

# Identify and Evaluate Strategies for the Development of ICT-Based Entrepreneurship

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## Abstract

This study aims to identify and evaluate strategies for the development of ICT-based entrepreneurship from the perspective of professionals and entrepreneurs based on the model Ramifications (behavioral, structural and contextual), using descriptive survey was conducted. The population includes all professionals, as teachers and educators of entrepreneurship and Entrepreneurs in the field of ICT education and other higher education institutions in Kermanshah to 74 people. To determine the sample size given that the research has two population (teachers and educators of entrepreneurship and entrepreneurs in the field of ICT) are a limited number of census method was used. Data was collected through questionnaire. The validity by six experts in the field of entrepreneurship and ICT was approved. Reliability was assessed by Cronbach's alpha and 81 percent, respectively. To analyze the data, descriptive and inferential statistics (ANOVA and Duncan's test) were used. Studies show that the way of employing these strategies, in order of priority are: Behavioral strategies with an average of 4/17, Structural strategies with an average of 4/03 and contextual strategies with an average of 3/91. According to the above it can be seen that structural and behavioral strategies are almost the same size and have the greatest impact and the contextual Strategy the least effect on the development of entrepreneurship among the strategies listed there through ICT. The use of any of entrepreneurial development strategies outlined in this study, according to the points earned can be prioritized in the following order: The training of young entrepreneurs with expertise in ICT, especially small and medium-sized businesses with an average of 4/46, Qualitative development of electronic networks with an average of 4/35 and promote electronic commerce with an average of 4/22.

**Keywords:** entrepreneurship, ICT, Behavioral strategies, Structural strategies, contextual strategies.

## 1. Introduction:

Today, entrepreneurship is heavily dependent on IT infrastructure and it is a great advantage. This may be not exaggerated If modern entrepreneurship without ICT, impossible Consider. On the other hand the development of ICT-based entrepreneurship. Entrepreneurial activity leads to the identification of needs, the creation of ideas and production technologies. Entrepreneurship is the engine technology development and the creation of new technologies. Developed countries, leaders are making use of entrepreneurial and technological development. (Ahmadpur Dariani, 2000). Global developments show that ICT is the most important field of activity of these countries in the last century. Reflecting on the economic situation and the process of development in developed countries and developing entrepreneurship have been paid attention to the issue, Show that these countries have been able to achieve substantial progress in various fields of economic and social crises, or at least to the ongoing health crisis behind us and anticipate that their occurrence in the future, inhibiting the development of information and communication systems on the pace of change in the process of developments in the field of employment has increased, The need to engage and align with the trend for our country, given the inevitable changes in the way it looks, Moreover, economic development programs and its contribution to raising the nation's GDP planning the future of will without considering this approach (Maadi Roodsari, 2005).

In general, the scientific community and general economic developments, with an emphasis on knowledge and increase its contribution to entrepreneurship and productive employment is possible (Johnson at all, 2006). Changes in the composition of the population in the coming years, the need for innovation in business and create new job opportunities has caused concern now planners entrepreneurship for young people and dynamic country, that in this way the lack of skills is a huge problem. (Moghimi, 2002). In this regard, the approach towards vocational training is one of the possible solutions and effective, increasing the desire and interest in the young generation in this training reflects this fact. Therefore, effective management of ICT-based and principles can be a good investment and a clear horizon ahead of us with a powerful and creative. (Dadar, 2005).

With the development of information and communication systems and cultural boundaries between nations is growing slightly colored. ICT in all social activities, including entrepreneurial affected and many of them have created major changes. Today, entrepreneurship is heavily dependent on IT infrastructure and it is a great advantage. (Motley, 2005). The features and capabilities of information technology could have significant flexibility in the field of show entrepreneurship. This feature increases the efficiency of this technology is in entrepreneurship and job creation. In an overview of these features can be expressed as follows: increase speed,

increase accuracy, reduce the physical size of the buckets of information, eliminating some administrative corruption, the ability to work full-time, enabling remote collaboration, reduce system cost or organization. (Maadi Roodsari, 2006).

It can be concluded that ICT, is a strong factor for competition. In addition, the trade ICT as a catalyst for private sector growth and service, as a dynamic part of the economy is. These technologies creates opportunities and new situations, especially in relation to e-commerce and electronic services, including e-government is. ICT plays an important role in the development of small and medium enterprises and the possibility of mobility in the activities of these companies in the world of e-commerce, provide and increase economic capabilities, expand activities and their conversion into larger companies, with the possibility of competition at all levels provides international. (Akrami fard, 2007).

