

# Factors Affecting the Use of Information and Communication Technologies Faculty Members

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**ABSTRACT:** The present investigation was aimed to study factors affecting the use of Information and Communication Technologies (ICT) by the faculty members of Islamic Azad University of Sari. The data was collected from 77 faculty members of Islamic Azad University of Sari, which was considered using census methods. Afterwards, the data was analyzed using Structural Equation Modeling (SEM) and Smart PLS software and the final model of the factors affecting the employment of ICT was presented. The reliability of the questionnaire was checked using Cronbach's alpha method. In addition, structural validity was used in order to calculate the validity, which the results demonstrated the validity of the questionnaire. The findings indicated the proper fitting of the model based on the effect of identified dimensions in using ICT by the faculty members of Islamic Azad University of Sari. On other words, special attention should be paid to cost and capital, educational, technical and structural, and skill factors in order to use ICT effectively. Moreover, the results of factor analysis demonstrated that the four factors are able to explain about 59.8% of the factors affecting the use of ICT. Eventually, the results showed that there is a significant difference between the dimensions affecting the employment of ICT by the faculty members of Islamic Azad University of Sari. The highest level in the meantime is for cost and capital factor, and educational, technical and structural, and skill factors are in the next priorities.

**Keywords:** Information and Communication Technology, Cost and Capital Factors, Skill Factors, Faculty Members

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## INTRODUCTION

The rapid growth of Information and Communication Technologies (ICT) has had an important effect on human beings' life and the function of organizations and institutions in different countries. According to the connoisseurs, the revolution of communication is associated with changes in human's life as the invention of the steam engine and industrial revolution led to significant changes in individuals' work and personal life (Chikonzo, 2006).

Teaching quality and effectiveness of education systems nowadays are of the most important concerns of educational systems and authorities and decision-makers of development in any country. ICT can decrease many of the expenses through using a compiled program and changing in the educational structure and methods, increase quality, conform products of educational systems to society needs and walk towards making the education practical (Dong, 2010).

Many of the problems that the development of ICT nowadays deals with them are caused by the inability of those in charge of the education system in responding to the needs of the changing society. Innovation in teaching methods and use of ICT in higher education centers such as universities and

from the teachers and faculty members leads to the development of collaborative learning in students, strengthening the spirit of search and research, making education practical, providing the field of education and lifelong learning.

Information Technology (IT) works as a new approach to the complementary roles of educational systems, improvement of teaching quality, diversification of teaching methods, providing automatic and continuous education, shortening the time of education, shortening the period of education, paying attention to individual talents, individualization of education and encountering education problems. Information technology is a paradigm that plays an important role in the transformation of higher education centers. This paradigm is used for the determination of methods of performing educational affairs in an iterative and progressive manner, so the development of ICT in educational systems in universities, as an educator of active forces in centers, organizations and industries, is not only a choice but also an inevitable necessity. Moreover, it is a significant step in the reform of educational systems (Haydn and Barton, 2008).

Any kind of progress in the field of technology rapidly affects academic and scientific environments, develops the horizon of educational activities and

enriches the students' performance. Employment of ICT makes the education diverse, increases the speed of learning and encourages students to contact with available resources and use them. Universities welcome to the employment of e-learning in the process of education due to development of ICT, enriched information, alternative learning strategy and hybrid learning. Although e-learning has been increasingly accepted in developed countries in order to access to traditional and nontraditional students, it is still unknown in developing countries and it is not used as educational approach. Application of ICT by teachers and faculty members is one of the methods of motivating universities and students to use it as a tool, determining appropriate activities for them in the field of information production and developing their creativity through introducing the tools of production and processing of information. Employment of faculty members of these technologies provides the groundwork for lifelong learning. According to abilities and capabilities, all individuals can learn variety of things with access to appropriate technology. The faculty members of universities should change their traditional methods of teaching using various technologies and walk towards development of science and its effectiveness through these changes. Generally, ICT is known as a motivational tool in order to attract and retain the attention given to education. In addition, it provides groundwork for changes in educational structures in accordance with social, cultural and political changes, provides equal educational opportunity for everyone, eliminates

previous educational terms, provides teaching method for students using new technologies and strengthens critical thinking, lifelong learning and sense of being responsible in learning (Salehi Amiri and Heidari zadeh, 2007).

Therefore, according to the understanding of the importance and necessity of the research and clarification of the meaning and significance of ICT and the role of faculty members of universities in its application as a useful tool, the present investigation is aimed to study factors affecting the use of Information and Communication Technologies (ICT) by faculty members of Islamic Azad University of Sari.

