

ENTREPRENEURSHIP INDICATORS WITH AN EMPHASIS ON GLOBAL ENTREPRENEURSHIP MONITOR

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ABSTRACT

Concentration on increasing the entrepreneurial development programs need a comprehensive Pattern to measurement, the components of entrepreneurial roadmap Implementation. It can show the effect of these components on micro & macro economic structure. The main purpose of current study is investigating an entrepreneurial indicators (Iran & OECD member countries) based on Global Entrepreneurship Monitor. This paper survey the components like, "Established Business, Early- stage entrepreneurial Activity (TEA), Nascent Entrepreneurship, New Business Ownership (Entrepreneurial Activities Indicators), Fear of Failure, Entrepreneurial Intention, Perceived opportunities, Perceived Capabilities (Entrepreneurial Perceptions Indicators)" based on GEM information (2011), for finding meaningful relationship of indicators by Structural Equation Model. The result show meaningful relationship between entrepreneurial perceptions and entrepreneurial activities.

Key words: *GEM, Entrepreneurship, Entrepreneurial perceptions, entrepreneurial activities.*

1. INTRODUCTION

The positive effects of entrepreneurship on developing and growth of the countries is inevitable. Small and medium businesses are allocated more than half of GDP, employment, new businesses and significant innovations in many countries. Studies show the after failures of economic downturns, interests of potential entrepreneurs to create new businesses will be encouraged (Irwin Grayson Associates, 2010). Basic definitions of entrepreneurship in 1700 AD is express by Richard Cantillon how meaning the risky of entrepreneur, however from 17th century to early 20th century the entrepreneur will be distinguished from other economical players. So that the one who provides the investment is different from who is at risk. In 20th century, innovation became an important part of entrepreneurship and refers to something new, which leads to provide new values and create a new production and distribution system or a new structure for performances. Finally in 1980, the concept of entrepreneurship went beyond the scope of economist's attention and attracted the sociologists and psychologists thoughts, so that any scientists of different science presented definitions based on their specialty and research scopes. Timmons recognizes entrepreneurship "Value creation of something which has no value". Entrepreneurship is the process of providing or using of an opportunity and following that without paying attention to resources which are now under the control of a person. Approach definition of Hisrich & Dernovsek (2002) emphasizes on creating and managing, new business, small business, family businesses as well as entrepreneurship characteristics and social issues. Although there's no identical definition of entrepreneurship, the entrepreneurship has been approved as a new business in several evaluations like GEM which is done nationally and internationally (Levie & Auto, 2007). As GEM research program is done in different countries and cultures and internationally, a general definition of entrepreneurship has been approved in this consortium. According to GEM, entrepreneurship as any adult's attempt will be defined for business startup (less than 100 employed persons) or even self-employment (Bosma. etal, 2007). Entrepreneurship studies and its effects on economic activities are always being noticed by scientists, media and political circles. Now, accessing to entrepreneurship development needs continuous evaluations and measurements of their components, because as their measurability increases, their management and control will be easier. Without entrepreneurship measurement, its extension cannot be monitoring effectively. Global entrepreneurship monitor which is different from business model of universal bank will evaluate business environment (by interviewing with expert entrepreneurs and entrepreneurship expertise) rather than evaluating the conceptions, attitudes, and entrepreneurial activities by collecting field data and specifies the relative position of member countries in different aspects of entrepreneurship. Main purpose of current research is to survey relation of the used indicators in GEM by using the structural equations model. In this paper, we first review the concepts of GEM, entrepreneurship and introduce the accomplished researches in this area & then, we study the relations & effects based on GEM in Iran and OECD countries by presenting the entrepreneurial indicators data in Iran.