Today it has become clear to all that information and communication are two important power. They are value your time and create value. A person who had knowledge of different markets and commodity prices in those markets, or is aware of the past and the future market, better decisions can be taken to achieve greater profits. Information In addition to the intrinsic value, another aspect that leads to knowledge and it affects the decision-making mechanism and perform better. Communications, as well as valuable information and added value to those that fit the size and type of communication. People with diverse communications, with more and more powerful, the better are your work and deliver results sooner. (Alipur, 2006).

In developed countries, the Internet is one of the most important tools offer entrepreneurs and the people of the features added by the network and benefit from its advantages. In our country, the lack of a strong and significant development of the Internet, perhaps this is not very strong entrepreneurial networking tool, while the mobile phone is an important tool for entrepreneurship in the country. No mobile phone almost no sense of entrepreneurship. Because the mobile phone access in the specific time and a specific place for approximately 24 hours independent of the place has changed and so has raised the value of communication. So entrepreneurship is strongly dependent on strong communications, this tool needs. Examples of entrepreneurship in the country by supporting this. (Maadi Roodsari, 2006).

Singapore has based its development on information technology and the complete fulfillment, e-government to become an intelligent island. India, which thirty years ago with the development of the IT industry has begun exporting software to more than 2.2 million jobs have been created, and South Korea 40% investment information industry has committed his future to. Italy, in 2000 more than one million and two hundred thousand jobs have been created in the IT industry and, ultimately, the figures show that 80% of new jobs in developed countries, directly or indirectly related to the IT industry. (Jariani, 2002).

Developing countries need to speed the access to information technology and use it to move. For example, the Korean government of its technological activities in five areas of information technology, biotechnology, nanotechnology, environmental technology and cultural technologies of information technology has given the highest priority. Nevertheless, it is appropriate that our country quickly to deepen its activity in the field of technology in the competitive world of the information age have anything to say. Therefore, in this study we intend to develop ways ICT-based entrepreneurship to examine. In this new system, how in the light of technological capabilities, to the creation of new jobs, were in the process of entrepreneurship.

## 2. Methodology

This research is descriptive method survey. Descriptive research, is both practical and fundamental aspects. The population includes all professionals, as teachers and educators of entrepreneurship and entrepreneurs in the field of ICT education and other higher education institutions are in Kermanshah. The study population consisted of two groups, namely: 1. the teachers and educators of entrepreneurship education and other higher education institutions in Kermanshah. 2. ICT education entrepreneurs and other higher education institutions in Kermanshah. The total population of 74 persons. To determine the sample size given that the research has two population (teachers and professors of entrepreneurship and entrepreneurs in the field of ICT) and with a limited number of census method was used. Given that the number of questionnaires were returned, the number of respondents surveyed and analyzed 54 questionnaires were. The data from the questionnaire (response packet) is used, the validity by six members of the entrepreneurial and ICT professionals was approved. Reliability was assessed by Cronbach's alpha and 81 percent, respectively. To analyze the data, descriptive and inferential statistics (ANOVA and Duncan's test) were used. This study sought to answer the following questions:

The main questions:

1. The most important behavioral strategies in the development of ICT-based entrepreneurship what?
2. The most important Structural strategies in the development of ICT-based entrepreneurship what?
3. The most important contextual strategies in the development of ICT-based entrepreneurship what?
4. Prioritize effective strategies on the development of ICT-based entrepreneurship what?

Sub questions:

1. Between the views of teachers and educators and entrepreneurs on the impact of behavioral strategies in the

- development of ICT-based entrepreneurship there is a significant difference?
2. Between the views of teachers and educators and entrepreneurs on the impact of Structural strategies in the development of ICT-based entrepreneurship there is a significant difference?
  3. Between the views of teachers and educators and entrepreneurs on the impact of contextual strategies in the development of ICT-based entrepreneurship there is a significant difference?

