

# The Impact of Information and Computer Technology (ICT) on Staff Organizational Entrepreneurship

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## ABSTRACT

This study was conducted to investigate the impact of ICT (Information and Computer Technology) on staff organizational entrepreneurship at Islamic Azad University in the province of Tehran. The study has adopted the correlation method and a descriptive model. There were 5000 people working as Islamic Azad University staff in the province of Tehran and they formed the population of this research. 357 people were chosen from the population for the sample set in accordance with the Morgan and Kerjisi tables and a stratified random sampling method was applied for classification. The research tools include a questionnaire designed and confirmed by the professors and experts of Islamic Azad University at Shahr-e-Rey. The validity of the questionnaire was calculated using Cranach's alpha test for staff organizational entrepreneurship and organizational entrepreneurship improvement factors.  $\alpha$  was 0.82, 0.80 respectively and results from this calculation indicated that the research tools were chosen correctly. Also, correlation and path analysis were used (SPSS15) for data analysis. Results have demonstrated a meaningful and positive relationship between ICT and the fast diffusion of feedbacks, which eliminates the defects ( $p < 0.01$ ). The results of the path analysis based on Friedman rank test have identified two significant factors related to strategies for improving staff organizational entrepreneurship. The two factors are (1) Meritocratic system development and systematizing activities, (2) Development of information and education system in University. These factors had the highest causal effects on the development of staff organizational entrepreneurship at Islamic Azad University in the province of Tehran.

**KEYWORDS:** Information and Computer Technology (ICT), staff organizational entrepreneurship, University.

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## 1. INTRODUCTION

During the past decade, the world is facing a change in innovation and technology. Organizational entrepreneurship has become a phenomenon which leads to innovative opportunities, inventive activities and emphasis on innovation in services. By providing timely and uniform distribution of information, organizational entrepreneurship creates an environment that promotes staff innovation and creativeness, and technologies such as ICT [2].

Entrepreneurship is a complex and multifaceted concept that has attracted much attention. Most of the experts agree that entrepreneurship and entrepreneurs have significant contribution to economic development [1] [4]. World watch entrepreneurship defines entrepreneurship as an effort to develop new businesses, to setup a new business, and to develop existing businesses by an individual, a team of individuals, or a corporation based on need or opportunity [3]. Entrepreneurship is a regular practice that identifies, evaluates, and creates opportunities [13] [12] [8].

Entrepreneurs usually search for opportunities that result in financial gain. Therefore, they will offer new products or innovation [10]. Organizational entrepreneurship creates business and strategic restructuring [11]. Entrepreneurial behavior promotes growth and productivity of organizations, strategic reconstruction, organizational changes and customer service. Thus, supporting entrepreneurial behavior at all hierarchical levels of large organizations is essential way in order to improve performance and increase competitive advantages [14].

So many studies in recent years have been conducted by researchers due to importance of the relationship between ICT and organizational entrepreneurship, for example:

Jordi Vilaseca R. and Associates (2007), in a study that was conducted In Spain, have demonstrated that Positive relationship was established between using ICT and improvement of process in organizational initiatives. Study have demonstrated that the organizations which use appropriate ICT, impart suitable internal and external communications, and also group activities and innovation processes are in the entrepreneurial form. Their findings indicate that forming ICT Infrastructures have major role in developing organizational entrepreneurship and promoting staff motivation [6].

Michael Stull G. (2005), in a study that was conducted through eighteen non-profit organizations in the United States and Canada, has confirmed that employee capabilities and management support facilitate entrepreneurial behavior among employees.

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Heinonen J., and korvela K. (2004), in a study that was conducted in Finland through eight organizations, has confirmed the role of management supports and encouragements, motivating people and clearness in strategies In order to spread information related with organizational entrepreneurship development [7].

Jones, C. & English, J. (2004), have Studied in Tasmania University and found that entrepreneurial learning process can familiarize the people with their capabilities to recognize opportunities through confidence and required knowledge and skills to perform the activities [5].