2. GLOBAL ENTREPRENEURSHIP MONITOR (GEM)

The conceptual model of global entrepreneurship monitor (GEM) by Bleach Reynolds, based on idea of Michel Hey in 1997 has been created as a standard global business indicator so that it can be similar to the global competitive indicator of the World Economic Forum (W.E.F). Reynolds's purpose was present a complementary model of global competitive indicators which has been formed most of general presented reports from the world economic forum at that time. However, this thought has been exists that only the great established companies were important in order to reflex the main efforts of David Birch in understanding and perception of business dynamic issues. From 1999 to present, global entrepreneurship monitor as an academic research consortium, by Babson University and London Business College with more than 70 countries members have been observed the entrepreneurial activities and environments among the member countries. The mission of GEM is to evaluate the annual national entrepreneurial activities. Generally, the purpose of GEM research can be summarized as below: Measuring and evaluating the entrepreneurial activities among the member countries, discovering the systematic relation between entrepreneurship and economic growth, identifying the effective factors in entrepreneurship development. The main purpose of GEM program is to survey the superficial differences, entrepreneurial activity types and their relations with economic growth. Against any other national economic characteristics such as GDP or inflation rate, national entrepreneurship can be as a sheer outcome of personal decision in following the entrepreneurial initiatives. Entrepreneurship is a multidimensional event that for analysis of this Phenomenon different scientific field such as psychology, economics, sociology, and management has been used (Chandler and Lyon, 2001). Combined research methods are being used in entrepreneurship researches, especially in international and extensive ones. Combined research methods are the combination of quality and quantity methods to notice and solve the research problems (Low & Macmillan, 1988). In fact, GEM research program consists of three methods: Survey Methodology research (voting from 18 to 64 year old adults), Delphi (voting from expert entrepreneurs and entrepreneurship expertise) and secondary data such as gross domestic product (GDP) data. Global entrepreneurship monitor assigns lack of defect, research and data quality as its honor. GEM research committee is responsible for control and qualitative audit of data program, political, social and cultural fields of the society and forms two kinds of environmental conditions or frameworks. The first general conditions of a country are named national general conditions or frameworks. GEM model offers another supplementary process in which people understand the opportunities and consequently they will be encouraged for creating new business activities and this will effect on economic growth. By doing this, the model of entrepreneurship theorists has been followed as Austrian traditional school such as Schumpeter (1934), Queens (1968) and other economists who knows entrepreneurship role in economic development such as *Lynstan* (1968), Baumol (2002) and Acks and et el (2004). GEM offers that the second factor set that effects on new business activity is named entrepreneurial conditions or frameworks (Levie & Autio, 2008). In GEM model, entrepreneurial process consists of three sensitive section or level which is rooted in Paul Reynolds thoughts: Idea (concept), Business creation (birth) and Business stability. In fact, potential entrepreneurial who have the knowledge and skill of business management and startup are involved in the primarily activities of new business startup through their thoughts and they are named business owners or Nascent entrepreneurship. Figure 1 show Entrepreneurial process in.

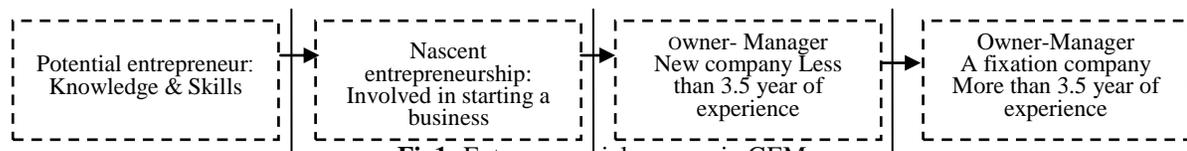


Fig1: Entrepreneurial process in GEM

These entrepreneurial are located in business startup level and they haven't paid any salary for their employees. In the case of successful passing of the nascent entrepreneurship level, the entrepreneurial will enter to the second company/ business creation level which are named new entrepreneurial (young business). Early stage entrepreneurial activities include nascent and new entrepreneurial activities. Finally, if business gets stable, early stage entrepreneurial will turn to the established entrepreneurship (with more than 3.5 years experience). Using the global entrepreneurship monitor approach needs a scientific and comprehensive model because of its world expansion, so that all the existing structures would be able to use it as well as possible.

This model refers to multidimensional entrepreneurship such as social, political and cultural fields and has addressed its significant variables into four important groups as can be seen in Fig.2. In fact, it can be understood from the model's concept that this model has been emphasized on effectiveness by using the necessary fields and structures and insisting on important requirements and will discuss about the essential dimensions of a national structure. Also, the model refers to entrepreneurship and innovation simultaneously, so that they can use the company's power or those entrepreneurs by entrepreneurship dimensions such as attitudes, activities and interests in order to improve the

national economic growth. It should be noticed that the introduced variables in entrepreneurship and innovation part will be presented by national experts of GEM and the mentioned variables will be extracted in entrepreneurship part (with three attitudes, activities and interests indicators) by adult’s survey. As mentioned before, this model involving with macro and micro structures and utilization of different capacities (such as active power of registered companies) will lead its entrepreneurial activities toward the national economic growth. Iran monitoring team in Tehran University is responsible for components studies in Islamic Republic of Iran.