### 3. Findings

1. The most important behavioral strategies in the development of ICT-based entrepreneurship what?

**Table 1. Descriptive statistics data on behavioral strategies developed ICT-based entrepreneurship**

Questions	Respondents	Average	SD	Variance	
behavioral strategies	1	54	4.13	0.754	0.568
	2	54	4.24	0.699	0.488
	3	54	4.31	0.773	0.597
	4	54	3.80	0.855	0.731
	5	54	4.06	0.738	0.544
	6	54	4.46	0.636	4.04

**Table 2. Behavioral strategies ANOVA**

	Sum of squares	Df	average of squares	F	Sig
<b>Between group</b>	14.370	5	2.874	5.174	0.000
<b>Intergroup</b>	176.630	318	0.555		
<b>Total</b>	191	323			

Given the significant level given in Table (2) which is equal to 0.000 and compare the results with 0.05 permissible error, %95 are assumed to be rejected. This means that the impact of various behavioral strategies for the development of ICT-based entrepreneurship there is a significant difference. In order to explore these differences and prioritize the strategies listed on Duncan's test was used.

**Table 3. Duncan test strategies for the behavioral strategies development of ICT-based entrepreneurship**

behavioral strategies		Subgroup		
		1	2	3
1	The training of young entrepreneurs with expertise in ICT			4.46
2	The development of quality vocational training in schools and high schools			4.31
3	Understanding the basics of entrepreneurship through information technology for students		4.24	
4	Understanding ICDL for entrepreneurs		4.13	
5	Education and the promotion of e-marketing		4.06	
6	Training and development of remote work	3.80		

According to the information in Table (3) observed that the training of young entrepreneurs with expertise in ICT and development of quality vocational training in schools and high schools, almost the same size and have the greatest impact, and Training and development of remote work has less impact on the development of ICT-based entrepreneurship.

2. The most important Structural strategies in the development of ICT-based entrepreneurship what?

**Table 4. Descriptive statistics data on structural strategies developed ICT-based entrepreneurship**

Questions	Respondents	Average	SD	Variance	
Structural strategies	7	54	4.28	0.685	0.469
	8	54	4.02	0.858	0.735
	9	54	3.85	0.833	0.695
	10	54	3.91	0.976	0.954
	11	54	3.67	0.932	0.868
	12	54	4.13	0.802	0.643
	13	54	4.35	0.731	0.534

**Table 5. Structural strategies ANOVA**

	Sum of squares	Df	average of squares	F	Sig
<b>Between group</b>	19.979	6	3.330	5.025	0.000
<b>Intergroup</b>	245.852	371	0.663		
<b>Total</b>	265.831	377			

Given the significant level given in Table (5) which is equal to 0.000 and compare the results with 0.05

permissible error, %95 are assumed to be rejected. This means that the impact of various structural strategies for the development of ICT-based entrepreneurship there is a significant difference. In order to explore these differences and prioritize the strategies listed on Duncan's test was used.

**Table 6. Duncan test strategies for the structural strategies development of ICT-based entrepreneurship**

structural strategies		Subgroup		
		1	2	3
1	Qualitative development of electronic networks			4.35
2	Creating support networks ICT entrepreneurs			4.28
3	Creating a safe working environment for entrepreneurs			4.13
4	Provide financial assistance to entrepreneurs			4.02
5	Creating Entrepreneurship centers and counseling services in schools and higher education institutions		3.85	
6	The development and implementation of laws and regulations relating to the ownership of goods		3.85	
7	Reduction requirements and administrative procedures, Banking and company registration	3.67		

According to the information in Table (6) can be seen that structural strategies first to fourth almost the same size and have the greatest impact and reduce requirements and administrative procedures, banking and registration of companies has less impact in between the structural strategies based on the development of entrepreneurship information technology and communications.

3. The most important contextual strategies in the development of ICT-based entrepreneurship what?

**Table 7. Descriptive statistics data on contextual strategies developed ICT-based entrepreneurship**

Questions	Respondents	Average	SD	Variance	
contextual strategies	14	53	3.75	0.617	0.381
	15	53	3.81	0.900	0.810
	16	54	4.22	0.744	0.553
	17	54	3.87	0.891	0.794
	18	54	4.02	0.961	0.924

**Table 8. Contextual strategies ANOVA**

	Sum of squares	Df	average of squares	F	Sig
<b>Between group</b>	10.259	4	2.565	3.230	0.013
<b>Intergroup</b>	210.426	265	0.794		
<b>Total</b>	220.685	269			

Given the significant level given in Table (8) which is equal to 0.013 and compare the results with 0.05 permissible error, %95 are assumed to be rejected. This means that the impact of various contextual strategies for the development of ICT-based entrepreneurship there is a significant difference. In order to explore these differences and prioritize the strategies listed on Duncan's test was used.

