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An Investigation of the Manager's Innovation Effects on There Entrepreneurial Skills

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ABSTRACT

Entrepreneurship is an issue has spawned a considerable attention since the end of twentieth century. Nowadays, the innovative persons have played an important role in entrepreneurship in miscellaneous issues such as industry, education, services etc. the aim of present research is aimed to consider the relation between the innovation of managers and their entrepreneurial skills through the structural equations. 50 persons of managers of private companies were participated in this work. They answered the questionnaire related to entrepreneurial skills and innovation capabilities. The SMARTPLS software was used to analyze the data through structural equation. The results showed that the innovation in production, process, and official affairs affects the entrepreneurial skills of managers. Generally, the present work strictly confirms the effect of innovation of managers on entrepreneurial skills in private companies.

KEYWORDS: innovation in production, processional innovation, innovation in official affairs, entrepreneurial skills, managers

INTRODUCTION

Entrepreneurship is an issue has been paid much attention in educational institutes of all over the world. Nowadays, the innovative persons have played an important role in entrepreneurship in miscellaneous issues such as industry, education, services etc. [1].The entrepreneurial skills are vital for organizations of every size and type. John Thompson believes that the entrepreneurial skills is a critical necessity for all organizations of all types (governmental, private, etc.) and all sizes (great, medium, and small). The economic development wheels work through the entrepreneurial development. During 20 years (1960-80), 500 entrepreneurial institutes have started working in India and some great companies of the world have tended to entrepreneurs to solve their problems which confirm the importance of entrepreneurship skills. The advantages and drawbacks of the organization and their improvement are often known through the study of effective parameters on entrepreneurial skills [2]. The mechanism of making persons act as entrepreneur and promoting their entrepreneurial skills are the main question in entrepreneurship related studies. In present study, the effects of innovation capabilities on entrepreneurial skills are investigated.

LITERATURE REVIEW

Nowadays, innovation is increasingly considered as a main factors of long term success of the companies in competitive market because the companies having the innovation capacity are able to respond to environmental challenges compared to non-innovative ones [3]. The continuing and programmed innovation is a process which increase the power and competitive advantage of the company through decreasing of the costs and decreasing of products prices consequently, higher quality and effectiveness of goods and services which results in income increase and organization reputation [4]. The organizational innovation is defined as the development and having new ideas or behaviors in trade which is new for entire of organization. Applying new technologies or new official activities are based on new products or processes [5].

The postindustrial organizations are the knowledge- based ones which their survival depends upon the innovation [6]. Nowadays, the innovation helps the organizations to overcome the turbulence and uncertainties of environment. Furthermore, it is one of most critical motives in long term success in trading system especially in dynamic and competitive markets [3]. To survive in variable and uncertain mediums of trading of nowadays, the organizations should be able to adapt themselves to increasing intricacy and ascending changes. In such spaces, the organizations having a high capacity of innovation would be able to respond the medium challenges more rapidly and being more profited from new productions and market opportunities compared to non-innovative organizations [3].

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All organizations need new thoughts and ideas to survive. New ideas and thoughts motivates the organization and releases the system from recession. The innovation should be continued to survive and develop and even to keep the present condition in order to prevent the recession [7]. In variable unstable condition, continuing the past way based on experiences of the past will not be sufficient and the existence of organization necessitates the new ideas and behaviors and innovative [8]. There should be a great tendency to innovation to survive in this unstable world and new responses should be offered to affect and be affected from these changes [7].

Innovation and generating new insights by managers and organization staff are of a great deal of importance in organization. Nowadays, the organization which are able to compete, through generating new insights and innovation by innovative managers and staff, can survive in a competition based world. Draker believes that the innovation is an important tool for entrepreneurship and considers it as a systematic seek for changes as opportunities for markets, products, and new ideas [9].Thus, the present work aims the innovation capabilities of managers on entrepreneurial skills.

Entrepreneurship

The Entrepreneurship term was used by economist Josef Schopiter so called the father of entrepreneurship. He believed that the growth and economy development can be substantiated if there will be some people who are able to risk and be involved in entrepreneurial works to pursue and substitute new solutions instead of old and inefficient methods (Saiidi Kia, 2007:2). John Stuart Mill have used the entrepreneurship term and defined an entrepreneurial task including conduction, supervision, control, and risk ability.

