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Investigating the Effect of Office Automation on Organizational Excellence

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Abstract

This study aimed to evaluate the effect of office automation on organizational excellence in Zahedan University of Medical Sciences. Descriptive-survey has been used in this research. Research population includes 212 employees in studied case and sample size was estimated 135 persons. The data collection tool was a researcher-made questionnaire with 50 questions which had two columns of before and after applying office automation. Its validity was in content type and the reliability confirmed by Cronbach's alpha coefficient of 0.84 in SPSS software. Results show that using office automation has great effect on organizational excellence in "leadership", "strategy", and "partnership and resources". Also, the use of office automation has had great effect on organizational excellence in "people", "process, products, and services", "customer results", "people results", "society results", and "key performance results". Generally, the use of office automation has affected organizational excellence. Results also show that there is a significant difference between before and after the application of office automation. According to results, office automation had the greatest effect on "key performance results"; then, "people results" and "strategy" are on the second and third rank, respectively.

Keywords: Office Automation, Organizational Excellence, University of Medical Sciences

Introduction

In this modern age, organizations have no choice than implementing computer systems, information technology, and advanced media. The future belongs to ones who consider and analyze advantages and disadvantages of these systems through accurate recognition as well as learn from the experience of others, without having to bear the costs of that experience again.

Having access to computer systems, information technology, and advanced media leads to an increasing acceleration; the acceleration makes each saved unit of time more valuable than previous unit. Thus, there will be a positive feedback loop that accelerates the acceleration. The extension of computers in recent decades has been created the most important change in knowledge system since the invention of printing in the fifteenth century, or even the invention of writing. Parallel to these extraordinary changes is the expansion of networks and new media which was equally amazing; their function is handling knowledge and its elements; i.e. data and information (Curtin et al., 1998). Regardless of the used technology, human factor has always played a decisive role in performing organizational activities for former and today's organizations. This means that the organization is not just a merely technical unit or a social system; but this is a system requiring the combination and integration of human activities in the field of different technologies which affect the improvement of organizational performance. Office automation is also a product of technology which undoubtedly has had and will have a significant effect on organizational performance. This effect can be positive or negative; because each new technology has its own consequences and can reduce or improve performance, depending on the technology type as well as training, (Hammer, 1982).

Literature review

Existing in global markets and even remaining in domestic markets need to compete with strong competitors. Due to expansion and complexity of objectives, processes, and organizational structure in competitive environments, only organizations can survive which are accountable toward customers' and stakeholders' demands and expectations; they also consider profitability and wealth creation as critical and excellent organizational indicators.

Organizational excellence models are used in different organizations as a powerful tool for evaluating the level of stability. Using these models, organizations can evaluate on their level of success in implementing improvement programs at different periods of time; they can also compare their performance with other organizations, especially with the best ones (Sarafizadeh, 2001, p. 56). In recent years, using office automation system has been increased in our country and many organizations tend to take advantages of this system (Beheshtian & Abolhasani, 1994, p. 15). The invention of computers provides fast processing and storing massive amounts of data. Further advances in the field of relating computers and transferring data between them made information transfer to a large extent possible (Lawless, 2000). Information technology (IT) increases the amount of available information for organizations and individuals. The amount of information in organizations is growing rapidly through the development of processing systems (Sarafizadeh & Panahian, 2004, p. 14).

A glance to the future indicate that decision-making, financial planning, and organizational communication and interactions will be done through computer systems; managerial and specialized jobs will be influenced more than before (Goodenough, 1966). Office automation is applying computer and communication technology to facilitate office affairs in the organization so as to enhance their efficiency. The idea of paperless offices and its beneficial results will be achieved only through the application of office automation systems.

The effect of applying office automation on organizational excellence in the studied case is not clear. To clarify it, this research seeks to answer the following questions: "Has the use of office automation caused to organizational excellence in Zahedan University of Medical Sciences?"

Office Automation

Since 1960s, due to expansion of more aspects in functions and activities of business and offices, the need for an appropriate integrated office system which involves huge amount of information, communications, and correspondence has been considered. These systems have been called with different names; but the most popular ones, especially for highest level of automation systems, are called office automation. There is no clear and exact definition for these systems; they are limited to determining the user's perspective. This means that office automation system has many definitions (Habibi, 2004, p. 40).

Office automation is the use of electronic devices in order to increase performance. Enhanced performance results from the evolution of information exchange within and between offices and their environment; thus, it can benefit manager by providing better information for decision-making (Beheshtian & Abolhassani, 1994, p. 297). Office automation systems are information systems which create administrative correspondence in written, oral, or visual form and transfer them after storing, modifying, and displaying (Sarafizadeh, 2007, p. 167). In other words, office automation includes all formal and informal electronic systems relating the communication between individuals within and outside of organization, and vice versa. Office automation facilitates communication in both oral and written forms (Mac Loid, 1999, p. 48). Office automation system refers to the systematic use of computer and communication systems in order to support administrative procedures in office environment (Olson et al., 1982, p. 838).