**Table 9. Duncan test strategies for the contextual strategies development of ICT-based entrepreneurship**

contextual strategies		Subgroup	
		1	2
1	Promote e-commerce		4.22
2	Choose an idea and a business for students		4.02
3	Conference related to the introduction of IT-related business	3.87	
4	Creating and strengthening social networks	3.74	
5	Increase in Internet users	3.69	

According to the information in Table (9) it can be seen that the first and second contextual strategies are almost the same size and have the greatest impact, and third strategies in the least impact on the contextual strategies the development of ICT-based entrepreneurship.

4. Prioritize effective strategies on the development of ICT-based entrepreneurship what?

**Table 10. Descriptive statistics data from ICT-based entrepreneurship development strategies**

strategies	Respondents	Average	SD	Variance
<b>behavioral</b>	54	4.17	0.426	0.058
<b>structural</b>	54	4.03	0.470	0.064
<b>contextual</b>	54	3.91	0.548	0.745

**Table 11. Strategies ANOVA**

	Sum of squares	Df	average of squares	F	Sig
<b>Between group</b>	1.817	2	0.909	3.879	0.023
<b>Intergroup</b>	37.238	159	0.234		
<b>Total</b>	39.055	161			

Given the significant level given in Table (11) which is equal to 0.023 and compare the results with 0.05 permissible error, %95 are assumed to be rejected. This means that the impact of various strategies for the development of ICT-based entrepreneurship there is a significant difference. In order to explore these differences and prioritize the strategies listed on Duncan's test was used.

**Table 12. Duncan ICT-based entrepreneurship development strategies**

strategies	Subgroup	
	1	2
<b>behavioral</b>	4.17	
<b>structural</b>	4.03	
<b>contextual</b>		3.91

According to the information in the table (12) observed that behavioral strategies 4.17 and structural strategies 4.03 almost equally and most effective strategies and the contextual strategies 3.91 minimal impact on the development of entrepreneurship among the strategies mentioned ICT is based.

Sub questions 1: Between the views of teachers and educators and entrepreneurs on the impact of behavioral strategies in the development of ICT-based entrepreneurship there is a significant difference?

**Table 13. Descriptive statistics and behavioral strategies for the development of ICT-based entrepreneurship**

Respondents	Sample size	Average	SD	SD of the mean
<b>Entrepreneurs</b>	24	4.14	0.392	0.080
<b>teachers and educators</b>	30	4.19	0.456	0.083

**Table 14. Statistical analysis of behavioral strategies for the development of ICT-based entrepreneurship**

	Levene test for equality of variances		Equality test average			
	F	Sig	t-test	Df	Sig	Mean differences
<b>Assuming equal variances</b>	0.566	0.455	-0.425	52	0.672	-0.050
<b>Assuming unequal variances</b>			-0.433	51.703	0.667	-0.050

Given the significant level shown in the table (14) in the Levene test is equal to 0.455, and compare it with the permissible error of 0.50, assuming equal variances will be accepted. In order to test the hypothesis of equality of means should we interpret the first row of the table. Given the significance level given in the table in section equality test means that the test is equal to 0.672, and compare it with permissible error of 0.50, the null hypothesis is accepted. That is the view of teachers and educators and entrepreneurs on the impact of behavioral strategies in the development of ICT-based entrepreneurship statistically significant difference there.

Sub questions 2: Between the views of teachers and educators and entrepreneurs on the impact of Structural strategies in the development of ICT-based entrepreneurship there is a significant difference?

**Table 15. Descriptive statistics and Structural I strategies for the development of ICT-based entrepreneurship**

Respondents	Sample size	Average	SD	SD of the mean
<b>Entrepreneurs</b>	24	3.98	0.553	0.113
<b>teachers and educators</b>	30	4.07	0.398	0.073

**Table 16. Statistical analysis of Structural strategies for the development of ICT-based entrepreneurship**

	Levene test for equality of variances		Equality test average			
	F	Sig	t-test	Df	Sig	Mean differences
<b>Assuming equal variances</b>	1.719	0.196	-0.652	52	0.517	-0.084
<b>Assuming unequal variances</b>			-0.629	40.52	0.533	-0.084

Given the significant level shown in the table (14) in the Levene test is equal to 0.196, and compare it with the permissible error of 0.50, assuming equal variances will be accepted. In order to test the hypothesis of equality of means should we interpret the first row of the table. Given the significance level given in the table in section equality test means that the test is equal to 0.517, and compare it with permissible error of 0.50, the null hypothesis is accepted. That is the view of teachers and educators and entrepreneurs on the impact of Structural strategies in the development of ICT-based entrepreneurship statistically significant difference there.