Francis walker has emphasized on the distinction between investor and entrepreneur and called the entrepreneurs as the engineers of industrial development as the main production agents(Ahmadpour Dariani). Peter Draker believes that the entrepreneur is who able to start a new small economic activity with personal investment.

Entrepreneur and entrepreneurship has spawned the interest of economists and all economy schools have described the entrepreneurship in their theories since the 16th century. The view point of classic and modern economists about entrepreneurship and entrepreneurs has considerably changed. Some of most important definitions are as follows:

Robert Ronstandt believes that the entrepreneurship is creating more wealth. This wealth is created by persons who accept the risk of investment, time, and job commitment to evaluate the value of a good or services. The good or services may not be new or unique while the entrepreneur should create a value in his good through allocation of necessary sources (Ahmadpour, 2006, 13).

Kirznerdefines the problem of economy of society as ignoring the opportunities and knows somebody as entrepreneur who be aware of profitable undiscovered opportunities (Hasan Moradi, 2007: 6).

D.mc Keran & E.flannigan describe the entrepreneurs as innovative persons havin a concentrated thinking pursuing the success through shortcuts rarely based on books and create innovative companies which are profitable having a of high speed growth.

In addition, the economy development is deeply dependent upon the entrepreneurship development. The economic development in developed countries indicates that it is affected by entrepreneurship. In addition, entrepreneurs are a key factor in economic development of the countries while the undeveloped countries ignore its importance in economic development. There are many evidences confirming that that the entrepreneurship is the main factor of development in industrially developed countries such as United States, japan, Germany. Entrepreneurship is nowadays defined as a job and should be developed like other jobs and educated through educational and university plans. Today, the researchers unanimously believes that the entrepreneurship effect on social and economic development as follows:

Entrepreneurship collects the goalless and general saves and improves the investment.

Entrepreneurship results in occupation in a wide scale and hence reduces the unemployment which is the base of many social- economic problems.

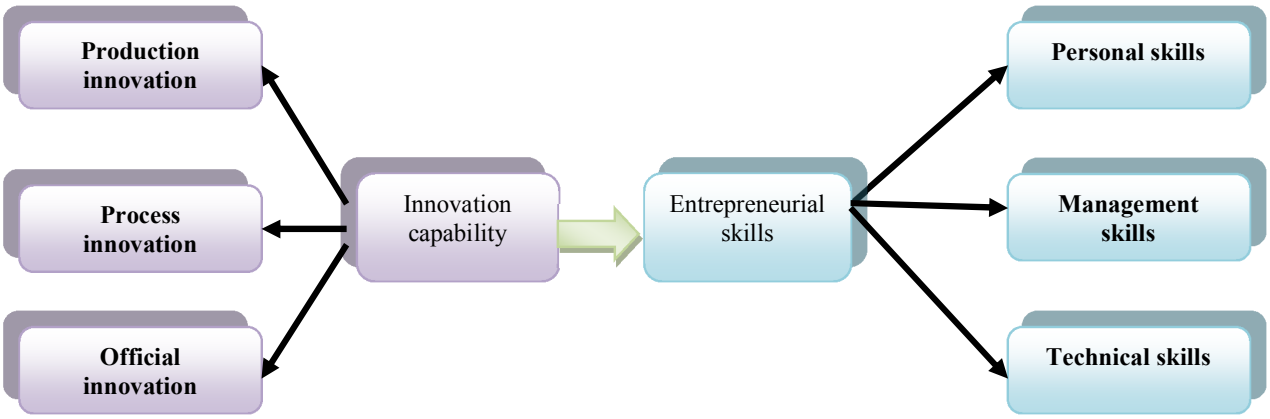
Entrepreneurship results in the regional balance and redistributes the investment and even the political power gradually. It also increases the social pay outs through the governments. The incomes from taxes, customs salaries, business license of entrepreneurship, can be spent for roads, bridges, services, and medical facilities (Ahmadpurddariani, 2009:27). More than 500 entrepreneurial institutes have started working during recent years and some great companies have pursued the solution of their problems via entrepreneurs. Having researched about the effective parameters on entrepreneurial skills, the drawbacks and disadvantages will be clarified and one can find the straightforward policies to modify and troubleshoot the defects (Mohammadi, Tabari, 2009). According to mentioned above, the present work considers the effect of innovative skills of entrepreneurial skills of managers to suggest the useful tends in this field.