#### Factors affecting the use of ICT

First, the research literature including domestic researches such as Salehi Amiri and Heidari zadeh (2007), Nave Ebrahimi and Mohtadi (2008) and Yaghoubi (2004) and foreign researches such as Haydn and Barton (2008), Hyesung (2004), Layfield and Scalon (2002), Wozney, Venkatesh and Abrami (2006), Littlejohn, Suckling, Campbell and Mc Nicol (2002), Holecombe (2000), Dong (2010), Law (2000) and Nyvang (2002) was studied. Afterwards, the factor analysis was used in order to classify the obtained indices out of the research literature. In this regard, 30 dimensions of ICT and factors affecting it, which were obtained from the research literature, were considered. In order to identify the appropriateness of the data, KMO index and Bartlet test were used. The obtained results demonstrated that the data are appropriate for the factor analysis. The results are mentioned in Table 1.

**Table 1.** The value obtained from KMO and Bartlet test

Sig. level	DOF	Value	Type of the test
-	-	0.745	KMO
0.00	551	2349.4	Bartlet

**Table 2.** Extracted factors accompanied by eigenvalue, variance percentage and cumulative variance percentage

Cumulative variance percentage	Variance percentage	Eigen Value	Factors	
24.12	24.10	8.41	cost and capital	First factor
36.40	12.26	4.29	Technical and structural	Second factor
50.61	14.18	5.11	Educational factor	Third factor
59.80	9.25	3.17	Skill factor	Fourth factor

The basis of determination of the number of factors in this research were eigenvalue and variance percentage, and Varimax method was used to rotate the factors, and the variables with factor loading greater than 0.5 were extract as significant factor loadings. The eigenvalue criterion was used in order to categorize the factors. Factors were considered which their eigenvalue was greater than one. The obtained

results demonstrated that four factors had an eigenvalue greater than one and they could explain about 59.8% of the factors affecting ICT by the faculty members of Islamic Azad University of Sari. These factors are studied in the following.

First factor: this factor with an eigenvalue equal to 8.41 is named "cost and capital factor" and explain

about 24.10% of the factors affecting ICT by the faculty members of Islamic Azad University of Sari.

Second Factor: this factor explains about 12.26% of the factors affecting ICT by the faculty members of Islamic Azad University of Sari.

Third factor: it was identified as the second important factor with an eigenvalue equal to 5.11. Moreover, it can explain about 14.18% of the factors affecting ICT by the faculty members of Islamic Azad University of Sari.

Fourth factor: this factor with an eigenvalue equal to 3.17 explains about 9.19% of the related variance and is called "skill factor".

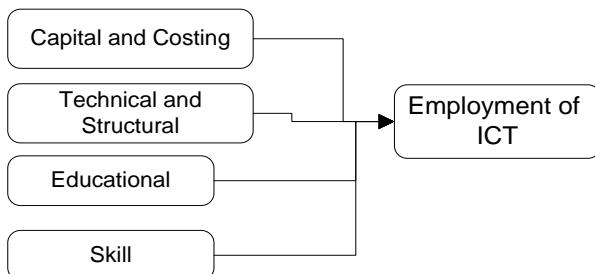
The variables related to each of the factors affecting the use of information and communication technologies and the values of the coefficients obtained from the rotated matrix are mentioned in table 3.