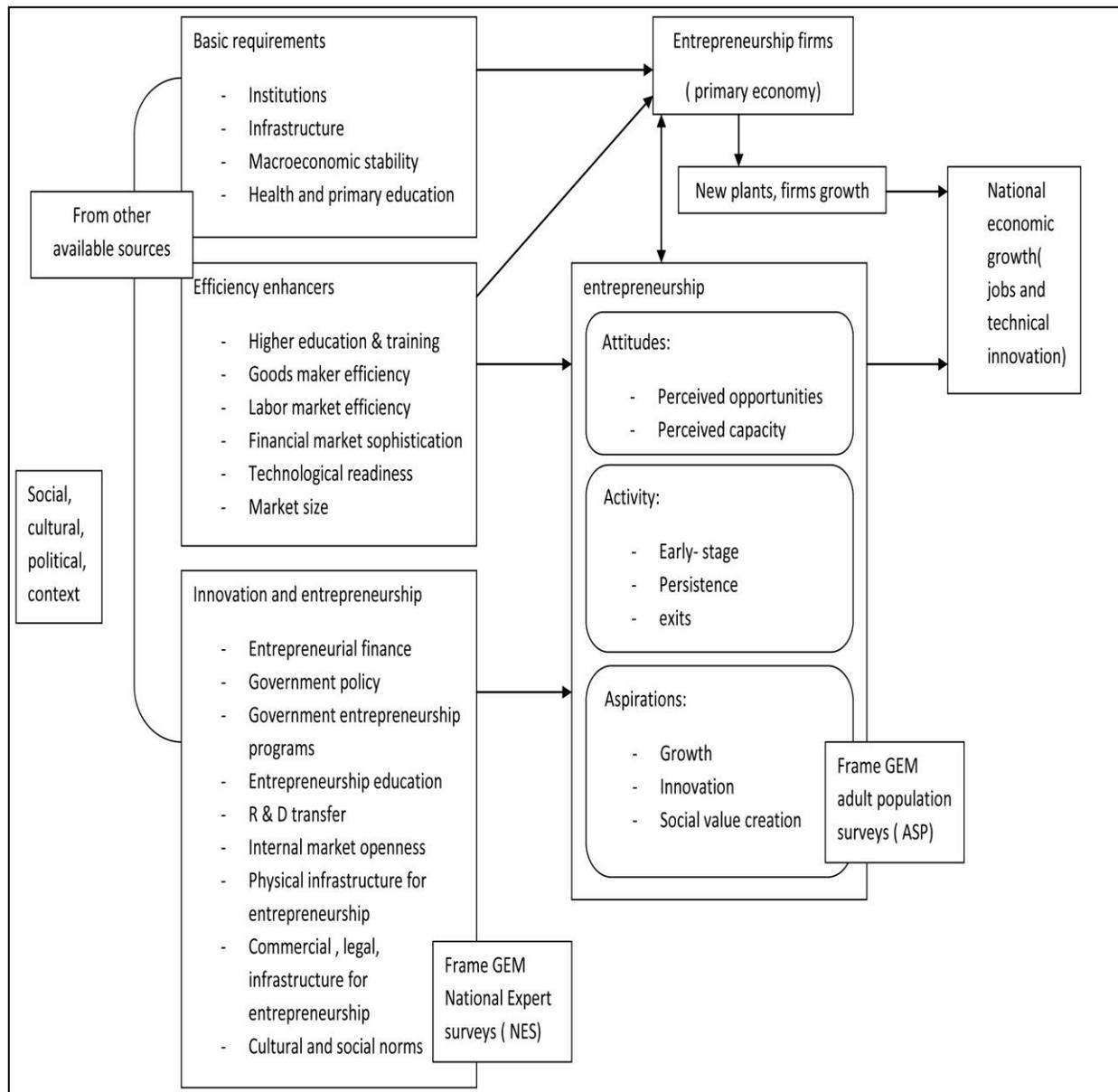


Fig2: GEM Model

Several researchers have surveyed and studied their investigations by model contents and global entrepreneurship monitor. The below table show the most updated investigations about the global entrepreneurship monitor.

