

## Providing functional Model for Developing Digital Entrepreneurship

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### Abstract:

Digital and Information technologies are fundamental factors for all organizations which carry out organizational and social activities levels and it causes to change the nature of business. Create what is a type of entrepreneurship that is extracted from the concept of entrepreneurship. Digital and information technology is one of electronic style of this creation. Therefore, it can be said that an organization utilizes digital entrepreneurship providing that it employs the Internet, Information and Communication Technology as devices for producing and developing in their business and trend opportunities. Present paper is planning to be identified the major structural and content factors of digital entrepreneurship. Additionally, it is programmed to study the quality constructing the digital Entrepreneurship.

To achieve to hinted subjects, it has been used different theories, application survey and questionnaire of digital entrepreneurship. The sample size consists of 137 experts of entrepreneurship which were voted from Science and Technology Park in East Azerbaijan-Iran in 2013. Data analysis was carried out by using Factor Analysis, Structural Equation, Freidman Mean Ranking Test, AHP Rankin Analysis. It can be concluded that the consequences of present study illustrates that there is significant relationship between content and structural factors together. Moreover, it is existence meaningful results in AHP.

**Keywords:** Digital entrepreneurship, Informational and Communicational Technology (ICT), Virtual Team and ICT Clusters.

### Introduction:

The majority of organizations have initiated doing digital business (e.g. selling their produces online, by selling digital wares and etc.). the key question is the quality of digital and traditional entrepreneurship initiation due to their distinction in their functions. The first thing in both is

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entrepreneurs and managers ought to recognize the environment opportunities, pitfalls and hazards which have directly and indirectly relation to digital entrepreneurship, such as; typology of new digital ventures, the characteristics of each type of new digital venture, and a discussion of how those characteristics shape the critical success factors of each type of venture.

One major factor that might be between digital entrepreneurship and traditional entrepreneurship is the production whether is a good or a service. A new venture that sells digital goods or services are pursuing a form of entrepreneurship that is at least mildly digital and Faces significant differences in how its market will respond (e.g. piracy of digital goods vs. theft of non-digital ones), as the recording industry has learned. Perceiving how digital entrepreneurship works will become more and more essential for organizing industries as well as to practitioners and scholars of entrepreneurship.

Another factor that may cause critical differences is the workplace itself between the feature of digital and traditional ventures.

present research attempts to investigate the main factors which play significant role on improving and developing digital entrepreneurship and transporting from traditional entrepreneurship to digital entrepreneurship and employing electronic and information technology for accomplishing appropriate business which is better in today's competitive environment.

### **Literature Review**

Market orientation, an organization-wide centers on tracking and responding to customer needs and competitor performance (Slater & Naver, 1995; Naver & Slater, 1990; Kohli & Jaworski, 1990; Deshpands & Webster, 1989) is important to most organizations. However, in the contexts of digital entrepreneurship, this phenomenon may be particularly widespread because of the obligatory emphasis on technology. Once the principals of a new digital venture have mastered, the technology needs to operate their business – no small task- they may feel that they know what need to know in order to be victorious, disregarding the principles of market orientation cause collapsing in new venture.

### **Entrepreneurship in the digital**

Comprehending of entrepreneurship developed more broadly to include the risk-taking behaviors of individuals who pursue perceived

opportunities (Ireland, Reutzel & Webb, 2005; Shane & Venkatraman, 2000). Stevenson (1985) defined entrepreneurship as the pursuit of opportunity beyond the resources currently controlled, and Venkatraman (1997) explained the scholarly field of entrepreneurship as the examination of how, by whom, and with what effects opportunities are discovered, evaluated, and exploited to create future goods and services.

Following these definitions, the academic field of entrepreneurship research has been examined the traits and characteristics of entrepreneurs, as well as the market and economic conditions surrounding entrepreneurial activities (Thornton, 1999).

According to Drucker (1986), entrepreneurs explore for changing and exploiting it as an opportunity. Entrepreneurship has been qualified as a source of disturbance of the competitive conditions, generating conditions of “creative destruction” (Schumpeter, 1934). The Schumpeterian perspective on entrepreneurship posits that entrepreneurs render certain industries obsolete while creating new ones. This perspective seems especially useful to understanding digital entrepreneurship, since digital media and information technologies have generated new conditions for communication as well as new opportunities for business models while also damaging long-standing, established industries (Porter, 2001). Key characteristics of the competitive changes associated with the digital entrepreneurship include the greater ability to process and transfer information instantly and freely and the digitization of processes and activities (Brynjolfsson & Kahin 2002), (Negroponte, 1995), (Tapscott, 1996).

