

The Effect of Applying Official Automation on Efficiency and Effectiveness With Stressing on Human Resource Approach

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ABSTRACT

This article discusses about this subject that official automation is one of the important tools toward reaching helpful solutions for time - saving and efficient use of present possibilities in organization. The main purpose of this article is specifying the effect of applying official automation on efficiency and effectiveness of human resource. The analysis of gathered data shows that official automation affects on efficiency and effectiveness of human resource, but this effect on effectiveness of human resource, is more than efficiency.

KEY WORDS: Official Automation, Efficiency, Effectiveness, Human Resource.

1. INTRODUCTION

Nowadays, official corresponding and communication in organizations and economical institutions are changed because of increased use and development of technology changes and increased speed of environmental changes [1]; so the use of official automation as a new method accelerates work flow and on the other hand, collecting information about organization activities prepares a suitable field for accelerating daily affairs.

The necessity of doing official activities during minimum time with maximum speed and attention and using the last and most safe technologies, made managers use official automation system to give order to their work place [2]. One of the factors that are affected by this decision (official automation establishment) is the subject of efficiency and effectiveness in human resource domain. One of the most important factors which influence the efficiency and effectiveness is the official automation; therefore this factor was examined in this research.

2. Theoretical bases of Subject

Efficiency means the resources which are used for producing a unit of a product; in other words efficiency is the least of time or energy for the most done works. [3]

Effectiveness is the measure which an organization could reach to its goals. So effectiveness has a general meaning which covers a lot of variables. In order to determine organization effectiveness, we should measure the extent which variable goals are reached. [4]

Based on the previous researches, information technology is the first step for recognizing an official automation system which has a great importance. Some of the researches which were done in this subject are as follows:

Brian Jolson and Hit (2000) examined the effect of information technology on the growth of efficiency and effectiveness on a sample of 527 in the period of 1987 to 1994 and their findings shows that in a short time with one year delay, the output of computer is normal. In fact, the advantages of computerized agencies are the same as their costs, with out any effect on the growth of work force efficiency and effectiveness, but in a long time of 5 to 7 years, their output will increase even 5 times as much. Based on their findings the advantages of information technology are not just caused the increase in workforce efficiency and effectiveness [5]. Eliner and sacht (2002) approved those findings; they said that the incensement of efficiency and effectiveness growth of workforce is more than other factors [6]. Basanini and Skarpta (2002), examined the growth of efficiency among OECK countries in the years 1980 to 2000; Based on their findings, there are common factors among countries which experienced a good growth during 1990 decade: improvement in workforce application, incensement in human resource, and using information technology, they showed that there is a positive relation between innovation and investing in information technology [7]. In the year 1974, storm an studied and examined the productivity in different units of India which were affected by information technology, and he found that from the year 1950 on, the productivity in service and business parts decreased, whereas in mines and forestry parts, productivity were increased; in other words the parts which used their investment along with workforce more than other parts, could have more productivity [9]. The results of another research in Canada in the period of 1997 to 1981 showed that information technology had a positive effect on workforce productivity and other factors productivity. On the other hand, information technology had a little effect on the demand for professional and nonprofessional workforce in Canada, so Canada has relative advantage in workforce efficiency [10].

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2. METHODS AND MATERIALS

In order to examine the hypothesis, an accessory production company in private car making part in Iran was chosen. In this model, official automation was chosen as an independent variable, efficiency and effectiveness as dependent variables, and age, education level, job level were chosen as controlling variables. In our model efficiency involves 14 indexes and effectiveness involves 12 indexes; this research is trying to examine and measure efficiency and effectiveness with performing automation. Figure (1) shows the theoretical format of this research. The research with considering its goal is applicable and with considering the method; is measurable - descriptive. Statistical society of this research is all of the managers and proficient's of the accessory production company which are about 150 persons. Statistical sample of this research which is calculated by following formula is 68 persons.

$$n = \frac{(Z_{\alpha/2})^2 \cdot p \cdot q \cdot N}{(Z_{\alpha/2})^2 \cdot p \cdot q + N \cdot e^2} = \frac{(1/96)^2 \cdot 0/5 - 105}{(1/96)^2 \cdot 0/5 + 105 \cdot 0/07^2} = 68$$

The research hypothesis is as follows:

- 1 - Using official automation influences on effectiveness.
- 2 - Using official automation influences on efficiency.