**Table 3.** Dimensions and subcategories affecting

Rank	Coefficient values	Subcategories	Dimension
2	0.821	Amount of development costs of infrastructures	Cost and Capital Factors
3	0.815	Amount of tendency of managers and flexibility of authorities to investment in the use of ICT	
6	0.680	Amount of costs of sharing databases and external data	
7	0.675	Amount of cost of education and support	
4	0.750	Amount of cost of purchasing or equipping hardware or software facilities in the field of using ICT	
5	0.720	Amount of costs of Continuous connection to the network	
1	0.861	Amount of budget for using ICT	
6	0.635	Existence of appropriate support in the case of technical problems during working with computer	Technical and Structural Factors
2	0.761	Existence of sufficient facilities (computer, telephone, modem)	
3	0.732	Amount of enough space for teaching and workshops based on ICT	
5	0.675	Availability of subsidiary facilities and equipment such as scanner and printer in the group	
7	0.628	Availability of possibility of discussion of faculty members through network with domestic and foreign experts in their major or students	
4	0.710	Amount of quality of some of the presented services through ICT	
1	0.780	Existence of telecommunications infrastructure in the field of ICT in universities	
8	0.619	Existence of direct line to internet or network at the workplace of faculty members	Educational Factors
3	0.834	Employment of ICT in the identification and development of educational objectives and curriculum	
1	0.850	Aligning educational goals and programs with ICT	
8	0.650	Employment of ICT in increasing the knowledge of faculty members and academic planners	
6	0.741	Existence of suitable educational software for the use of faculty members and students	
5	0.770	Employment of ICT in changes in teaching method and changes from teacher-oriented style to student-oriented style (active learning (from non-participatory to participatory))	
4	0.816	Tendency of faculty members to use educational software for teaching course material	
2	0.845	Relevance of bases of educational system before university for using ICT	
9	0.635	Amount of familiarity with the concepts of distance education online and the way of using it by some of the employees, faculty members and students	Skill Factors
7	0.729	To improve the access of faculty members and students to technical books through internet	
11	0.606	Holding classes of training and introduction to computer and network courses in using ICT	
10	0.610	Using computer and network in order to increase teamwork in students	
1	0.710	Level of required skill and familiarity with using computer, network, ...	
2	0.705	To consider using technology by the faculty members as a value	
3	0.675	Amount of motivation in faculty members in using ICT	
7	0.640	Skills required to monitor and guide the classrooms based on ICT	
5	0.664	Level of resistance to accept changes	
4	0.673	Knowledge of faculty members about using ICT in teaching	
6	0.648	Existence of culture of ICT among faculty members	

Resource: Documentary studies of the author

Although ICT can have several positive effects in different communities and groups, it is known as a phenomenon itself and factors affecting it should be identified. Therefore, since promoting information and communication technologies in higher education and its development demands using faculty members of this technology, the research hypotheses in line with the study of the present investigation and the conceptual model of the research are mentioned in the following.



**Figure 1.** Conceptual model of the research

- Capital and cost factors have impact on the amount of using ICT among the faculty members of Islamic Azad University in Sari.
- Structural and technical factors have impact on the amount of using ICT among the faculty members of Islamic Azad University in Sari.
- Educational factors have impact on the amount of using ICT among the faculty members of Islamic Azad University in Sari.
- Skill factors have impact on the amount of using ICT among the faculty members of Islamic Azad University in Sari.
- There is a significant difference between the factors affecting the use of ICT among the faculty members of Islamic Azad University in Sari.

## MATERIAL AND METHODS

Since the present investigation was aimed to describe the under study circumstances and phenomenon for a better understanding of the present situation and aid the decision making process, the present research can be considered as a descriptive research. Moreover, since the data are collected through sampling from the population, the present research is a survey study. On the other hand, the present research is practical in terms of objectives.

The population consisted of the faculty members of Islamic Azad University of Sari (77

individuals). The census method was used for sampling due to low statistical population and the whole population was considered as the sample size.

The measurement tool of the research was a researcher made questionnaire with 33 questions, which studied the factors affecting the employment of ICT by the faculty members. The questionnaire studied four factors including cost and capital, technical and structural, educational and skill. In order to measure the validity of the questionnaire, necessary reforms were carried out and the final form of the questionnaire was found after the initial planning and consultation with professionals and experts. A pre-test with 20 questionnaires was carried out in order to check the reliability of the questionnaire, and the Cronbach's test was done and the total value of 0.83 for the test indicated the high reliability of the research questionnaires. Moreover, structural validity was used in addition to Content validity using Confirmatory Factor Analysis in order to measure the validity of the questionnaire, which is explained in the following.

According to the results of the confirmatory factor analysis, it could be said that which index has a significant contribution in the measured of research structures and which index has not. The results are presented in table 2. Based on the results, it could be said that all indices created significant weights for all dimensions and have significant factor loading at 99% confidence level (*t*-statistic is outside the interval (-2.58, +2.58).

The Average Variance Extracted (AVE) was used in order to check the convergent validity. Since the AVE for all the research variables are more than 0.5, the convergent validity of the model's structure is confirmed. The first two columns of the table are related to the Cronbach's alpha and reliability coefficients. As it is obvious, all these coefficients are more than 0.6 and this shows the high reliability and validity of the measurement tool (Hooman, 2008).