### **Entrepreneurship and Digital Entrepreneurship**

The serious characteristics and aspects of the entrepreneurship progression have been known and clarified in earlier literature (Timmons and Spinelli, 2004; Kuratko and Hodgetts, 2004). Entrepreneurship includes recognizing and seizing opportunities, transforming those opportunities into marketable goods or services, adding value through time and resources, assuming risk, and realizing reward. Entrepreneurial activities may occur in a variety of setting, including new and old ventures, non-profit institutions and the public sector. In short, new value creation is the defining characteristic of entrepreneurship.

Digital Entrepreneurship is subcategory of entrepreneurship in which some or all of what would be physical in a traditional organization has

been digitized. Hence, digital entrepreneurship implies entrepreneurship activities connected to some degree of digital goods or services, or with other forms of digital activity. Given the rapid rise of digital activities among all firms, it seems likely that digital entrepreneurship will become more and more common, suggesting a need for a deeper understanding of this phenomenon.

To better understand digital entrepreneurship, a typology must be developed to distinguish the degree of digitalization that pervades any business environment. A beginning point for such a typology should explore the potential of digitalization within the activities, processes, boundaries and relationships associated with the firm in other words the firm's value chain. The degree of business digitalization may be derived through: 1) the digital nature of a firm's good or service, 2) the digital distribution potential of a good or service, 3) the potential digital interactions with key external stakeholders within the value chain and 4) the digital potential of virtual internal activities associated with a firm's operation.

These four elements serve as a means to define the degree of digitalization associated with specific firms and industries. Thus, digital entrepreneurship implies entrepreneurship, or new value creation, involving digital goods or services, digital distribution, a digital workplace, a digital marketplace, or some combination of these. This entrepreneurship activity relies on information technology to create market, distribute, transform or (in the case of digital services) perform the product. While information technology is associated with many organizations productivity, business performance and customer; it serves as the basic infrastructure in digital entrepreneurship. Without information technology, digital entrepreneurs would be unable to deliver their products or services and in some cases the product or service itself could not exist without information technology. Digital entrepreneurship thus exists on the cusp of two disciplines: management (particularly entrepreneurship) and information systems.

### **Digital workplace**

The reach of the Internet also allows digital entrepreneurship to take advantage to potential employees and partnerships all over the globe without forcing anyone to relocate. Global virtual teams can offer considerable benefits to the digital entrepreneur, making it easier to locate

and hire talent, harnessing cultural diversity, importing resource utilization and increasing flexibility and responsiveness (Duart and Snyder, 1999). However, there is a potential cost as well. Managing virtual teams presents challenges very different from those experienced by normal managers (Cramton, 2002; Kayworth and Leidner, 2000), and digital entrepreneurs who take advantage of the digital workplace should be aware of these challenges.

### **Digital Service**

Offering services in the digital realm is a big business growing bigger. From a technical standpoint some of these services may amount to more than toggling a few bits in a computer. To the customer, however, the service may be much nothing more and considerable profits can be made when the cost of the service is minimal and the value to the customer is high. The trick, from the perspective of the digital entrepreneur, is to ensure that the actual service provided is worth the price they charge.

### **Digital Product**

Having a digital product provides advantages beyond the case of manufacturing, storing and shipping. The product can be modified easily, to the point where incremental innovation can be done almost seamlessly and even radical changes can be made without seriously disrupting the process by which the product is marketed, produced and sold. Thus, digital entrepreneurs introducing a new product may find that they have escaped the confines of the Abernathy and Utterback (1978) model which suggests that process innovation occurs after a dominant design has emerged and product innovation has started to fall off; process innovation may precede product innovation instead of following it, or the two may no longer be temporally related at all.

## **THE MAIN FACTORS OF DIGITAL ENTREPRENEURSHIP IN THE PRESENT STUDY**

The researcher in this research has divided the main factors of EN in to group that is namely: structural factors and content factors, and has divided these two groups into some items. All of factors with their explanation is following:

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**STRUCTURAL FACTORS OF DIGITAL ENTREPRENEURSHIP****1- Developing Infrastructure of ICT (Information and Communication Technology) for Digital Entrepreneurship:**

ICT basics include network equipments, e.g. personal computer and telephone lines (Howard and Blaise, 1993).

**2- Digital Knowledge:** it is undoubtedly the most important factor for doing e-entrepreneurship and e-business, as well as according to the current situation of development, in some of country which there are ICT knowledge in low level, so they need to present educational programs for creating and improving ICT knowledge cause to increase the ICT skills in the businessman and entrepreneurs (World Bank, 2000).

**3- Telecommunication:** considering to telecommunication operators cause to decrease the communication expenditures, especially in the competitive environment. So, many private companies tend to make new predictions and services by using innovation process for increasing the communication the worldwide (Johansson et al., 2006) .