Table1: Research by Using GEM Model

<i>Research name</i>	<i>Researcher</i>	<i>Year</i>
Application of the Self-Organizing Map (SOM) to analyze the nascent entrepreneurs'	Chuang	2011
Determinants and Dynamics of Nascent Entrepreneurship in Entrepreneurially Active and Passive Economies: A Macro-Level Analysis	Wahga	2011
Environmental conditions and entrepreneurial activity: A regional comparison in Spain.	Alvarez	2011
Size matters: entrepreneurial entry and government. Small Business Economics	Aidis	2010
The influence of entrepreneurial training on the propensity to become an investor in others' businesses	Coduras	2010
Gender and Development	Elam	2010
What you know or who you know? The role of intellectual and social capital in opportunity recognition	Ramos	2010
Female Entrepreneurship in Latin America: Individual and Economic Institution Characteristics of Opportunity and Necessity-Based Activity	Terjesen	2009
European Regions Mapping Entrepreneurial Activity and Entrepreneurial Attitudes in	Bosma	2009
Cultural norms & business start-ups: values on opportunity and necessity entrepreneurs the impact of national	Hechavarria	2009
Resource Mobilization and Performance in Family and Non-Family Businesses in the United Kingdom	Levie	2009
Regional Dimensions of Entrepreneurship	Sternberg	2009
Introduction: The Startup Process	Acs	2008
Perspective Institutions and Entrepreneurship Development in Russia: A Comparative	Aidis	2008
Formal and Informal Equity Funding in Chile	Amorós	2007
How is entrepreneurship good for economic growth?	Acs	2007
The Changing Face of Entrepreneurship in Germany.	Bergmann	2007
European Regions Outlook on Europe: Patterns of Promising Entrepreneurial Activity in	Bosma	2007

3. ENTREPRENEURSHIP

Literatures review show that entrepreneurship scopes include limited typology (Wortman, 1987) and early stage conceptual samples (Shane & Venkataraman, 2001), but they are full of descriptive study and particularly correlation and regression analysis which not leads to strong typology and powerful theories in entrepreneurship scopes (Cooper, 2003. Ireland et al, 2005. Low, 2001. Low & Macmillan, 1988. Smith et al, 1989. Coviello and Jones, 2004. Sarasvathy, 2004). Entrepreneurship is a multidimensional event and includes multiple analysis levels that are formed interdisciplinary. To produce and combine different insights of different approaches, we need special typology according to different approaches (Low and Macmillan, 1988). Conceptually considering the appropriate methods for scientific scope of entrepreneurship, Conception and explanation as two theories performances can be helpful, Explanation includes identifying and presenting the components, factors or involved mechanism in creating the regular event sequences or positions. Exquisite explanation is used as one of the performance theories to identify the state behavior of natural science events or a part of social science events that are being studied by natural scientific methods.

Conception includes finding the reasons and meanings of a special social action or occurrence a special social event. Entrepreneurship scientific scope is naturally in social science areas. Habermas believes that both kinds of exquisite explanation and social conception can be used in social sciences. Pundits tried to analyze and define the subject and entrepreneurship Theoretical – conceptual scope clearly or implicitly according to scientific and experimental attitudes such as: Sociological (Phillips, and Kirchoff, 1989), Economics (Casson, 2003; Schumpeter, 1934; Kirzner, 1973) and Psychological (McClelland, 1967). Studies of some issued researches according to multiple analysis levels (Ireland et al., 2005) about the entrepreneurship theoretical scope & subject (Fig.3) show that the subject definition & entrepreneurship theoretical scope are being done based on the below cases.