The process of analysis of covariance structures (Structural Equations Modeling) is used in the phase of data analysis and interpretation. In fact, the next phase is free parameter estimation from a set of observed data (Hooman, 2008). Moreover, the presented conceptual model, which is developed based on the theoretical concepts, is analyzed by the structural equation model.

In addition, reliability and validity indices for all hidden variables are mentioned in Table 5.

**Table 4.** Factor loadings

Result	Sig.	t-Statistic	Factor Loading	Obvious Variables		Hidden Variables
Significant	<0.01	18.73	0.810	X1	Amount of budget for using ICT	Technical and Structural Factors
Significant	<0.01	14.25	0.754	X2	Amount of cost of purchasing or equipping hardware or software facilities in the field of using ICT	
Significant	<0.01	9.58	0.678	X3	Amount of cost of education and support	
Significant	<0.01	34.46	0.873	X4	Amount of development costs of infrastructures	
Significant	<0.01	12.77	0.724	X5	Amount of costs of sharing databases and external data	
Significant	<0.01	10.86	0.712	X6	Amount of costs of continuous connection to the network	
Significant	<0.01	19.79	0.798	X7	Amount of tendency of managers and flexibility of authorities to investment in the use of ICT	
Significant	<0.01	15.59	0.769	X8	Availability of subsidiary facilities and equipment such as scanner and printer in the group	
Significant	<0.01	6.48	0.600	X9	Availability of possibility of discussion of faculty members through network with domestic and foreign experts in their major or students	
Significant	<0.01	14.42	0.781	X10	Existence of direct line to internet or network at the workplace of faculty members	
Significant	<0.01	19.89	0.804	X11	Amount of enough space for teaching and workshops based on ICT	
Significant	<0.01	13.09	0.714	X12	Existence of sufficient facilities (computer, telephone, modem)	
Significant	<0.01	26.15	0.829	X13	Existence of telecommunications infrastructure in the field of ICT in universities	
Significant	<0.01	15.97	0.741	X14	Amount of quality of some of the presented services through ICT	
Significant	<0.01	21.63	0.781	X15	Existence of appropriate support in the case of technical problems during working with computer	
Significant	<0.01	10.90	0.678	X16	Using computer and network in order to increase teamwork in students	Educational Factors
Significant	<0.01	12.76	0.650	X17	Holding classes of training and introduction to computer and network courses in using ICT	
Significant	<0.01	20.43	0.791	X18	Employment of ICT in changes in teaching method and changes from teacher-oriented style to student-oriented style (active learning (from non-participatory to participatory))	
Significant	<0.01	27.23	0.822	X19	Tendency of faculty members to use educational software for teaching course material	
Significant	<0.01	22.46	0.809	X20	Relevance of bases of educational system before university for using ICT	
Significant	<0.01	17.13	0.817	X21	Aligning educational goals and programs with ICT	
Significant	<0.01	10.68	0.694	X22	Employment of ICT in increasing the knowledge of faculty members and academic planners	
Significant	<0.01	17.50	0.763	X23	Existence of suitable educational software for the use of faculty members and students	
Significant	<0.01	21.88	0.809	X24	Employment of ICT in the identification and development of educational objectives and curriculum	
Significant	<0.01	13.22	0.706	X25	To improve the access of faculty members and students to technical books through internet	
Significant	<0.01	10.91	0.699	X26	Amount of familiarity with the concepts of distance education online and the way of using it by some of the employees, faculty members and students	Skill Factors
Significant	<0.01	11.69	0.705	X27	Existence of culture of ICT among faculty members	
Significant	<0.01	15.03	0.715	X28	Level of resistance to accept changes	
Significant	<0.01	13.08	0.735	X29	Knowledge of faculty members about using ICT in teaching	
Significant	<0.01	18.50	0.737	X30	Amount of motivation among faculty members in using ICT	
Significant	<0.01	25.12	0.819	X31	To consider using technology by the faculty members as a value	
Significant	<0.01	16.13	0.769	X32	Level of required skill and familiarity with using computer, network, ...	
Significant	<0.01	8.07	0.605	X33	Skills required to monitor and guide the classrooms based on ICT	

\*\* All factor loadings are significance at 99% confidence level

Table 5. Convergent and divergent validity

	$\alpha$	CCR	AVE	Cost and capital	ICT	Educational	Skill	Structural and technical
Cost and capital	0.8822	0.9085	0.5882	0.7669	0	0	0	0
ICT	0.9564	0.9599	0.8652	0.7553	0.9301	0	0	0
Educational	0.9219	0.9341	0.5646	0.5836	0.9201	0.7513	0	0
Skill	0.8512	0.8873	0.5312	0.5785	0.8729	0.7143	0.7288	0
Structural and technical	0.8928	0.9139	0.5723	0.6667	0.8655	0.687	0.6379	0.7565