**4- Government Support from Electronic Entrepreneurship Development:** The government has double roles for improving business activities; the first role concerns to facilitate the E-business activities by providing appreciate infrastructures and favorable policies; e.g. tax low (World Bank, 2000). On the other hands, the government can help to E-entrepreneurship development by follows:

- Creating E-business institutions by logical ways.
- Increasing investment in infrastructures of ICT.
- Enhancing the business information for E-business application by influence in global markets.
- Investing in capacity of country for improving innovation and entrepreneurship capability.

**5- University Role in Digital Entrepreneurship development:** one of effective way for educating entrepreneurship is university. The university centers are as an element of innovation system and has introduced as the bridge that connects knowledge and technology to economic and business development. Likewise, the university has an important role in creating entrepreneur people.

**6- On-line Services Role in Digital Entrepreneurship development:** there are some services that some entrepreneurs need to them. These services include: data collection, network building, consulting in the different areas (e.g. marketing, management, accounting) that can said that the internet is a strongly media for presenting these services to business development (Evns and Volery, 2001).

## **CONTENT FACTORS OF DIGITAL ENTREPRENEURSHIP**

**1- Cultural Development of Digital Entrepreneurship:** Entrepreneurship culture is collection of values, views, norms and behaviors that are cause to create identity in entrepreneurs. The kind of views, values and norms in the society and business environment are determined, and thus, the culture is an important index how to determine growth and progressive in the each environment. People who are entrepreneur have some especial personality characteristic that follow: risk-taker, innovative and creative, responsible, self-confidence, be able to communicate and etc. and can be said that these characteristics are as the culture of creative and entrepreneur's people.

**2- Knowledge-Based Human Resources:** according to Matlay (2004), knowledge-base human resources and recruiting and skills promoting processes are the basic and main principle for human resources management and E-business development strategies.

**3- Internet Security in E-Business:** one of important factor in internet interactions is security. Security in the internet business cause to increase the board of interactions in the markets and consequently, cause to enter new unites and companies to internet markets (Krecke, 2005).

**4- Appearance the Virtual Electronics Teams:** virtual teams is the group of people who is diffusion form agriculture view and using different syntactic to connect together (Davis, 2004). Matlay and Westhead (2005) have studied about virtual team in European tourism industry about 15 studies. The results of their studies were illustrated that appearance the virtual teams from E-entrepreneurship have formed the competitive core of success e-entrepreneurship in European.

### **5- Developing the Clusters of ITC and Clusters of E-Business:**

The networks are as social spaces that to use as experts interactions for realizing the real values for success achievement in e-business (Steinberg, 2004). And probably, the famous and important clusters about ICT are Silicon Valley and Masochist (Bouwman and Hulsink, 2002).

considering to above subjects about digital entrepreneurship and the explanation of its factors namely: Structural and content factors. It can be stated that the main questions of present study are as follow;

- 1- According to structural factors of digital entrepreneurship, is there any difference in structural factors' average?
- 2- According to content factors of digital entrepreneurship, is there any difference in content factors' average?
- 3- Is there acceptable goodness of fit in voted factors and presented model in present study?
- 4- What is the priority of structural and content factor in recent research due to responder's?

### **METHODOLOGY**

For responding to paper's questions the researchers decided to employ useful statistical methods, such as; One Sample T-test, Factor Analysis, Friedman Mean Ranking Test and AHP Ranking Analysis. And the next step, the results of each test were compared together. Regarding to the subject is "**Identify Affecting Factors and Resources of Creating and Developing Digital Entrepreneurship**", therefore, the variables are respectively structural and content factors; Developing Infrastructure of ICT, Digital Knowledge, Telecommunication, Government Support, University Role, and On-line Services Role related to structural factors and Cultural Development, Knowledge-Based Human Resources, Internet Security in E-Business, Appearance the Virtual Electronics Teams, and Developing the Clusters of ITC and Clusters of E-Business related to content factors.

Data were collected by the questionnaire of Digital Entrepreneurship of 137 Medium and Small Companies of East Azerbaijan Science & Technology Park (**EASTP**) of East Azerbaijan-Iran. EASTP was founded in the year 2003. It is located in Tabriz, Capital of East Azerbaijan province, Islamic Republic of Iran. On June 3rd 2003 East Park became a member of IASP. IASP (International Association of Science Parks)



established in 1984- is located in Spain. It consist members from 73 different countries from all over the word .East Azerbaijan Science & Technology Park is now a full member of IASP (2008).

