direct, positive and strong effect of easy and rapid access to statistics and information factor on performance. Also the second hypothesis of speed of affairs accomplish, enhances innovation and has been confirmed with the significance levels of ***,***,***,*** and with respect to critical ratios it can be concluded that these components have direct, positive and significant effect on the dependent variable. After considering significance level and coefficients of factor factors in table it was determined that only second secondary hypothesis has not been confirmed with significance level of 0.452 and no Significant relationship between these component and dependent variable was found.

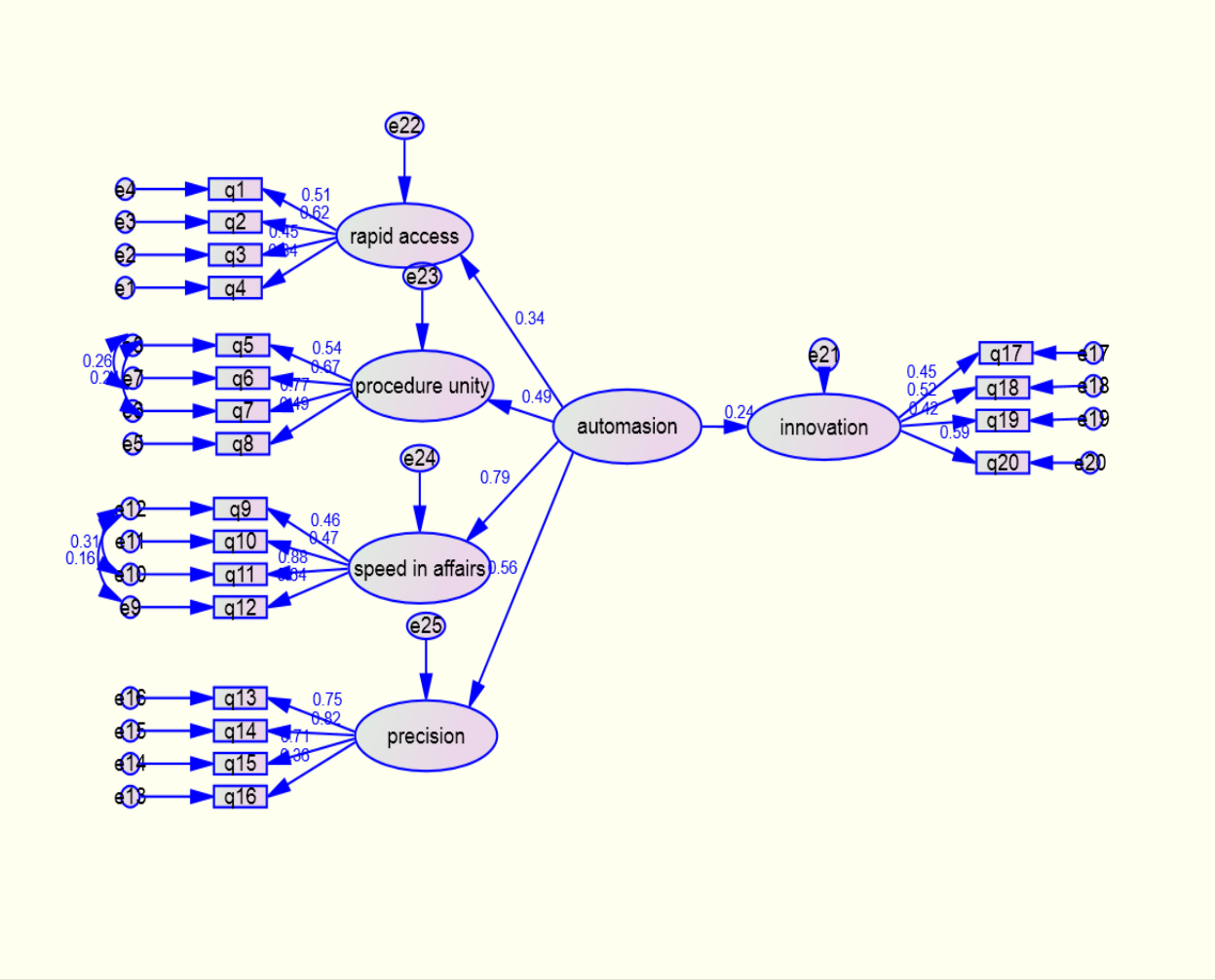

Figure 3. Structural equation to determine study main hypothesis (second model)

Table 5) general indices of second model

CMIN/DF	1.914	NFI	0.754
RMR	0.082	CFI	0.864
GFI	0.725	PRATIO	0.936
AGFI	0.712	RMSEA	0.070

Table 6) regression weights of second model

Significance level	Critical ratio	Standard error	Standard estimated value	Regression relationships		
***	6.067	.198	1.204	Office automation	<---	**Innovation**

Considering the fact that in the main hypothesis, the emphasis is on relationship between office automation as independent and innovation variable, so based on the above table it can be concluded that office automation has direct, positive and significant effect on innovation. As a result, the main study hypothesis is confirmed.

Study results

It has been stated in the main study hypothesis that implementing office automation has effect on the innovation of Esfahan education organizations and schools. Structural equation modeling has been used to test this hypothesis. Test results show this hypothesis. Regarding the acceptability of general and partial fit indices, the main study hypothesis has been accepted and the amount that office automation influences on innovation has been calculated equal to the standard amount of 0.24. The results obtained from testing the main study hypothesis are completely compatible with what is going in the organization under study regarding office automation. As it was expected office automation results in innovation.

- The first secondary hypothesis considered the effect of rapid and easy access to information and statistics on innovation. The results of investigations show that rapid and easy access to information has positive and significant effect on innovation
- The second secondary hypothesis proceeded to determine the effect of developing procedure unity in doing all affairs on innovation. The results of investigations show that procedure unity in doing all affairs has effect on innovation with the measured standard amount of 0.29 on innovation.
- The third secondary hypothesis proceeded to determine the effect of speed in affairs accomplishment on innovation. Based on statistical analyses this hypothesis was accepted with the significant level of 0.68.
- The fourth secondary hypothesis proceeded to determine the effect of precision in operation on innovation. Results obtained from test present that precession in operation has positive and significant effect on innovation and this hypothesis was accepted.
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Discussion and recommendations

In this section based on the results obtained from field studies and the conducted tests on the collected data, theoretical studies, observations, interview with managers, employees and experts in this respect and also the obtained experiences, the researcher presented some recommendations regarding any dimension of office automation during conducting this study. The recommendations presented in this section can be applied by automation system planners so that these recommendations can be one of the main axels of future planning by these managers to develop the system.

Considering the effect of implementing office automation on the innovation of Esfahan education organizations and schools, this can be promoted by providing suitable persuasive mechanism to acknowledge all use facilities of this system optimally in any way in order to perform their duties and organizational innovation. Also it is recommended to pay serious attention to improvement of employees' motivation in applying these technologies in

organization. For example first this type of educations between volunteer employees were presented by considering special advantages like assigning special encouragements to these individuals .

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