

# Employees' Productivity and Automated Information System in Telecommunication Organization in Iran

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## Abstract

This study is done to examine the role of automated information system on employees' effectiveness and productivity in Telecommunication organization, Shiraz, Iran. Sample population includes employees of Telecommunication organization; 50 employees were selected as participants. This study is a research survey and it is of descriptive type. Test instruments include Achieve Questionnaire. This study which is performed by the updated information system indicate that there is a direct and meaningful relationship among innovation, creativity, customers' satisfaction, employees' efficiency and Information technology variables. The role of employees support in the form of providing new technologies, helping employees to understand and easily making use of them are discussed in performance of the organization. It is observed that is organizational plan in employing new information systems is influential not just in a faster communication among employees, but also in emerging innovations and satisfaction among employees and customers. Cutting edge information technology plays its role as a life saver to an organization not so much high in service-efficiency.

**Keywords:** Innovation, productivity, job satisfaction, information technology, efficiency.

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## Introduction

In the present era, the organizations have to use computer systems, information technologies and advanced media. The future belongs to those who use precise and up-to-date knowledge to analyze the advantages and disadvantages of these systems and learn lessons from the experiences of others without undertaking the costs and consequences of experiences for the second time (Purelahiar, Najafzade, 2015). It is clear that Information technology plays an important role in helping organizations to satisfy any need in data or information. The use of the management information systems has become necessary for any organization to improve efficiency, productivity, and improve performance in general (Al-Mamary, 2015). Business Processes Automation helps to increase the workers' productivity by decreasing efforts through centralization and standardization (Sirohey, et al., 2012). Its significance needs no clarification today; It seems so important that if access to such information systems creates a huge difference in work place atmosphere and condition; since company or organization's decision making or policy making diplomacy's are dependent to the way data are accessed and whether they are worthy of trust and how they are prepared to analysis, it can easily assist organizations in obtaining the essential data. In other words, Information Technology is composed of approaches, and techniques of leadership capability by applying software and hardware applications. This area includes technology, computer design, applying information systems and their applications (Sarmad, 1994) Organizations should integrate Information systems with other organizational systems to facilitate speedily sharing of information and decision making (Karikari, 2015). Just bringing technology seems not sufficient, something frequently mentioned by the respondents was the need for more training on the system. They believed that additional and better training would lead to better results (Beadles, Lowery, and Johns, 2005). The management information systems can develop new organizational projects and use modern tools of collection and processing of information to support the employees in attaining their objectives. The computer can increase the speed, correctness, and accuracy of decision-making and enhance the level of accuracy and efficiency of works done in an organization (Purelahiar and Najafzade, 2015). As Qaderi (2015) declares Information technology has the capability to largely or entirely automate flexible manufacturing by coordinating work cells, robots, automatic storage and retrieval facilities and material handling systems.

In academic literature, productivity is defined as efficiency and rich profitability; it is in fact a relationship between inputs and out puts and the results and employees devotion and sometimes it is known as output. Information systems are widely distributed today; it has covered a wide area of our social life. Actually, it is considered as a revolution which penetrated even in organizations. This penetration was of great benefits in organizational dimensions. Thus, all organization employees should be equipped to these facilities so that to enhance their favorite productivity. The importance of information and updated data is clear the time that we see its role as the most effective tool for planning and policy making. By merely making use of these intelligent systems, the optimal efficiency of human resources and non-human resources are visible by a well-organized plan (Pourhasan Harandi, 2012).

Organizational productivity is a measure of how efficiently employees do their work. Organizational effectiveness is a measure of how appropriate organizational goals are and

how well an organization is achieving those goals (Robbins & Coulter, 2002). Today, organizations and private or public corporates and companies have invested on information system and on implementing them. In fact, Information systems improve employees' function. Information systems enhance organizations function via organized access to data and the possibility of enjoying a comprehensive computerized map; these computerized maps are operating as knowledge networks among organizations which are evidently linked to productivity and efficiency in organizations.

Badescu & Garces-Ayerbe (2009) believes that several organizations and industries experienced greatly regarding human resources function, but these improvements are not achieved due to low investment in new technologies such as information systems. For firms to adopt e-business and e-commerce strategies and tools, benefits derivable from the system must outweigh investment and maintenance costs (Binuyo, Brevis-Landsberg, 2014). Similarly, Peoples considers knowledge, accuracy, motivation, innovation, collaboration and the ability in completing the occupational duties as effective and primary factor involving more desirable efficiency.