## RESULTS

Structural equation model in the state of standard coefficients estimation is shown in Figure 3. The factor of employment of ICT is an exogenous variable that is affected by other variables. Numbers and coefficients are divided into two categories. The first category is known as first-order measurement equations that are the relationships between obvious variables (rectangular) and hidden (elliptic) variables. These equations are called factor loadings. The second category is known as structural equations that are the relationships between obvious variables and hidden

variables, and are used in hypothesis testing. These coefficients are called path coefficients. According to the model, path coefficients and factor loadings can be estimated in the state of coefficients estimation. Based on factor loadings, the index with bigger factor loading has more contribution in the structure's measurement, and vice versa. The model of coefficient determination indicator is demonstrated in Figure 2.

Figure 3 shows the research model in the state of significant coefficients (t-value). This figure tests all of the measurement equations (factors loadings) and path coefficients using t-statistic.

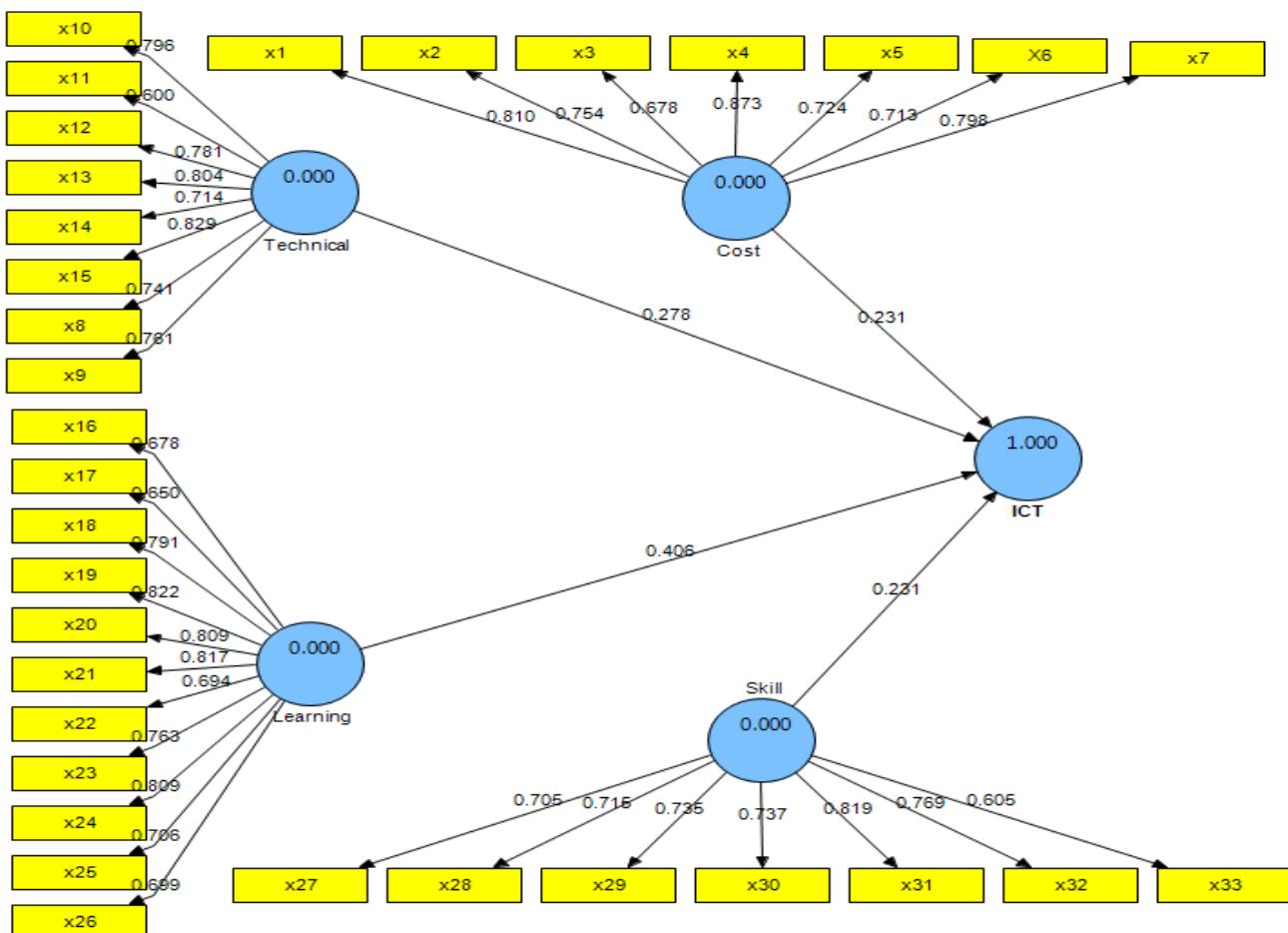
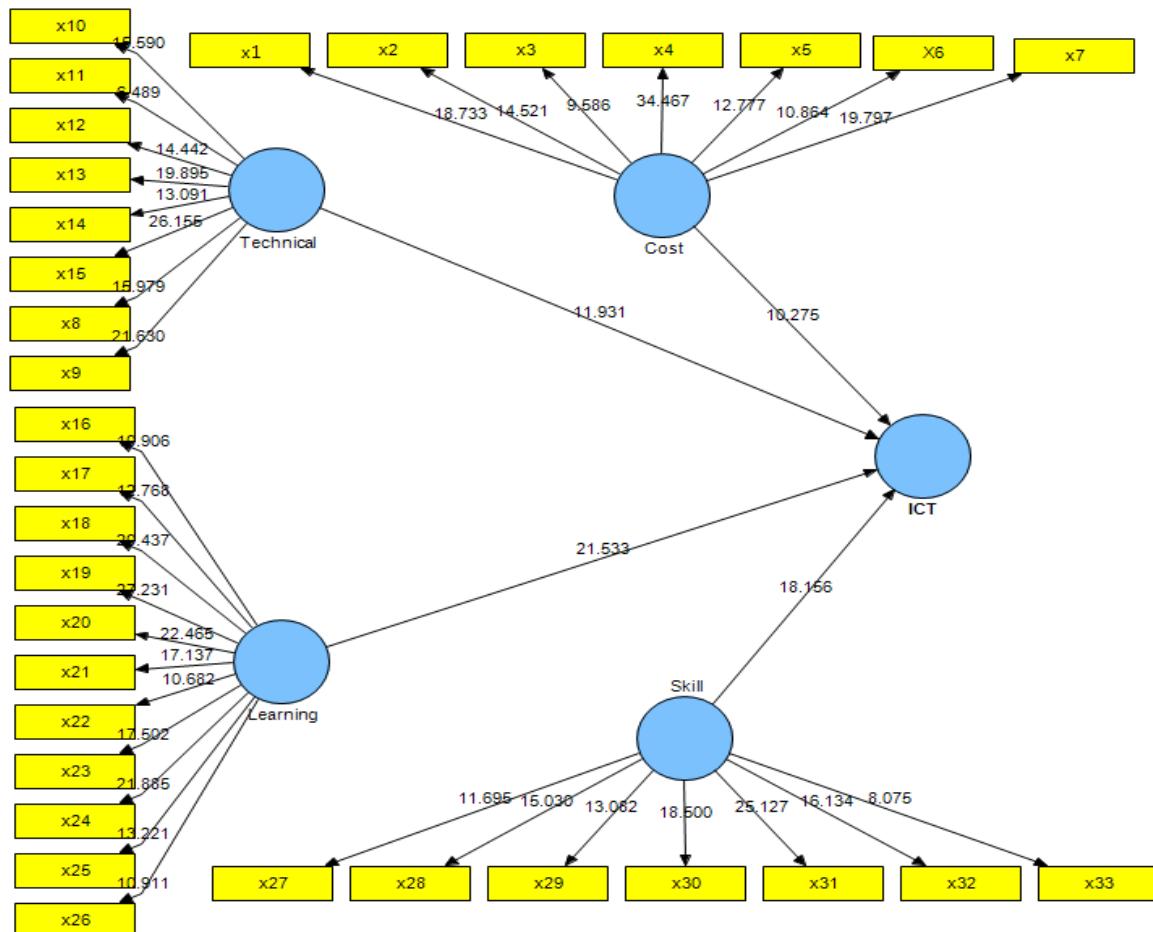


Figure 2. The research model in the state of standard coefficients estimation

**Figure 3.** The research model in the case of significant coefficients (t-value)

### Standard model

The confirmatory factor analysis using Lisrel 8.8 software was used to assess measurement models. If the following conditions are met, an appropriate model is:

Significance level obtained from the chi-square test (P-value) is greater than 0.05. Ratio chi-square to degrees of freedom is less than 3. Value and root

mean square error of approximation (RMSA) is less than 0.08. Comparative fit index (CFI), the fitness index (GFI), adjusted fitness index (AGFI) Ghyrnrm fit index (NNFI) are greater than 0.9 (Joreskog and Sorbom, 1996).