Conceptual model:

The conceptual model of research of the present work is shown in figure 1. As can be seen, the innovation capability and entrepreneurial skills have been considered as independent and dependent variables, respectively.

Figure 1: conceptual model

Method:



The present work is of correlation research type using Structural Equation Modeling. In this study, the Structural Equation Modeling through Partial Least Squares method has been used to measurement model test and research hypothesis. Chin, Markolin, and newsted (1996) have used this approach in fields, having a wide range of data while no sufficient knowledge and measurement techniques is supplied and the sample population is of low volume, of high flexibility and less limitations compared to Lisrel method. Since the population is low in present research, and a high volume of sample is needed when Lisrel is used, the Partial Least Squares method is applied using SMART PLS software.

SLP method can be analyzed as a powerful method regarding its independence upon the measurement skills, sample volume, and residual distribution (Chin, Marcolin, Newsted, 1996). This method can be sued for prediction purposes in addition to theory test (Chin, 1988). In other words, the SLP aim is to obtain the determined values for latent variables to predict and minimize the variance of all dependent variables. Also, SLP creates the latent variables using the weight summation ofindexes (Chin, Marcolin, Newsted, 1996). Generally, the covariance based approach for theory test and partial least square approach is appropriate to study the relation between data and form the theory (Christmas, 2005).

Participants:

The participants in present work are 50 persons of managers of private companies in Yazd province.

Measurement tools:

Innovation capabilities of managers: the questionnaire suggested by Jimnez-Jimnez et al (2008), Pniadz (2006), and Prajgoand Sohel (2006) was used to measure the Innovation capabilities including 17 questions. The questionnaire is divided into three parts in which 7 first questions evaluates the production innovation while 6 and 4 later questions deal with process and official innovation, respectively. The questions are designed based on a 5 order Likert spectrum from completely disagree to completely agree [3].

Entrepreneurial skills of managers: The questionnaires of 35 questions designed by recent researchers including Ostrbek et al (2010), Gari (2013), Nedobisi and eftekhar (2012) was used to measure the Entrepreneurial skills of managers. The questionnaire is divided into three parts in which 10 first questions evaluates the management skill of entrepreneurship while 11 and 14 later questions deal with technical and personal skills of entrepreneurship, respectively. These questions are designed based on a 5 order Likert spectrum from completely disagree to completely agree.

Findings:

The SLP model is tested and interpreted in two steps like other covariance based methods including Measurement and Structural model. The Measurement model or the confirmatory factor analysis, to respond the questions related to measurement validity, determines how the hidden variables are measured through a higher number of observable variables. The structural model shows the relation between structures (hidden variables) and their power of explanation.

Measurement model test:

The Measurement model test includes the reliability (Internal Consistency) and validity (Discriminant Validity) of structures and research tools. The reliability of test is dependent upon its precision and stability and

has two meaning as follows: one meaning of reliability is the stability and reproducibility of tests during the time indicating that if attest is applied for a person repeatedly, the identical results will be obtained. Another meaning of reliability is related with the correlation of questions of the test [11]. 3 indexes have been suggested to consider the reliability by Fornell and Larcker (1981) consisting 1- reliability of each items, 2- Composite Reliability of structures, 3- Average Variance Extracted (AVA) and 4- Cronbach's alpha (α). Considering the reliability of structures, the loading factor of 0.6 or more in confirmative factor analysis indicates a well-defined structure. Also, the load of items should be significant at least at the 0.01 level [12]. The Boot Starp test (300 sub items) was used to calculate the T statistic to determine the significance of load factors.

The composite reliability of each structure was considered using Dillon – Goldstein coefficient (ρ_c). Since the SLP uses the factor scores in contrast with Ordinary Least Squares multivariate regression, considering the loading factor of each item is necessary in calculation of the reliability index while the α- Cronbach gives the same weight to items showing a less reliability and hence ρ_c was used [13-16].The acceptable values of ρ_c should be 0.7 or more [14]. The third index of reliability consideration is the extracted variance average [14].Fernel and larker suggest 0.5 AVE and more in such a way that the structure explain 50% or more of variance of its indicators (china, 1988). In table (1), ρ_c, AVEand α coefficient of each structure are shown indicating that the structures have sufficient and appropriate reliability.