The main instrument of this research is questionnaire and the choices of each question are graded based on likert range from 1 to 5. The questionnaire has 26 questions which 12 questions are related to effectiveness and 14 questions are related to efficiency. The context reliability was used for measuring the reliability. For measuring the, Alpha Cronbach index was used and the number which was got by SPSS statistical software is 0/951 which shows a high reliability. After gathering the data with using SPSS software, single sample t - test was used.

4. Research Findings

Considering to this subject that Smirnof - Kolmogroph test shows that related data to efficiency and effectiveness and with comparing p -value in these two indexes, we can see that data in these two variables has a normal distribution.

Table (1): Smirnof - Kolmogroph Test.

Statistical characteristics	Efficiency	Effectiveness
Number	68	68
Z	0/916	1/004
P-value	0/371	0/266

4 - 1. Results of hypothesis Test

In this research Single Sample t - test was used for testing research hypothesis and the findings are shown in table (2):

Table (2): Single - Sample t – test.

Dependent variable	hypothesis	number	Calculated T	P-value	Result
Efficiency	First hypotheses	68	4/71	0/000	Rejecting Ho
Effectiveness	Second hypotheses	68	3/128	0/000	Rejecting Ho

The results of data analysis shows that p - value in both of these tests is less than %5; we can result that in the meaningful level of %5, official automation performing caused incensement in efficiency and effectiveness. After examining the related hypothesis to automation effect on efficiency and effectiveness; each of the indexes was examined as a subsidiary hypotheses and the results can be seen in tables (3) and (4).

Table (3): Single - Sample t - test for efficiency indexes.

	Efficiency Indexes	p-value	Result
1	Increase in answering speed of employees to managers	0/000	Rejecting Ho
2	reduction in unit's costs	0/000	Rejecting Ho
3	Increase in personnel work accuracy	0/000	Rejecting Ho
4	establishing a better relationship between managers and proficient's	0/000	Rejecting Ho
5	awareness of company's official affairs	0/004	Rejecting Ho
6	reduction of correspondent's errors	0/034	Rejecting Ho
7	up to date decision making	0/049	Rejecting Ho
8	Controlling and monitoring on employees works	0/036	Rejecting Ho
9	Increased speed of offering in formation to customers	0/166	approving Ho
10	employees eagerness for their work	0/383	approving Ho
11	Increased speed of answering to customers	0/325	approving Ho
12	Organization and personal goals achievement	0/310	approving Ho
13	Satisfying customer's needs	0/415	approving Ho
14	Non answering of system	0/171	approving Ho

Table (4): Single - Sample t - test based on effectiveness indexes.

	Effectiveness Indexes	p-value	Result
1	Reducing of unnecessary official ceremonies	0/000	rejecting Ho
2	Simplicity of complex official affairs	0/000	rejecting Ho
3	increased protection and safety of classified information	0/000	rejecting Ho
4	Simple information classification	0/000	rejecting Ho
5	Operation reduction and shortened unit's work Process	0/000	rejecting Ho
6	double working in unit	0/000	rejecting Ho
7	balance between human force and company programs	0/000	rejecting Ho
8	acceleration of unit's official work	0/001	rejecting Ho
9	the rate of personnel satisfaction from works speed	0/001	approving Ho
10	awareness of company's policies and decisions	0/336	rejecting Ho
11	reduction of duties repetition	0/045	rejecting Ho

In this research, with studying the hypothesis, using official automation was taken into consideration and with meaningful level of %5, we can result that official automation affects efficiency and effectiveness.

First hypotheses: researches shows that using official automation in meaningful level of 5% influences on efficiency and based on table (3), using official automation in meaningful level of 5% influences on increased speed of personnel response, reduction of current costs, increase of personnel accuracy, establishing a better relationship between manager and proficient, awareness of official affairs, corresponding error reduction, up to date decision making and controlling and monitoring on personnel work affairs. Considering the calculated p - value which is less than %5 in these indexes, H0 was rejected and H1 was approved but using official automation did not influence on increase the speed of offering information to customers, personnel work eagerness, increase of organization and personal goals achievement, responding to customers needs, system no answering and with considering to this subject that calculated p -valve in these indexes is more than %5, so H0 was approved and H1 was rejected.