The questionnaire's reliability of this questionnaire was reported 0.87. The questionnaires used 5 point Likert scales (1 represent strongly disagree and 5 represent strongly agree) to measure the construct. Data analysis was carried out by using the statistical program packages SPSS 17.0, LISREL 8.54, Expert Choice 11.1.3.

## QUESTIONS EXAMINATION

### 1) FIRST QUESTION EXAMINATION:

Table-1 illustrates the One-Sample T-Test of six selected items associate with Structural Factors of Digital Entrepreneurship (SDE), that are Government Support, University Role, On-line Services Role, Telecommunication, Digital Knowledge and Developing Infrastructure of ICT.

**Table-1: Sample T-test of personals expectation about The SDE Factors (n=137)**

Structural Factors of DE	Mean	Std. Deviation	Mean Difference	Sig. (2-tailed)	T-Value
Developing Infrastructure of ICT	3.8357	1.11967	0.77971	0.000	5.944
Digital Knowledge	3.6715	1.13686	0.66377	0.000	5.581
Government Support	3.2812	1.15532	0.53333	0.000	3.890
On-line Services Role	3.6522	1.12957	0.62368	0.000	5.237
Telecommunication	3.4425	1.03583	0.66087	0.000	4.599
University Role	3.3763	1.23136	0.50435	0.000	3.933

The information of the table-1 is respectively; mean, standardize deviation, mean difference, significant amount, and T-value. According to the question of present study, the selected items would be acceptable as long as whether the amount of significant not to be less than 0.5 or the rate of "t-value" not to be between -1.96 and 1.96 and these situations show that the result of each item should be agreeable in 95 percent confidence level. In brief, due to the table-2 can be said that all item, considering to the 95 percent confidence level regulations, are acceptable according to

responders' expectations, and among studied factors for Structural Factors of Digital Entrepreneurship, Developing Infrastructure of ICT has more mean scale, and Government Support has less mean scale than other items.

## 2) SECOND QUESTION EXAMINATION:

Table-2 illustrates the One-Sample T-Test of five chosen items relate with Content Factors of Digital Entrepreneurship (CDE), that are Enveloping the Culture, Knowledge-Based Human Resources, Internet Security in E-Business, Appearance the Virtual Electronics Teams, Developing the Clusters of ITC and Clusters of E-Business.

**Table-2: Sample T-test of personals expectation about The CDE Factors (n=137)**

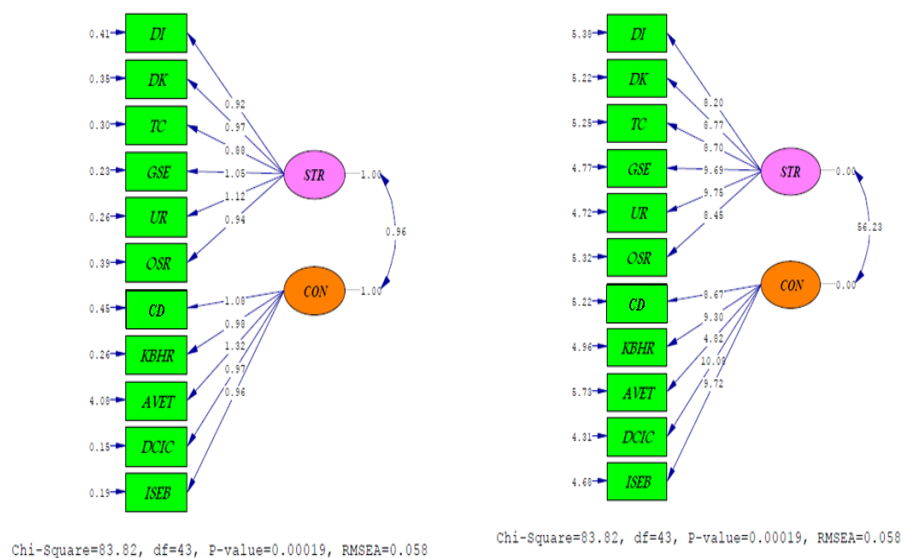
Content Factors of DE	Mean	Std. Deviation	Mean Difference	Sig. (2-tailed)	T-Value
Appearance the Virtual Electronics Teams	3.7609	1.04621	0.28687	0.003	2.180
Developing the Clusters of ITC and Clusters of E-Business	3.5797	1.05665	0.26429	0.004	2.149
Enveloping the Culture	3.3671	1.27462	0.41905	0.000	4.474
Internet Security in E-Business	3.9565	2.41449	0.37500	0.001	3.584
Knowledge-Based Human Resources	3.5217	1.10477	0.38332	0.000	4.248

The information of the table-2, can be concluded that all item, regarding to the 95 percent confidence level regulations, are acceptable according to responders' expectations, and among studied factors for Content Factors of Digital Entrepreneurship (CDE), Internet Security in E-Business has more mean scale, and Developing the Clusters of ITC and Clusters of E-Business has less mean scale than other items.