Currently, all units in Zahedan University of Medical Sciences use office automation online. All correspondence including internal, external, outgoing and incoming are performed through this system. It should be said that the letter for outside of the university are sent in print with original signature.

One of the main reasons for applying information technology in the office environment is to enhance productivity of people and employees. As researches show, while increasing productivity in different organizational areas has increasingly been considered and improved, but the productivity in the field of office affairs has been neglected. Since then, office automation has been considered (Nowrouzi & Mousavi madani, 2006, p. 6).

If mechanizing office affairs actually leads to increase productivity, its effect on organization will be as follows:

- ✓ Better use of workforce coupled with reduction in staff numbers or personal productivity of personnel;
- ✓ Better use of time for more efficiency;
- ✓ Better quality in management for making better decisions;
- ✓ Increase in productivity through individuals' better performance;
- ✓ More effectiveness by using available information about organization (Sarafi zadeh, 2007, p. 171).

The most important condition for applying automation in most organizations relates to the speed and accuracy in their work. It is because of development in operation domain of organizations that relationship channels with more speed are required. Office automation will facilitate availability of short relationship channels and required communication for managers.

Generally, the benefits of applying office automation systems can be classified into two categories:

A) Direct benefits: These benefits include increased products or productivity and savings in

time and labor. Such benefits are usually measurable and may have direct and short-term effect on cash flow.
B) Indirect benefits: These benefits are non-quantitative and may enrich the organization through long-term profitability and growth.

Organizational Excellence Model

Organizational Excellence Model is based on nine criteria. Five criteria are the enablers and four ones are results. Enablers include "leadership", "strategy", "people", "partnerships and resources", and "processes, products, and services". Results include "customer results", "people results", "society results", and "key performance results". Enablers cover what an organization is doing; results indicate what the organization obtains. "Results" are achieved though implementing "enablers"; and "enablers" are improved though getting feedback from "results". Each of the nine criteria in organizational excellence model includes several components that determine different aspects of the criteria.
Martinson et al. (2005) believe that financial criteria such as return rate on investment, net present value, and payback period are not suitable for performance measurement of information systems, because information systems bring a wide range of resources to the company; many of them are intangible and their value and benefits cannot be easily estimated by financial criteria in measurable and quantitative form.
Stewart (2007) in his research seeks to provide a structured framework for lifecycle management of information technology projects. This framework includes three steps of lifecycle in IT projects: "IT project selection", "strategic implementation of IT", and "performance evaluation of IT". The study provides a definition of each step and ultimately seeks to develop a software package for it.
Richards (2007) believes if Balanced Scorecard (BSC) is used within a company, the manager can work with a group of corporate objectives, identify strategies to achieve them, and develop vision, operational objectives, and key performance indicators related to Balanced Scorecard perspectives. He concluded that BSC with its multifaceted approach can help managers involved in e-commerce to consider financial and non- financial issues, long-term and short-term subjects, and also internal and external environment, simultaneously.
Hintz et al. (2000) investigated the effect of information technology on organizational performance, organizational structure and its dimensions. They expressed four equations as follows:

- Structure: a function of internal environment, external environment, task-based environment, the acceptance of information technology;
- Managerial attitudes: a function of managerial objectives for IT, manager's familiarity with information technology, structure performance;
- Acceptance of information technology: a function of managerial objectives for IT, external environment, managerial attitudes, structure;
- Performance: a function of managerial objectives for IT, external environment, acceptance of information technology, managerial attitudes, structure.

Research questions

1- Has the use of office automation affected organizational excellence?

2- Which indicators of organizational excellence have been affected more by office automation?

Research Methodology

In this research, descriptive-survey has been used. In such a research, researchers seek to describe features of a situation or an issue objectively, really, and regularly (Seif Naraghi & Vafadari, 2006, p. 58). In order to gather literature review, library and internet resources have been used. For field studies, questionnaire and scientific documents have been applied. Descriptive and inferential statistics were used in SPSS software to analyze the collected data. The research population includes all 212 managers and employees in Zahedan University of Medical Science who were present before and after the application of office automation in the organization; they have adequate knowledge about using office automation. According to Morgan table, sample size was determined as 137 individuals. After the questionnaires distributed, 135 questionnaires were returned and research analysis was based on them.

The data collection tool was a researcher-made questionnaire with 50 questions which had two columns of before and after applying office automation. Its validity was in content type which was approved by experts' opinions. In order to confirm the reliability, 30 questionnaires were distributed. It was also confirmed by Cronbach's alpha coefficient of 0.84 in SPSS software.