This study with understanding the importance and urgency of the problem, intends to emphasize ICT impact on staff organizational entrepreneurial at Islamic Azad University in the province of Tehran. These Results can determine the staff activities effectiveness and ICT application benefits.

## 2. The aims of the study

The major aim of this study is “investigating the impact of ICT on staff organizational entrepreneurship at Islamic Azad University”. Special aims are as follows:

1. Studying Characteristics of employees.
2. Investigating the relationship between ICT and staff organizational entrepreneurship characteristics.
3. Determine correlation between variables affecting staff organizational entrepreneurship.
4. Investigating strategies for improving staff organizational entrepreneurship.

## 3. MATERIAL AND METHODS

The study has adopted the correlation method and a descriptive model. There were 5000 people working as Islamic Azad University staff in the province of Tehran and they formed the population of this research. 357 people were chosen from the population for the sample set in accordance with the Morgan and Kerjsi tables and a stratified random sampling method was applied for classification.

The study gathered data from a questionnaire with 27 questions. The main components of the questionnaire are as follows: Characteristics of employees (age, education, gender and work experience), staff organizational entrepreneurship characteristics and strategies for improving staff organizational entrepreneurship. Pearson correlation was used in statistical tests to investigate the relationship between characteristics of staff organizational entrepreneurship and ICT, Single sample Student t test was used for studying characteristics of staff organizational entrepreneurship and Friedman rank test was used to determine the priority of strategies for improving staff organizational entrepreneurship.

## 4. FINDINGS

### 1. Employee Characteristics

In this study 357 people were chosen from the population for the sample set. The results have shown that 57.7% of the employees were men (n=206), 42.3% were women (n=151), the most common age of staff was 31-35 years (53.5%) and mean age was 34 years. Most of the respondents (n=219) were in the field of undergraduate courses (61.4%). Most of the staff Experience was 11-15years (32.8%) and Cumulative percent was 70.6% and the average work experience was 12 years.

Table1 Distribution of employee characteristics

Individual Characteristics	Classes	Frequency	Percent	Cumulative percent
Gender	male	206	57.7	57.7
	Female	151	42.3	100
Age	< 26 years	4	1.1	1.1
	26-30 years	73	20.5	21.6
	31-35 years	114	31.9	53.5
	36-40 years	99	27.8	81.3
	>40 years	67	18.7	100
Academic qualifications	Diploma	4	1.1	1.1
	Associate Degree	57	16	17.1
	Bachelor	219	61.4	78.5
	Masters	77	21.5	100
Work experience	Ph.D.	0	0	100
	< 6 years	36	10	10
	6-10 years	99	27.8	37.8
	11-15 years	117	32.8	70.6
	16-20 years	67	18.8	89.4
>20 years	38	10.6	100	

**2. Investigating the relationship between ICT and characteristics of staff organizational entrepreneurship.**

The overall results of the Pearson correlation coefficient (Table 2) indicated a significant positive relationship between the fast diffusion of feedbacks which eliminates the defects and ICT ( $p < 0.01$ ). Interaction among components of staff responsibility and commitment such as increasing staff motivation to improve skills, learning from mistakes and Rapid feedback and discipline of working related with ICT, indicated a significant positive relationship ( $p < 0.05$ ). No significant relationship was found about Interaction among other studied components and ICT.

Table 2 Pearson correlation coefficient between variables

Variable 1	Variable 2	r	P	Type of relationship
Employees' risk-taking	ICT	0.098	0.088	No significant relationship
Staff Responsibility and commitment	ICT	0.117*	0.027	Significant positive
Increasing confidence	ICT	0.071	0.180	No significant relationship
Increasing staff motivation to improve skills	ICT	0.112*	0.034	Significant positive
Fast diffusion of feedbacks which eliminates the defect	ICT	0.188**	0.000	Significant positive
Learning from mistakes and rapid feedback	ICT	0.123*	0.020	Significant positive
Avoid monotony of work	ICT	0.041	0.442	No significant relationship
Work discipline in the organization	ICT	0.108*	0.041	Significant positive

\* $p < 0.05$  \*\* $p < 0.01$

**3. Investigating the characteristics of staff organizational entrepreneurship at Islamic Azad University.**

t test was used to analyze collected data. The results of Table 4 which indicate the obtained mean for the whole staff and also the Single group Student t test result, shows the above average state for all components related to the characteristics of staff organizational entrepreneurship.