Model parameters are given in table 6. Table 6 shows that the structure of the measurement model had acceptable fit.

**Table 6.** Standard model

AGFI	GFI	Z	CFI	Ratio k to degrees of freedom	RMSA	P-value
0.911	0.927	4.7	0.943	2.3	0.065	0.073

According to this model, factor loading and path coefficient are significant at 95 percent confidence level if the t-statistic is outside the interval (-1.96,+1.96) and are not significant if it is inside this interval. While the t-statistic is outside the interval (-2.58, +2.58), the factor loading and path coefficient are significant at 99 percent confidence level. The factor loading and path coefficient are all significant at 99 percent confidence level according to the results obtained from the t-test and plays an important role in the measurement of their structures.

### Answering the research hypotheses based on SEM

According to the results obtained from standard coefficient and t-statistic in table 6 and also figures 2 and 3, all factors affecting the amount of employment of ICT by the faculty members of Islamic Azad University (Sari branch) have direct and significant impact (the t-statistic is outside the interval (-2.58, +2.58) and according to the positive standardized coefficient). In addition, in order to check the last hypothesis, the results of the Friedman test in the

SPSS software demonstrated that there is a significant difference between the dimensions affecting the amount of employment of ICT by the faculty members of Islamic Azad University (Sari branch). As it is

mentioned in table 7, the highest rank is related to cost and capital factor, and educational, technical and structural, and skill factors are in the next priorities, respectively.

**Table 7.** Path coefficient, t-statistic and the result of research hypothesis

The result of hypothesis	Sig.	t-statistic	Path coefficient	Research hypotheses
Confirmed	<0.01	10.80	0.383	Cost and capital→ Employment of ICT
Confirmed	<0.01	12.49	0.452	Technical and structural→ Employment of ICT
Confirmed	<0.01	4.04	0.219	Educational→ Employment of ICT
Confirmed	<0.01	4.77	0.24	Skill→ Employment of ICT

Table 8. Ranking the factors affecting

Average rank	Dimensions	Rank
5.5	Cost and capital	1
5.2	Educational	2
4.6	Technical and structural	3
4.3	Skill	4

## CONCLUSION

Employment of ICT in the field of education is an inevitable fact. Individuals have access to the latest required information wherever they are. However, the most important impact of ICT has been on educational environments such as universities.

In the age of information technology, educational systems are obligated to rethinking and restructuring of curriculums for computer literacy on one hand, and revitalization and enrichment of learning environments for development of interaction between the learners and resources on the other hand. Hence, reconsidering traditional teaching methods and replacement of them with new and novel methods are necessary to the teachers, students and faculty members. Application of ICT in teaching leads to virtualization in academic environments such as universities. With the emergence and development of internet and information and communication networks, this media has been used as a complementary in order to meet information and education needs and changed the face of traditional education and interaction between the teachers and students at all academic levels. Providing internet web site and databases have converted libraries into a digital and virtual environment for the exchange of information, which its educational role has been become obvious in this environment more than ever. E-learning is another example of the application of ICT in the field of education in universities. Elimination of restrictions on place, time and age, which was appeared to be inaccessible before, is not a great

restriction nowadays. On the other hand, it should be considered that creation of new and broader needs among communities is not suppliable with the continued use of traditional methods of education. Learning based on computer, learning based on information technology, virtual class, virtual libraries and so on are ways to find new and novel methods of education. Moreover, modern tools of communication and information can be used with traditional methods, whether independently or in conjunction with them.

The advantages of ICT in training and teaching and different aspects of education has led the universities to make more effort in order to teach the faculty members the ability of using ICT. Some of the advantages of employment of ICT are diversification and simplification of teaching, increasing the speed of learning, increasing the ability to work with data and using it, improvement of social and communicational skills, independent learning and making progress in it, improvement of presentation, development of problem solving abilities, efficient use of time, ease of doing things, ease in research and investigation, possibility of searching, provision of virtual experiments, cost savings, possibility of composition and appearance of creativity, ease of communication and using others' experiences and possibility of expressing opinions. Hence, the present investigation expressed and explained the factors affecting the employment of ICT by the faculty members of Islamic Azad University of Sari.