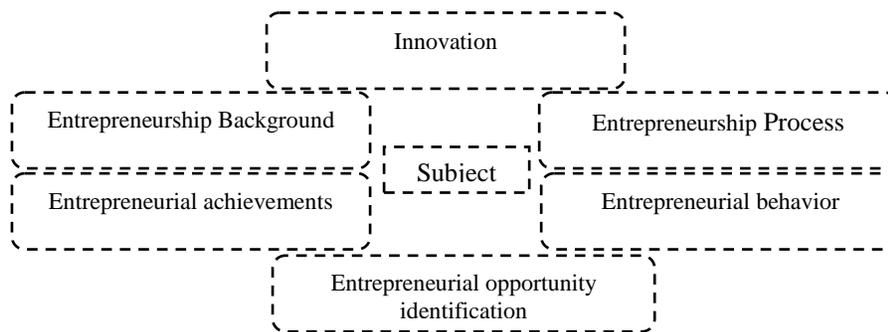


Fig3: Subject & scope of entrepreneurship

4. RESEARCH DATA ANALYSIS

According to sociologists & particularly according to theory of population ecology of organizations (Scott, 2006) & (List, 2007), the entrepreneurship is to create organizational populations or new organizational formations and entrepreneurship dynamics will lead to create new organizational populations. If the global entrepreneurship monitor could be considered as a dynamic model and a stable model which evaluates the entrepreneurship, we must take into consideration that this model will analyze its evaluations based on the indicators such as entrepreneurial intention, fear of failure and etc., so that different social and scientific features would be recognized. The following table shows outcome statistics of Iran activities between 2008 and 2010.

Table2: Describe Iran indicators of entrepreneurial

<i>Indicator</i>	<i>Abb</i>	<i>2010</i>	<i>2009</i>	<i>2008</i>
Established Business ownership	EBO	7.3	6.5	6.8
Early Stage Entrepreneurial Activity	ESEA	12.3	12	9.2
New Business Ownership Rate	NBOR	7.8	4.1	3.4
Nascent entrepreneurship	NO	4.8	8.2	5.9
Fear of Failure Rate	FFR	30	32	22
Entrepreneurial Intention	EI	33	29	37
Perceived opportunities	PO	42	31	35
Perceived capabilities	PC	66	58	61

Structural equations Model can be considered as a statistic method to accurately investigate the relations between the variables and its purpose is to study the statistic tests in a theoretical model. In the present investigation, we will evaluate and analyze the relations and effects between entrepreneurial perceptions, entrepreneurial activities by using the outcome data of global GEM reports and Iran and OECD countries studies. The main hypothesis of this research indicates a meaningful relation between entrepreneurial perceptions and entrepreneurial activities. Therefore, we must verify the announced relation by scientific methods and relations so that we can discuss about the absence and existence of the relations. It must be noted that we have used the introduced indicators in the below table to evaluate the suitability of the model’s variables and the final model.

Table3: Statistic of research model

<i>Fit Index</i>	<i>RMSEA</i>	<i>NFI</i>	<i>CFI</i>	<i>GFI</i>
Acceptance criteria	Close to zero.	Close to one	Close to one	Close to one
Model Statistic	0.46	0.68	0.76	0.48
Result	✓	✓	✓	-

Most of the pundits propose to use several fitting indicators for model evaluation to compare the model with economic issues in order to increase the accuracy in investigations (Hair, Anderson, Tatham, & Black, 1992). Some fitting indicators, zero model (independent model where the covariance of the models are supposed to be zero) according to Chi-Square, free degree of zero model, the given Chi-Square, free degree of the given model, the numbers of observed variables in the model, the numbers of free parameters in model and sample volume are being calculated. The calculation formulas of Root Mean Square error of Approximation(RMSEA), Comparative Fit Index(CFI), Adjusted goodness of fit index(GFI) and normed fit index(NFI) are as follow by using these values:

- (1) Comparative Fit Index = $1 - (\chi^2_m / \chi^2_n)$
- (2) Normed fit index = $(\chi^2_n - \chi^2_m) / \chi^2_n$
- (3) Adjusted goodness of fit index = $1 - [(\chi^2_n - df_m) / (\chi^2_n / df_n) - 1]$
- (4) Root Mean Square error of Approximation = $\sqrt{[\chi^2_m - df_m] / (N - 1) df_m}$

Whenever a model is characterized precisely and includes similar characteristics and its test and evaluation is possible, then there are lots of indicators to evaluate its fitness, the most important ones are listed above. If some indicators are weak and not acceptable, then there's no reason to reject the model but shows the model's relative weakness which is induced by sampling, sample population or other factors. The presented indicators and its comparison with desirable values for the fitting model show an almost suitable fitness of the investigated model. It's a remarkable point that although the fitness of the structural model does not confirm the model, it never proves that the model is the only reputable model. According to confirmation of the designed model in the present research, we can study the relations and effects.