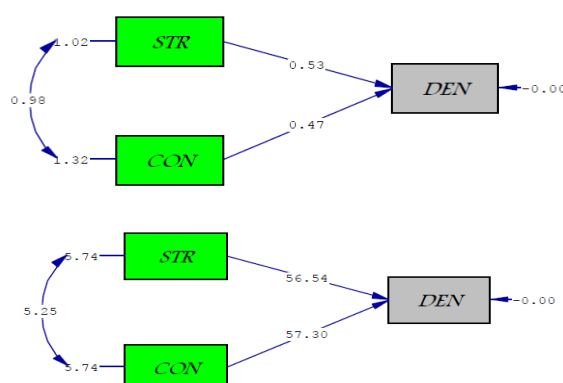
## 1) Third QUESTION EXAMINATION:

For examining this question, it has been used factors analysis in order to understanding that which items of Structural factors of digital entrepreneurship (Developing Infrastructure of ICT (**DI**), Digital Knowledge (**DK**), Telecommunication (**TC**), Government Support (**GSE**), University Role (**UR**), and On-line Services Role (**OSR**)) and Content factors of digital entrepreneurship (Cultural Development (**CD**), Knowledge-Based Human Resources (**KBHR**), Internet Security in E-Business (**ISEB**), Appearance the Virtual Electronics Teams (**AVET**), and

Developing the Clusters of ITC and Clusters of E-Business (**DCIC**) of digital entrepreneurship is more important than others and which of them have strong effect on creating and developing digital entrepreneurship. The Figure-1 is illustrated that **University Role in Digital Entrepreneurship development (UR)** of structural factors ( $R^2=1.12$ , T-value=9.75) and **Knowledge-Based Human Resources (KBHR)** of content factors ( $R^2=1.32$ , T-value=10.09) of digital entrepreneurship is more important than other items of theirs for increasing Digital entrepreneurship level. Likewise, the Figure-2 is showed the effect of structural factor is more than the content factor for enhancing the digital entrepreneurship.



**Figure-1: Structural Equation Modeling ( $R^2$ , T-Value) of Structural and Content Factors of Digital Entrepreneurship**



**Figure-2: Structural Equation Modeling ( $R^2$ , T-Value) of Structural and Content Factors with Digital Entrepreneurship.**

According to the figure-1 and 2 can be written the structural equations for digital entrepreneurship as follows:

$$\begin{cases} \text{Digital Entrepreneurship} = (0.53) * \text{STR} + (0.47) * \text{CON}; \\ \text{STR} = (0.92) * \text{DI} + (0.97) * \text{DK} + (0.88) * \text{TC} + (1.05) * \text{GSE} + (1.12) * \text{UR} + \\ (0.94) * \text{OSR}; \\ \text{CON} = (1.08) * \text{CD} + (0.98) * \text{KBHR} + (1.32) * \text{AVET} + (0.97) * \text{DCIC} + (0.96) * \\ \text{ISEB}; \end{cases}$$

**Table-3: Model summary of Goodness of fit statistics (n=137).**

Chi-square	DF	RMSEA	GFI	AGFI	NFI	NNFI	CFI	IFI	RMR
83.82	43	0.058	0.96	0.94	0.98	0.98	0.98	0.97	.014

In accordance with Byrne (1998), a ratio of  $\chi^2$  to DF is less than 3 and was generally considered an indicator of good model fit, and a ratio of less than 5 was considered acceptable. An adjusted goodness-of-fit index (AGFI) of more than 0.90, a root-mean-square error of approximation (RMSEA) of less than 0.08, and Root Mean Square Residual (RMR) of less than 0.045 and a normal fit index (NFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI) and Incremental Fit Index (IFI) of more than 0.90 were considered indicators of "good fit" Given their complementary features all four indexes were used to evaluate the path model.

Table-3 shows off that the exploratory model, including all hypothesized variables provided an adequate fit ( $\chi^2 = 83.82$ ;  $DF = 43$ ;  $p = 0.00019$ ; a ratio of  $\chi^2$  to  $DF$  of less than 3; goodness of fit index [GFI] = 0.96; adjusted goodness-of-fit index [AGFI] = 0.94; root-mean-square error of approximation [RMSEA] = 0.058 and [RMR] = 0.014) for the data and indicated that the relationship between structural and content factors and its dimensions and Digital Entrepreneurship, because of the strong direct effects of structural and content factors on Digital Entrepreneurship. Upon figures are respectively structural equation modeling (Estimate State and T-value) and the Model summary of Goodness of fit statistics. All data of upon are in conformity with Byrne's (1998) procedures, so that according to the Table-1 can be said that the factor analysis is goodness of fit and the test is true and acceptable.