It could be stated in line with the developed hypotheses that all the considered factors in the present investigation, means cost and capital,

technical and structural, educational and skill factors, had significant impact on the employment of ICT by the faculty members of Islamic Azad University of Sari. On other words, according to the research hypotheses, managers and authorities of higher education institutions and universities should pay special attention to ICT as a variable that is effective in the improvement of academic performance and consequently, the effectiveness of learning process in these centers. The results are in harmony with the findings of other researches such as Salehi Amiri and Heidari Zadeh (2007), Effatnezhad (2002), Naveh Ebrahimi and Mohtadi (2008), Hyesung (2004), Littlejohn et al. (2002), Layfield and Scalon (2002), Law (2000), Nyvang (2002), Holecombe (2000), Haydn and Barton (2008), Wozney et al. (2006) and Dong (2010).

The present investigation demonstrated that cost and capital, technical and structural, educational and skill factors are prerequisites and basic premises for the development of a successful and infrastructural program in the field of employment of ICT in universities. Unfortunately, appropriate infrastructure of a program is rarely defined and developed in our country. Therefore, ICT is definitely faced with different problems when it is implemented in universities without any proper infrastructure and background. Therefore, identification and implementation of what the developers have created and reaching a level of development that developed countries and manufacturer of this technology have already reached demand identification and preparation, implementation, monitoring and evaluation. Hence, it is expected that the administrations and faculty members in universities to become familiar with the basic concepts of ICT before and during the implementation of this technology in order to institutionalize it and then, to intend to create, deploy and transfer it to the students. Administrations and authorities should be familiar with the fundamental concepts of this technology in order to encourage the faculty members to employ it effectively.

Managers and authorities should allocate adequate expenditure and invest on implementation, employment and development of ICT in universities. Allocation of adequate budget to use ICT, sharing databases and external data, allocation of expenditure on education and support, expenditure on continuous connection to the network, purchasing and equipping hardware or software facilities in the field of employment of ICT and so on are of those fundamental measures.

Technical and structural factors such as existence of telecommunications infrastructure in the field of ICT in universities, existence of sufficient

facilities (computer, telephone, modem), amount of enough space for teaching and workshops based on ICT, existence of appropriate support in the case of technical problems during working with computer, availability of subsidiary facilities and equipment such as scanner and printer in the group and existence of direct line to internet or network at the workplace of faculty members leads to the appropriate quality of presented services by ICT to the students and improvement of education efficiency.

Employment of ICT in identification and development of educational objectives and curriculums, aligning educational goals and programs with ICT and enhancing the knowledge of academic faculty members and planners lead to the improvement of technology in education in universities, which the education method changes from teacher-centered to student-centered and the requirements of active learning will be provided, consequently. In this regard, the faculty members should be enthusiastic about using educational software for teaching course materials in the first place. In the second place, appropriate educational software for the use of faculty members and students should be provided, and the conditions of familiarity with the concepts of distance education should be met and the way of using it by some of the employees, faculty members and students should be developed. Moreover, the conditions of use of computer and internet network should be provided in order to increase teamwork in students and improve the access of students and faculty members to technical books.

Regarding skill factors, appropriate reward (financial or spiritual) could be one of the methods of encouraging individuals to use ICT and encouraging faculty members to regular and continuous participation in training courses. Faculty members should deem using technology as a value and this culture should be institutionalized among them. This could be done by increasing the level of required skill and familiarity with using computer, network and so on and knowledge of faculty members about the advantages of using ICT in teaching. Moreover, overcoming difficulties and problems through ICT leads to the acceptance of changes and use of this innovative method of teaching.

Eventually, the following suggestions are proposed in line with the research.

- To consider English language and technology training workshops in order to get faster progress of the faculty members.
- Attendance of faculty members in training courses should be mandatory.

- The university should allocate adequate budget and equipment for the implementation of ICT. In this regard, special circumstances should be provided in order to connect the faculty members and students of Islamic Azad University of Sari continuously to internet network and databases. It should be noted that appropriate culture on the way of using this technology should be made accompanied with the access of students and faculty members to it. On other words, they must be justified that the existence of internet and development of website and databases in the university are only for academic researches and scientific works and they should not be used for leisure (side works) in order to make them more effective in carrying out fundamental researches and promotion of society.

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