Table (1): The reliability index of innovation capabilities and entrepreneurial skills

item	Factor loading	item	Factor loading
Production innovation	0/90	Management skills	0/79
Process innovation	0/89	Technical skills	0/88
Official innovation	0/77	Personal skills	0/86
cp	0/89	cp	0/88
average	0/73	average	0/71
Cronbach's alpha (α)	0/82	α	0/80

Chin (1998) suggests two indexes to consider the validity or Discriminant validity of structures as follows: 1- the items of a structure should have most loading factors on their structure meaning that they have a small temporary loading on other structures. Gefen and strab (2005) suggest that the loading factor of each item on the structure related to its item should be 10% more than the load factor of the same item on other structures[17]. Another index is that the root of AVE of a structure should be more than the correlation of that structure with other structures. The mentioned condition indicates that the correlation of that structure with its indicators is more than its correlation with other structures. The temporary loading of items on research structures are shown in table (2).

Table (3): crossed loading factors to consider the reliability of tools

dimensions	Innovation capabilities	Entrepreneurial skills
Production innovation	0.9	0.46
Process innovation	0.9	0.44
Official innovation	0.77	0.34
Management skills	0.32	0.79
Technical skills	0.45	0.88
Personal skills	0.45	0.86

According to table (3), all items have the most loading factor on their structure and the minimum interval between the loading factors of their structure is more than 0.1 which shows that the research structures have the appropriate discriminant reliability. The results of second index are summarized in table (4).

Table (4): correlation matrix, root EVA, and descriptive indexes of the research variables

variable	1	2	average	Standard deviation
Innovation capability	0.85		46.96	8.27
Entrepreneurial skills	0.49	0.84	126.12	13.21
Note: the diagonal numbers of correlation matrix are the root EVA				

According to the table (4), the root EVA of all research variables, i.e. innovation capabilities and entrepreneurial skills is more than their correlation with other variables. Thus, the second index of discriminant reliability of the research variable is satisfied. Additionally, the results of table (4) show that the positive and significant correlation is observed between the innovation capabilities and entrepreneurial skills (0.49) in level 0.01.

Structural model test:

The structural equations using partial least square were used to predict the entrepreneurial skills. In PLS method, the research structural model test and research hypothesis is possible through consideration of loading factors and R2 values [11]. Also, the Boot strap (300 sub items) was used to calculate the T statistic to determine the significance of loading factors. The loading factors are used to determine the contribution of each predictive variable in explanation of variance of index variable and R^2 indicates the variance explained of index variable by the predictive variables [16-17]. The fitting of its structural model is reported in table (5).

In figure 2, the tested model of innovation capability and entrepreneurial skills is shown. As can be seen, the loading factor of innovation capability on entrepreneurial skills is significant. Also, the loading factor and T statistic is reported in table (5). The encircled number is the variance explained of entrepreneurial skills.

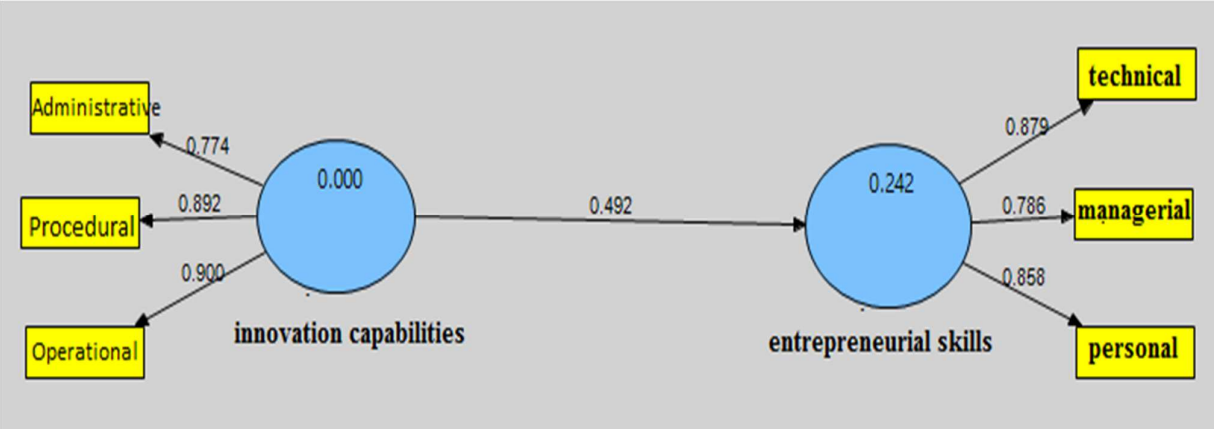


Figure (2): tested model of innovation capability effect on entrepreneurial skills

Table (5): estimation of loading factor

	Loading factor	T Value
Effect of innovation capability on entrepreneurial skills	0.49**	9.67

**p<0.01

According to the table (5), the innovation capability has significant and positive effect on entrepreneurial skills.