## 2) Forth QUESTION EXAMINATION:

For testing and responding to the forth questions the researcher were used at first Friedman ranking test and then AHP Ranking test would be carried out. Friedman ranking tests for structural and content factors are showed in the Table-4 and Table-5. The results of these tables were illustrated that **Developing Infrastructure of ICT** Of structural factors (Mean Rank = 3.94) and **Internet Security in E-Business** Of content (Mean Rank = 3.44) are the strongest factors for improving digital entrepreneurship.

**Table-4: Non-Parametric Friedman Test; Mean Rank of Structural Factors of Digital Entrepreneurship (n=137)**

Structural Factors of DE	Mean	Std. Deviation	Mean Rank
Developing Infrastructure of ICT	3.8357	1.11967	3.95
Digital Knowledge	3.6715	1.13686	3.22
Telecommunication	3.4425	1.03583	3.28
Government Support	3.2812	1.15532	2.50
University Role	3.3763	1.23136	2.79
On-line Services Role	3.6522	1.12957	3.57
Chi-Square = 18.557, Sig.= 0.000, DF= 5			

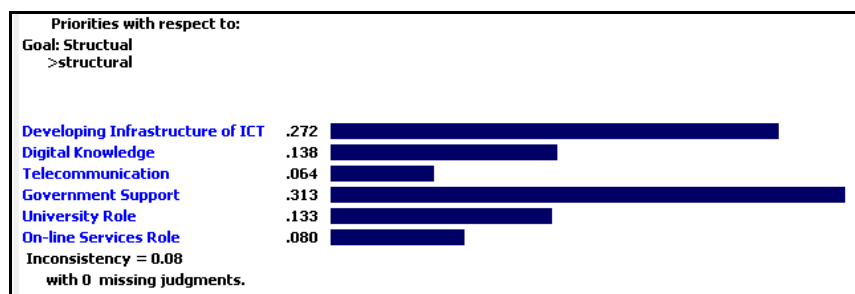
**Table-5: Non-Parametric Friedman Test; Mean Rank of Content Factors of Digital Entrepreneurship (n=137)**

Content Factors of DE	Mean	Std. Deviation	Mean Rank
Enveloping the Culture	3.3671	1.27462	2.54
Knowledge-Based Human Resources	3.5217	1.10477	2.78
Internet Security in E-Business	3.9565	2.41449	3.44
Appearance the Virtual Electronics Teams	3.7609	1.04621	3.31
Developing the Clusters of ITC and Clusters of E-Business	3.5797	1.05665	2.93
Chi-Square = 17.728, Sig.= 0.000, DF= 4			

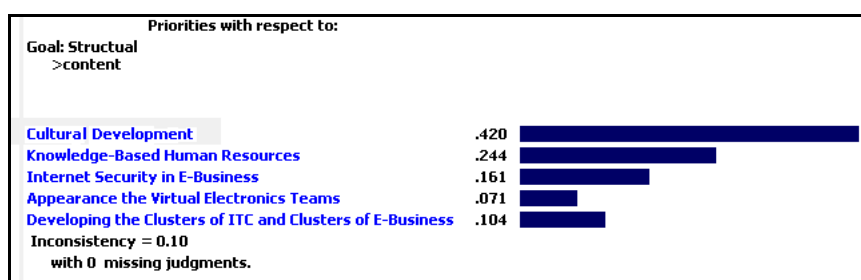
Likewise, the researcher for testing the last question and identifying the most important factors for creating and developing digital entrepreneurship in the worldwide has used **Analytic Hierarchy Process (AHP)**. For using AHP test need to do four steps:

1. Modeling: In this step determine the issues and aims of decision as hierarchically (e.g. decision criteria and decisions options).
2. Preference judgments: decision different options are compared and the according to importance of each option are given score among 1 to 9 (1= the least important and 9= the most important factor than others).
3. The relative weight calculations:
4. Integrating the relative weights.

For AHP Ranking (Figure-3 and Figure-4), according to responder’s approaches, the first step from a structural factors point of view for creating and developing digital entrepreneurship in organization is government support and other steps respectively; developing infrastructure of ITC, digital knowledge, university role, on-line services role, and telecommunication. And considering to responder’s approaches about content factors point of view, the first step for creating and developing digital entrepreneurship is cultural development and the other spted respectively; Knowledge-based human resource, internet security in E-business, developing the clusters of ITC and clusters of E-business, and appearance the virtual electronics teams. According to the Figure-3, and 4, the Inconsistency score for structural and content factors respectively (0.08 and 0.10) that they are less or equal 0.1, so can be said that the results of AHP Ranking Analysis is reliable and acceptable. Therefore, according to the Figure-3 and 4 can be said that Government Support factor of structural factors and Cultural Development factor of content factors are the most important factors than others for creating digital entrepreneurship in each organization.