Second Hypotheses: researches shows that applying official automation influences on effectiveness and with considering table (4), we can say that using official automation with considering the meaningful level of %5 influences on all of the indexes except awareness of company's policies and decisions. The results of this research show that the effect of applying official automation caused efficiency and effectiveness increasement.

5. Suggestions

Because of the effect of using official automation on efficiency and effectiveness, it is suggested to compile and perform different programs in order to perform and apply official automation.

It is suggested to consider personnel's educational needs in applying this new system; these trainings should be done at a suitable level to decrease personnel's mistakes and in crease their eagerness for work. Because of this matter that using official automation in company did not affect on answering to customers and increased speed of offering information to customers, it is suggested to sappy a warning system to distinguish the priority of reaching to letters. This system should assign the maximum time which is needed for answering the letters.

It is suggested to equip the LAN net and in order to do this, the company should use IT and computer professionals. On the other hand, company use internet to make relationship among units and because of the low speed of internet, making this connection becomes complicated. In order to resolve this problem, managers and proficient's of this studied company should establish WAN net for information interchanging and make an on - line relation. Using official automation should influence on awareness of company's policies and decisions, therefore it is better to use official automation for secretariat system improvement. In survey system from personnel this system should be used; in repetitive and daily decisions this system could supply managers with necessary information and enables them to reach information which is useful for their decisions.

Using official automation in accessory companies should be affected on organizational and personal goals achievement therefore this system should increase necessary information and reports for managerial decision making and organizational planning and controlling; also this system should decrease guess and assumptions in solving problems in different levels of organizations through information feedback systems.

RESOURCES

- 1 - Bazargan, Abbas & other, "Research method in behavioral science", third Ed., Agah publishing 1997.
- 2 - Harzandi, Akbar, "examining the effect of applying in formation technology on productivity in regional electricity company of Sistan Baluchestan", M.S Thesis, Economy and official science faculty of Sistan Baluchestan university, 2006.
- 3 - Taghizadeh, Ebrahim, "Examining the effect of information technology system on organization effectiveness", M.S Thesis, Management and Accounting faculty, 2006.

- 4 - Khaki, Gholam reza; "Research Method in Management", first Ed, Islamic Azad university publishing, Tehran, 2000.
- 5 - Daft, Richard. L; "organization Theory and Design," translated by Ali parsaeian and Mohammad Arabi, fourth Ed, cultural researches office, Tehran, 2004.
- 6 - Rezaeeian, Ali, "Management Information systems (Information Modeling)", Second Ed., Samt publishing, Tehran, 2002.
- 7 - Sarrafizadeh, Asghar and Panahi, Ali, "Managerial information systems: Theories, concepts, Applications and Designs of systems" fifted. Mir Publishing, Tehran, 2005.
- 8 - Sarrafizadeh, Asghar, "Information Technology in organizations", First Ed, Mir publishing, Tehran, 2004.
- 9 - Taheri, Shahnam, "Analyzing of productivity in organization", eighth Ed, Hastan publishing, Tehran, 1999.
- 10 - Roshan, Aligholi, "Analytic approach on official automation and its effect on Productivity", MS. Thesis, Management and Accounting Faculty, Shiahid Beheshti university, 2005.
- 11 - McLoYd, Reymond, "Management information systems", translated by Mehdi Jamshidian and Akbar Mehdipur Ata Abadi, Isfahanuniversity publishing, 1999.
- 12 - Makvandi, Yaser, "the effect of official Mecanizaation on organization efficiency", MS Thesis, Management and Accounting faculty, Tarbiat Modarres university, 2002.
- 13 - Mohseni, Naser, "Examining the effect of using official automation on organization performance", MS. Thesis, Management and Accounting faculty, Shahid Beheshti university, 2006.
14. Nesae, Vahid, "Examining the effect of official automation on organization productivity", M.R. Thesis, official science Faculty, Shahid Beheshti university, 2005.