Sub questions 3: Between the views of teachers and educators and entrepreneurs on the impact of contextual strategies in the development of ICT-based entrepreneurship there is a significant difference?



**Table 17. Descriptive statistics and contextual strategies for the development of ICT-based entrepreneurship**

Respondents	Sample size	Average	SD	SD of the mean
Entrepreneurs	24	3.85	0.593	0.121
teachers and educators	30	3.95	0.514	0.094

**Table 18. Statistical analysis of contextual strategies for the development of ICT-based entrepreneurship**

	Levene test for equality of variances		Equality test average			
	F	Sig	t-test	Df	Sig	Mean differences
Assuming equal variances	0.586	0.447	-0.685	52	0.496	-0.103
Assuming unequal variances			-0.674	45.793	0.503	-0.103

Given the significant level shown in the table (18) in the Levene test is equal to 0.447, and compare it with the permissible error of 0.50, assuming equal variances will be accepted. In order to test the hypothesis of equality of means should we interpret the first row of the table. Given the significance level given in the table in section equality test means that the test is equal to 0.496, and compare it with permissible error of 0.50, the null hypothesis is accepted. That is the view of teachers and educators and entrepreneurs on the impact of contextual strategies in the development of ICT-based entrepreneurship statistically significant difference there.

#### 4. Conclusions:

According to the information given in the descriptive statistics can be seen from 54 people who have participated in this study, A total of 24 people, equivalent to 44.4 percent of entrepreneurs who, 12 males and 10 females, and 2 patients did not respond to the question of gender, And 30 percent of teachers and educators are equal to 55.6 of which 19 are males and 11 females. It should be noted that the average age of teachers and educators of respondents between 23 and 35 years, but the average age of entrepreneurs between 44 to 51 years. The maximum age for teachers and educators dedicated to 51 years of age and at least a high school education are respondents 1 and about entrepreneurs. Most respondents MA 34 and older.

In inferential statistics is also available information indicates that:

Among the questions behavioral strategies, training of young entrepreneurs with expertise in ICT and development of quality vocational training in schools and high schools, almost the same size and have the greatest impact, and Training and development of remote work has less impact on the development of ICT-based entrepreneurship. Among the structural strategies, Qualitative development of electronic networks, creating support networks ICT entrepreneurs, creating a safe working environment for entrepreneurs and Provide financial assistance to entrepreneurs almost the same size and have the greatest impact, and Reduction requirements and administrative procedures, Banking and company registration has less impact on the development of ICT-based entrepreneurship and among the contextual strategies, Promote e-commerce and Choose an idea and a business for students almost the same size and have the greatest impact, and Conference related to the introduction of IT-related business, Creating and strengthening social networks and Increase in Internet users has less impact on the development of ICT-based entrepreneurship.

2. Among the strategies mentioned above is the fact that all the strategies for the development of ICT-based entrepreneurship development affect, the impact of behavioral strategies for more than two other strategies, although statistically the impact of structural and behavioral strategies almost equally expressed.

3. Almost all entrepreneurs, teachers, and educators believe that the behavioral, structural and contextual strategies influence on the development of ICT-based entrepreneurship.

According to the results, from the perspective of entrepreneurship experts in all questions of behavioral, structural and contextual strategies, Behavioral strategies more than other strategies affect the development of ICT-based entrepreneurship and was recognized as the first priority. Structural strategies for the development of ICT-based entrepreneurship is known as second priority. Contextual strategies for the development of ICT-based entrepreneurship is known as Third priority.

In order to prioritize the strategies listed Duncan's test was used. Therefore, ways to apply these strategies, in order of preference are: behavioral with an average of 4.17, Structural with an average of 4.03 and Contextual with an average of 3.91.

According to the information above can be seen that structural and behavioral strategies are almost the same, and most effective, and the Contextual strategies least impact on the strategy of development of entrepreneurship in ICT are among the strategies mentioned. The results of this research study (Maadi Roodsari, 2005, Akrami fard, 2007, Zali, 2008) is aligned.

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