**Figure-3: AHP Ranking Test; Ranking the Structural Factors for creating and developing Digital Entrepreneurship (n=137)**



**Figure-4: AHP Ranking Test; Ranking the Content Factors for creating and developing Digital Entrepreneurship (n=137)**

## CONCLUSION AND DISCUSSION

Findings of first and second questions' assessment depicts that all item, considering to the 95 percent confidence level regulations, are acceptable according to responders' expectations. It was concluded that "Developing Infrastructure of ICT" has more mean scale, and "Government Support" has less mean scale than other items among studied factors for Structural Factors of Digital Entrepreneurship. Likewise, "Internet Security in E-Business" has more mean scale, and "Developing the Clusters of ITC and Clusters of E-Business" has less mean scale than other items in studied factors for Content Factors of Digital Entrepreneurship (CDE). So it is necessary to pay more carefully heeds on Government Support and Developing the Clusters of ITC and Clusters of E-Business than the others.

Results of third question examination show off that selected factors as resources and factors (Developing Infrastructure of ICT, Digital Knowledge, Telecommunication, Government Support, University Role, and On-line Services Role, Cultural Development, Knowledge-Based Human Resources, Internet Security in E-Business, Appearance the Virtual Electronics Teams, and Developing the Clusters of ITC and Clusters of E-Business) for creating and increasing Digital Entrepreneurship caused to enhance the structural and content items of digital entrepreneurship. The among of these factors, university role ( $R^2_{UR}=1.12$ ) of structural factors and Appearance the Virtual Electronics Teams ( $R^2_{AVET}=1.32$ ) of content factors have more effect than other factors of structural and content factors for improving digital entrepreneurship in organization according to responder's view, and can



be said that the above-mentioned items (UR, and AVET) have more score than other item for improving digital entrepreneurship.

Likewise, the factor analysis and goodness of fit table related to first and second questions were illustrated that the used model in present paper for reviewing main factors of digital entrepreneurship is appropriation and acceptable because of according to Byrne (1998), a ratio of  $X^2$  to DF is less than 3, and was generally considered an indicator of good model fit, and a ratio of less than 5 was considered acceptable. An adjusted goodness-of-fit index (AGFI) of more than 0.90, a root-mean-square error of approximation (RMSEA) of less than 0.08, and Root Mean Square Residual (RMR) of less than 0.045 and a normal fit index (NFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI) and Incremental Fit Index (IFI) of more than 0.90 were considered indicators of "good fit" Given their complementary features all four indexes were used to evaluate the path model.

Also, the results of Friedman Mean Ranking Test were showed that because of a ratio  $X^2$  to DF is more than 3 and significant score is less than 0.05 and event 0.01 that these items were explained that Friedman was true and acceptable in 95 and event 99 percent confidence level. It means, there is significant difference between means of structural factors and also content factors, and in this ranking test, **Developing Infrastructure of ICT** (Mean Rank = 3.95) has more score than others mean score of structural factors and **Internet Security in E-Business** (Mean Rank = 3.44) has more score than others mean scores of content factors related to digital entrepreneurship.

Likewise, the results of AHP Ranking Analysis related to first and second questions were illustrated that according to the priority factors, **Government Support** (0.395) and **Developing Infrastructure of ICT** (0.272) factors of structural factor and cultural development (0.420) and Knowledge-Based Human Resources (0.244) factors of content factors related to digital entrepreneurship. Because of Inconsistency score are less or equal 0.1, so that the findings from this analysis are reliable and acceptable.

According to the above context and results can be proposed that increases in digital entrepreneurship require to use some strategies such as paying attention to the research and development unit, Create a new Department in the organizational level for Produce and deliver new products and services, education people who are interested in

entrepreneurship, forming the virtual teams and workgroups for pursuing the new ideas and, etc., also can be by increasing the horizontal and vertical relations between units of organization, and preparing backgrounds for improving knowledge among people of organization and management, improving and increasing the close communication between managers and staffs. Also by creating and developing infrastructure of ICT, creating knowledge-based human resources, government support, developing digital entrepreneurship culture, increasing the university role and enhancing Internet Security in E-Business can take long step toward creating and improving digital entrepreneurship in organizations and companies.