Table 3 The results of single group t-test about the characteristics of staff organizational entrepreneurship at Islamic Azad University

Variable	Sample mean	t	sig	Theoretical mean	df
Employee Risk taking	3.01	42.859	**%000	3	356
Staff responsibility and commitment	3.24	58.583	**%000	3	356
Increasing confidence	3.09	38.913	**%000	3	356
Increasing staff motivation to improve skills	3.52	72.530	**%000	3	356
Fast diffusion of feedbacks which eliminates the defects	3.49	57.983	**%000	3	356
Learning from mistakes and rapid feedback	3.26	42.615	**%000	3	356
Avoid monotony of work	3.04	49.540	**%000	3	356
Work discipline in the organization	3.03	40.843	**%000	3	356

\* $p < 0.05$  \*\* $p < 0.01$

**4. Investigating strategies for improving staff organizational entrepreneurship**

Six components were studied in evaluating strategies for improving staff organizational entrepreneurship. Friedman rank test was used in findings analysis and in ranking each of the components. The test results are shown in Table 4 indicates “meritocratic system development and systematizing activities” and “development of information and education system in University” have the highest importance in promotion of staff organizational entrepreneurship.

Table 4 Friedman rank test - Determine the priority of strategies for improving staff organizational entrepreneurship

Rank	Items	Item score
1	Meritocratic system development and systematizing activities	3.89
2	Development of information and education system in University	3.80
3	development of supportive leverages	3.60
4	Considering fundamental and entrepreneurial researches	3.42
5	Emphasizing on employees' risk-taking, liability and Purposefulness characteristics	3.37
6	Considering social and cultural infrastructure	2.92

Liker spectrum: 1. Very few, 2. few, 3. medium, 4. many, 5. Too many

Friedman Test

N	357
Chi-Square	76953
Df	5
Sig	0.000

## 5. Conclusions

This study is attempted to investigate the relationship between ICT and staff organizational entrepreneurship. The results of this study indicated that between the fast diffusion of feedbacks which eliminates the defects and ICT, have a significant positive relationship ( $p < 0.01$ ). Interaction among components of staff responsibility and commitment such as increasing staff motivation to improve skills, learning from mistakes and Rapid feedback and discipline of working related with ICT, indicated a significant positive relationship ( $p < 0.05$ ).

The obtained mean for the whole staff and results of the Student t test, indicated that all components related to the characteristics of staff organizational entrepreneurship are above the average state. Therefore, we can use the results as a suitable background for Implementation and promotion of entrepreneurial education programs.

The result of this study indicated that the most important strategies for improving staff organizational entrepreneurship in order of ranking are “meritocratic system development and systematizing activities” and “development of Information and education system in University”. Managers should care about these subjects in the future planning and implementing new strategies for improving staff organizational entrepreneurship.

## 6. Recommendations

1. For future policies and plans of the University, encouraging procedures must be described in order to make employees more interested in entrepreneurship subjects.
2. Offering in-service training to employees and teaching them entrepreneurship topics, which will result in development of entrepreneurial culture within the organization.
3. Offering encouragements with respect to educational level, job status and employees’ psychological characteristics in return of every creative and entrepreneurship endeavor that directly or indirectly causes improvement in job tasks and increases efficiency in performing assigned activities, and also creates an appropriate atmosphere for the staff to learn entrepreneurship skills.
4. Propagate sufficient information about supporting entrepreneurial activities via Medias and booklets.
5. Developing legal supports for entrepreneurial activities in order to develop entrepreneurship spirit within the organization.

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