Table (6) shows the variance explained, communality validity, and redundancy of research variables. As can be seen, 24% of variance of entrepreneurial skills has been explained. In addition, all communality validities and redundancies are positive indicating the appropriate quality of the model presented in this work.

Table (6): variance explained, communality validity, and redundancy

Research variables	Variance explained	Q^2 CV-Redundancy	CV- Communality
entrepreneurial skills	24%	0.15	0.41
innovation capability	-	0.46	0.46

Finally, the structural model fitting through partial least square was used to show the validity of research findings.

There are methods to consider the model's validity in PLS called cross-validation including the CV-Communality and CV-Redundancy [17,18]. The CV- Communality evaluates the quality of measurement model while the CV-Redundancy, so called Q^2Eston-Giser, measures the quality of structural model for each endogenous block considering the measurement model. Positive values of this index indicate the appropriate and acceptable quality of structural and measurement model [17]. As can be seen in table 6, positive value of CV- Communality and CV-Redundancy indicate an appropriate and acceptable quality of the measurement and structural model.

In addition to mentioned model, the index of general fitting model in PLS is GOF (Goodness of Fit) which can be used to consider the validity or quality of the PLS model. This index acts like the fitting indexes of LISREL model ranging from 0-1 in which the values near 1 indicate an appropriate quality of the model [18,19]. This index considers the total predictive ability of the model and if the model tested is successful to predict the endogenous

variables or not [11]. In present work, the absolute GOF was obtained 0.42 for the tested model indicating that the obtained value for this fitting index shows an appropriate fitting.

DISCUSSION AND CONCLUSION

The main purpose of this work is the consideration of innovation capability of managers on entrepreneurial skills. The research is of descriptive type and the correlation of research is of structural equation model type. The research population was 50 managers of private companies in Yazd province selected through census as the research sample.

The structural equation results showed that the coefficient of innovation capabilities on entrepreneurial skills is positive and significant. These findings are in agreement with Taheri et al (2010) and Zhao et al (2005) results [12, 19, 21-23].

It can be concluded that the innovation is of critical importance in description and explanation of entrepreneurial activities and Peter Draker believes that the innovation role in entrepreneurship in such a way that there is no entrepreneurship without innovation [20, 24,25]. The innovation process allows the entrepreneur to be placed in a higher rank compared to his/her rivals. As the knowledge of providing a service or a product is developed and is able to be hidden from others, the new trades can prevent the new imitators to the same field [21,26-28]. Hansemark believes that the innovation is a key factor in entrepreneurship because it results in new products with new qualities, designing new procedures to enter the new market, creating resources or organization and even new structures in trading [28].

The results showed that the present research confirms the innovation capability of managers on entrepreneurship skills of them. Thus, it is suggested that the chief managers of private companies in Yazd province consider the properties of their system emphasizing the innovation and improving them and promote their entrepreneurial skills through it.

The main limitations of the present work include the Unwillingness of participant to answer the questions, lack of satisfactory precision in answering, and also biases of participant's in some questions.

Recommendation for future researchers

1. As mentioned above, this research has been performed for manager's private companies of Yazd province. It is suggested that the presented model applied for other companies the results compared to those of this work.
2. Since the approach of this research is quantitative, it is suggested that a convolution of quantitative and quantitative approaches considered to study the effects of entrepreneurial skills in private companies.
3. Other effective parameters on entrepreneurial skills of managers can be added to this research and the theory test evaluated again.

Management applications:

1. It is suggested that the managers try to increase their entrepreneurial skills to present their new services to market, educate their staff for being innovative, allocate the financial sources to pursue new researches, being pioneer in new services.
2. The research results indicated that the innovation significantly affects the entrepreneurial skills. Thus, it is proposed that the managers try to promote their entrepreneurial skills through presenting new services, being pioneer in technology application compared to other companies, and pursuing new methods and servicing processes. Additionally, it is proposed that the managers present new management systems (including employment and evaluation) to enhance their entrepreneurial skills.

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