Productivity is introduced by some other factors namely employees' empowerment, organizational support, organization's culture, structures and principles and creativity in an organization. The role of information systems can be described as the pace of changes and revolutions at international level, motivated organizations to depict a strategic perspective of their future so that they can succeed in international battlefield of competitiveness. Such a map is actually forecasting the organization in a particular and the country's future in general, their value, supreme ideals, and the forthcoming economic policies of a country. Some particular issues and topics are developed as complicated dilemmas. Hitting upon a solution is time consuming and it needs a plan to meditate on the way the challenges, the tasks, duties, and opportunities can be addressed. Settling up some interwoven problems requires a long time while information systems provide useful data which help managers to overcome difficulties in planning, control and decision making. The revolution is processing in such a rapid pace that allocating long time and energy to solve problems are not acceptable any more. Growing expectations demands developed and up-to-date instruments to be applied so that the differences between modern technologies and conventional methods are indisputable. Communications and organizational correspondences have found fluency among economic centers and institutes, thus new technologies can help this facilitating process. On the other hand, collecting data prepares a suitable situation for organizational promotion of the company or organization among other organizations.

Poverty and lack of information cause the management system not only have a true and complete picture of the future, but it could not even recognize strengths and weaknesses points, the past and present status of the organization truly and completely (Eshraghi, 2015). Universal interest and attention to these sciences and believing what was once a magical assumption is now showing its face in reality and it is now an auxiliary tool to develop it in all aspects of economic growth. Meanwhile, organizations need to evaluate and examine their access to such technologies, financial automation should be checked out. So that their connection to universal river of economic development stands steady. Even slight disregard may deviate the organization from its purpose which is accessible via productivity and efficiency (Rezaeeian and Taghizadeh, 2008)

Since, Labor productivity in Iran manufacturing industries is inappropriate. Boosting the productivity is critical in Iran economy (Abri and Mahmoudzadeh, 2015). Although, as such, dealing with uncertainty has become a primary concern for managers (Merschmann and Thonemann 2011). Issues related to the field of information technology are greatly increased in Iran; and desire of private and state organizations to this issue and in particular, the establishment of management information systems has been greatly remarkable (Eshraghi et al.,2015). This study can clarify the positive points and negative points of such systems applied in organizations and it assists probable conflicts of automated systems in the favorite organizations to be solved. The significance of this study will be relevant when its role in facilitating modern organizations needs face. The significance of this study is proved when it plays role in emphasizing on the related hardware and software requisite of organizations and foreign ministry organizations. In today's world which is called the world of management, productivity seems troublesome regarding hardships and complexities. The only alternative in front of managers seems to be empowering employees. This empowering can be achieved easily by information technology systems. In this paper the purpose is to examine the effect of information systems on improvement of employees' function, productivity and efficiency.

## Literature Review

In a study by Pierce et al. (2015) entitled "Cleaning House: The Impact of Information Technology Monitoring on Employee Theft and Productivity" examines how firm investments in technology-based employee monitoring impact both misconduct and productivity. They found significant treatment effects in reduced theft and improved productivity that appear to be primarily driven by changed worker behavior rather than worker turnover. The observed productivity results represent substantial financial benefits to both firms and the legitimate tip-based earnings of workers.

A study entitled "Investigating the relationship between productivity improvement and information technology implementation of employees of industrial management organization" was performed in Tehran companies by Salajeghe and Hamzei (2015). The study has examined the relationship between the information technology implementation and innovation in Tehran industrial management organization. The case-study statistical population in this research is the employees of Tehran industrial management organization. The results showed that there was a positive and significant relationship between the personnel productivity improvement and information technology implementation and also among the factors; the incitement productivity improvement and innovation had the greatest relationship with information technology implementation.

Muhsen and Alafeef (2015) in a study aimed to reveal the interest that exerted by the stores in Kingdom Saudi Arabia in applying the marketing information systems and its role to raise the marketing sales, also the impact of marketing information systems on employers' skills is studied in this paper. It was reached that it is significant for using marketing information systems, sales growth, and employers efficient. It was recommended that it is necessary to show interest in effective and activated information systems because it has a vital role in raising the employees and employers' skills while using that system increases the productivity of the companies and sales growth.