**REFERENCE**

- 1- Abernathy W.J., Utterback J.M. (1978). Patterns of Industrial Innovation. *Technology Review*, 80(7): 40-47.
- 2- Bouwman H., Hulsink W. (2002). A dynamic model of Cyber-entrepreneurship and cluster formation: applications in the United States and in the Low Countries. *Telematics and Informatics*, 19: 291–313.
- 3- Brynjolfsson E., Kahin B. (2002). *Understanding the Digital Economy*. MIT Press, Cambridge.
- 4- Cramton C.D. (2002). Finding Common Ground in Dispersed Collaboration. *Organizational Dynamics*, 30(4): 356-367.
- 5- Cunningham B.J., Lischeron J. (1991). Defining Entrepreneurship. *Journal of small business management*, 29(1): 45-61.
- 6- Deshpands R., Webster F.E. (1989). Organizational Culture and Marketing: Defining the Research Agenda. *Journal of Marketing*, 53(1): 3-15.
- 7- Duart D.L., Snyder N.T. (1999). *Mastering Virtual Teams*. San Francisco, CA: Jossey-Bass.
- 8- Evans D., Volery T. (2001), Online Business Development Services For Entrepreneurs: an Exploratory Study. *Entrepreneurship & Regional Development*, 13(4): 333 – 350.
- 9- Howard R., Blaise C. (1993). Digital Entrepreneurship: Doing Business on the Information Superhighway. *International Journal of Information Management*, Killington, 13(6): 461-463.
- 10- Ireland D.R., Reutzell C.R., Webb J.W. (2005). Entrepreneurship Research in AMJ: What has been published and what might the future hold?. *Academy of Management Journal*, 48(4): 556-564.
- 11- Johansson B., Karlsson C. Stough R. (2006). Entrepreneurship, Clusters and Policy in the Emerging Digital Economy. *The Emerging Digital Economy*: 1-19.
- 12- Kayworth T.R., Leidner D.E. (2000). The Global Virtual Manager: A Prescription for Success. *European Management Journal*, 18(2): 183-194.
- 13- Kohli A.K., Jaworski B.J. (1990). Market Orientation: the Construct, Research Proposition and Managerial Implications. *Journal of Marketing*, 54(2): 1-18.
- 14- Kuratko D.F., Hodgetts R.M. (2004). *Entrepreneurship: Theory, Process and Practices*. 6<sup>th</sup> Edition, NY: Thomson/Southwest.

- 15- Matlay H. (2004). E-entrepreneurship and Small E-business Development: Towards a Comparative Research Agenda. *Journal of Small Business and Enterprise Development*, 11(3): 408-414.
- 16- Narver J.C., Slater S.F. (1990). The Effect of a Market Orientation on Business Profitability. *Journal of Marketing*, 54(5): 20-35.
- 17- Negroponte N. (1995). *Being Digital* Knopf. New York: 243.
- 18- Porter M.E. (2001). *Strategy and the Internet*. *Harvard Business Review*: 62-78.
- 19- Schumpeter J.A. (1934). *The Theory of Economic Development: An Inquiry into Profit, Capital, Credit, Interest, and the Business Cycle*.
- 20- Shane S., Venkatraman S. (2000). The Promise of Entrepreneurship as a field of research. *Academy of Management Review*, 25(1): 217-226.
- 21- Slater S.F., Narver J.C. (1995). Market Orientation and the Learning Organization. *Journal of Marketing*, 59(3): 63-74.
- 22- Steinberg A. (2004). *Entrepreneurship and Success in E-business: on Changing Meanings of Expertise and Community in E-entrepreneurship*. Department of Social Psychology, The London School of Economics and Political Science: 1-7.
- 23- Stevenson H.H., Roberts M.J., Groesbeck H.I. (1985). *New Business Ventures and the Entrepreneur*, Homewood: Irwin.
- 24- Tapscott D. (1996). *The Digital Economy: Promise and Peril in the Age of Network Intelligence* McGraw-Hill, New York.
- 25- Thornton P.H. (1999). The Sociology of Entrepreneurship. *Annual Review of Sociology*, (25): 19-46.
- 26- Timmons J.A., Spinelli S. (2004). *New venture creation: entrepreneurship for 21<sup>st</sup> century*. 6<sup>th</sup> edition, New York: Irwin/McGraw Hill.
- 27- Venkatraman S. (1997). The Distinctive Domain of Entrepreneurship Research: An Editor's Perspective. In: *Advances in entrepreneurship, firm emergence, and growth*, J. Katz and R. Brockhaus (eds.), JAI Press, Greenwich, CT: 119-138.
- 28- World Bank (2000). *The Networking Revolution: Opportunities and Challenges for Developing Countries*. Info Dev Working Paper, Global Information and Communication Technological Department, Washington.