Table 1. Cronbach's alpha coefficient for reliability

Alpha	Dimensions of Organizational Excellence	Variable
0.86	Leadership	Applying office automation
0.77	Strategy	
0.81	People	
0.80	Partnership and resources	
0.85	Processes	
0.81	Customer results	
0.93	People results	
0.83	Society results	
0.88	Key performance results	
0.88	Organizational Excellence (Total)	

Research Findings:

In order to answer the first research question, one-sample T-test and Correlation T-test were used. Results are as followed:

Table 2. One-sample T-test for the effects of office automation on organizational excellence

Sig.	df	T	Test Value	SD	M	N	Dimensions of Organizational Excellence	Variable
0.000	134	26.85	3	0.56	4.30	135	Leadership	Applying offic
0.000	134	32.67	3	0.53	4.51	135	Strategy	

0.000	134	25.47	3	0.61	4.35	135	People	
0.000	134	45.64	3	0.39	4.55	135	Partnership and resources	
0.000	134	23.74	3	0.56	4.14	135	Processes	
0.000	134	14.58	3	0.95	4.20	135	Customer results	
0.000	134	25.11	3	0.69	4.50	135	People results	
0.000	134	23.46	3	0.56	4.13	135	Society results	
0.000	134	33.09	3	0.57	4.64	135	Key performance results	
0.000	134	36.90	3	0.44	4.40	135	Organizational Excellence (Total)	

According to Table 2, mean value in "leadership" (M=4.30) is bigger than Test value. This difference (t=26.85) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "leadership" scale of organizational excellence. Also, mean value in "strategy" (M=4.51) is bigger than Test value. This difference (t=32.67) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "strategy" scale of organizational excellence. Mean value in "people" (M=4.35) is bigger than Test value. This difference (t=25.47) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "people" scale of organizational excellence. Mean value in "partnership and resources" (M=4.55) is bigger than Test value. This difference (t=45.46) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "partnership and resources" scale of organizational excellence. Mean value in "processes, products, and services" (M=4.14) is bigger than Test value. This difference (t=23.74) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "processes, products, and services" scale of organizational excellence. Mean value in "customer results" (M=4.20) is bigger than Test value. This difference (t=14.58) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "customer results" scale of organizational excellence. Mean value in "people results" (M=4.50) is bigger than Test value. This difference (t=25.11) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "people results" scale of organizational excellence. Mean value in "society results" (M=4.13) is bigger than Test value. This difference (t=23.46) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "society results" scale of organizational excellence. Mean value in "key performance results" (M=4.64) is bigger than Test value. This difference (t=33.09) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on "key performance results" scale of organizational excellence. Generally, mean value in "organizational excellence" (M=4.40) is bigger than Test value. This difference (t=36.90) is significant at 99% probability level. It can be concluded that applying office automation has had great effect on organizational excellence.

Table 3 indicates that there is significant difference between conditions before and after applying office automation. It means that applying office automation has effected on organizational excellence.

Table 3. Correlation T-test for the differences between conditions before and after applying office automation

Sig.	df	T	SD	M	N	Office Automation
0.000	134	30.19-	32.72	116.51	135	**Before applying**
			22.15	220.37	135	**After applying**

In order to answer the second research question, Friedman test was used. Results are as followed:

Table 4. Friedman test results for prioritizing organizational excellence indicators due to office automation

Sig.	Df	Chi-square	Ranking	Mean Rank	Dimensions of Organizational Excellence
0.000	8	271.98	6	4.73	Leadership
			3	6.03	Strategy
			5	4.93	People
			4	6	Partnership and resources
			8	3.40	Processes
			6	3.61	Customer results
			2	6.06	People results
			6	3.42	Society results
			1	6.83	Key performance results

Results in Table 4 show that "key performance results" with mean rank of 6.83 achieved the most effects due to office automation. After this dimension, "people results" with mean rank of 6.06 and "strategy" with mean rank of 6.03 were at the second and third ranks, respectively.

Discussion and Conclusions

Question 1: Has the use of office automation affected organizational excellence?

In order to answer the first research question, one-sample T-test and Correlation T-test were used. Results were shown in Tables 2 and 3. Results show that using office automation has great effect on organizational excellence in "leadership", "strategy", and "partnership and resources". Also, the use of office automation has had great effect on organizational

excellence in "people", "process, products, and services", "customer results", "people results", "society results", and "key performance results". Generally, the use of office automation has affected organizational excellence. Results also show that there is a significant difference between before and after the application of office automation. It means that applying office automation has effected on organizational excellence. Research findings are consistent with Ahmadi (2001), Shahbandarzadeh (2010), Martinson et al. (2005), Hosseini (2004), Stewart (2007), and Richards (2007); but they are not consistent with Fagihi (2004).

Question 2: Which indicators of organizational excellence have been affected more by office automation?

In order to answer this question, Friedman test was used. Results in Table 4 indicate that office automation had the greatest effect on "key performance results". After that, "people results" and "strategy" are on the second and third rank, respectively. These findings are consistent with Haghshenas et al. (2006).

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