Bahadori, et al. (2013) in a study examined the factors influencing the productivity of human resources in a military health organization. 400 participants were involved. For data analysis, SPSS 18.0 and Amos soft wares were used. The results showed that for the assessment of the productivity of human resources in military health system, mental and intellectual growth, organizational support, and organizational culture need to be considered meanwhile one of support element was known as new technologies to help improve productivity.

Lipaj and Davidavičienė (2013) in a paper studied increased competition among organizations, businesses strive to gain competitive advantage, an increase in economic indicators, work productivity and efficiency, reduction of costs and other benefits through implementation of integrated information systems. It was observed that by improving internal processes and financial performance of the company, the general business performance could be influenced by the deployment of such information system.

Mačiulytė-Šniukienė and Gaile-Sarkane (2013) discussed the theoretical aspects of information and communications technologies (ICT) development and presents the theoretical frameworks of ICT development impact on occupational productivity and economic growth identify indices and indicators for measuring ICT development. It was proved that there is an assessing relationship between ICT infrastructure, ICT use, ICT skills development, ICT trade and labor productivity.

Afaneh et al. (2015) examined different stages of Enterprise Resource Planning System (ERP) Implementation under the light of technological factors availability and the Organizational factor readiness at Greater Amman Municipality (GAM) Case study. The statistical results emphasized on the technological infrastructure in the success and efficiency of Amman Municipality.

Kite (2012) studied the impact of information technology (IT) on domestic customers in India. This paper provided econometric evidence which showed that there was a strong positive impact of IT outsourcing on output and productivity in India. It also demonstrated that in aggregate, IT outsourcing makes a substantial contribution to economic growth.

## **Hypotheses**

This study examines some hypotheses that are as follows:

Automated information systems are influential in employees' effectiveness, productivity, and innovation in Telecommunication Organization in Shiraz.

## **Research Model**

The model applied here requires some clarification:

- I. The independent variable is automated information system in Shiraz Telecommunication Organization. This variable includes computers, copy device, scanner, printer, email, electronic exchange of data, electronic document records.

- II. Dependent model of this study is the rate of productivity among employees of Telecommunication. It includes two elements of efficiency and effectiveness.
- III. Control variables which play their role as regulators of dependent and independent variables. These control variables include sex, occupational rank, educational level, and job experience.

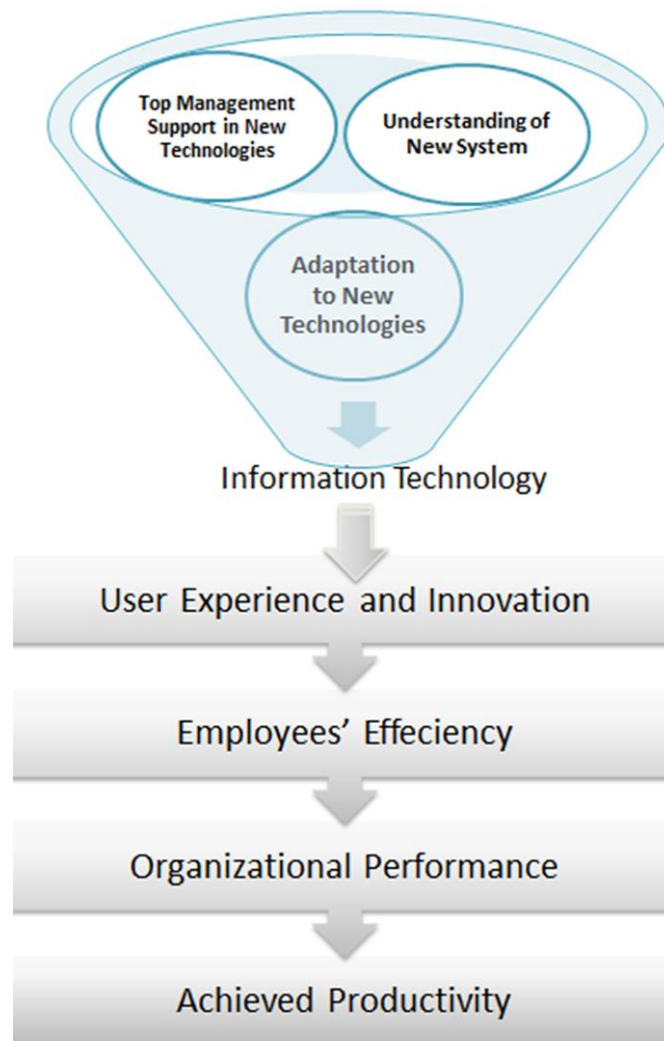


Figure 1: Conceptual Model of the Study

## Methodology

This study is an applied-typed survey regarding the access to data and it is a correlation-based study regarding its variables' relationships. Questionnaire and interview with experts were chosen and made benefit of to identify and classify factors and indexes suitable for analysis of surveys and achieved data.

The study statistical population is selected among employees and managers of Telecommunication organization in Shiraz, Fars province, Iran. Among these individuals, 50 announced their eagerness to collaborate; thus, they were decided as the final survey population. Data were collected by productivity questionnaire of Achieve including questions of regarding automated information systems. This questionnaire includes 26 questions based on Likert scale examining 7 dimensions of productivity among human resources. Experts confirmed validity of the study in formal and contextual manner. Reliability was also determined based on Cronbach's alpha.

## Results and Discussion

### *Data Analysis*

The data was analyzed; they are presented organized in tables to be well compared.

Table 1: Frequency Distribution Records

	Years of Experiences	Number	Percent
1	5-10	12	25
2	10-15	15	30
3	15-25	23	45

As it is clear, the highest frequency belongs to the 15-25 years of experience and the least frequency is viewed in 5-10 years of experiences.

Table 2: Sex Frequency Distribution

	Sex	Numbers	Percent
1	Male	42	84
2	Female	8	16
Total	All Participants	50	

The highest frequency is related to male with 84 percent.

### *Hypotheses Test*

Hypotheses were tested by testing the significance relationship and examining the difference of p-value. Indeed, by the use of confidence interval test 95 percent, the intervals and Pearson correlation were calculated for achieving the correlation rate between two variables. If the error level is 5 percent, that test is not approved and indicates lack of relationship between variables.

Hypothesis 1: Automated Information systems is effective on the rise of innovation of employees in Shiraz Telecommunication Organization.

Table 3: Tests Data

Variable	Changes Source	Sum of Squares	Degree of Freedom	Square Mean	F	Sig.
Automated Information System, Innovation and Creativity	In-Group	290.170	1	290.170	9.115	0.004
	Inter-Group	1559.830	49	31.833		
	Total	1850.000	50			

Table 4: Data Variance Analysis

Variable	F	T	Beta	B	Standard Error	R <sup>2</sup> Ad	R <sup>2</sup>	R	Sig
Innovation and Creativity	9.115	3.019	0.396	0.231	5.64210	0.140	0.157	0.396	0.004

Table of Variance Analysis indicates Sig=0.004 which is below significance level of 0.05. Thus, there is a meaningful and significant relationship between automated systems and innovation and creativity and the hypothesis is approved.

*Second hypothesis*

Making use of automated information systems is influential on productivity's increase among employees and managers in Shiraz Telecommunication organization.

Table 5: Tests Data

Variable	Changes source	Sum of squares	Degree of freedom	Square mean	F	Sig.
Automated Information system, Productivity	in-group	2147.946	1	2147.946	16.139	0.000
	Inter-group	6521.348	49	133.089		
	Total	8669.294	50			



Table 6: variance analysis data

Variable	F	T	Beta	B	Standard error	R <sup>2</sup> ad	R <sup>2</sup>	R	Sig.
Productivity	16.139	4.017	0.498	0.629	11.53641	0.232	0.248	0.498	0.000

Studying above table in which Sig=0.000 is below significance level 0.05. It is determined that there is a meaningful and direct relationship between the two mentioned variables. Hypothesis is approved. In other words, making use of automated information systems influences on productivity in a meaningful and positive way.

### Conclusions

Bringing motivation and encouragement to work place atmosphere is possible and of course is of great importance. It is possible via introducing new and updated automated information systems. The result is an increase in productivity. The problem was originated in not sufficient attention in investment issue. Lack of sufficient investment prevented new technologies to walk in organizations; it consequently caused low levels of efficiency. The relationship between productivity and innovation resulted in lack of employees and managers' tendency to exhibit their creativity at their work place.

This paper which evaluated the relationship among productivity, innovation, creativity, and enjoying automated information systems got to this conclusion that there was a meaningful and significant relationship between productivity and innovation. In other words, organizations which make benefit of information systems present their work in a higher quality while other factors which are linked to these scales may be achieved in a more developed way.

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