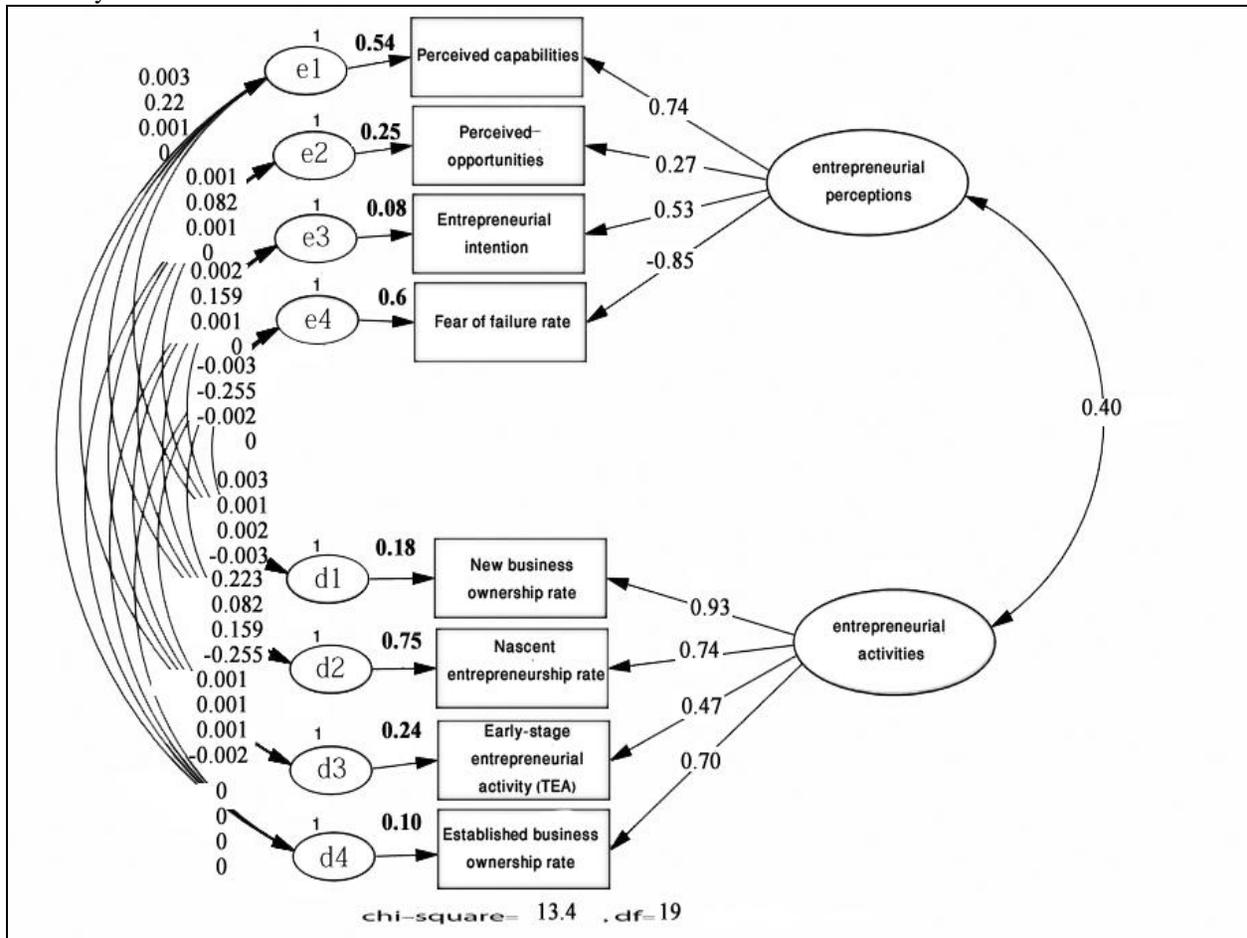


Fig5: Structural Equation Model

5. DISCUSSION

Entrepreneurship provides two general significant outcomes for interested people: (a) Applicable and (b) Theoretical structures. Outstanding economists and the ones who are interested in this field would define entrepreneurship according to thematic approaches and results. Value creation (Zahra & Dess, 2001), wealth development (Zahra & Dess, 2001), entrepreneurship (Florence, 2006), creativity and innovation development (Drucker, P.F. 1998), company registration (Cooper, 2003 & Vesper, 1982), new businesses (Gartner, 1985 & Low and Macmillan, 1988), firm recreation (Guth & Ginsberg 1990), organizational growth and survival (Guth and Ginsberg, 1990), economic development (Kirzner, 1973, Cole, 1968, Schumpeter, 1934) and social- cultural development will be considered as the main entrepreneurship achievements corresponds to applicable approaches and with a broader prospective. According to accomplished tests, it can be claimed that there's a meaningful correlation between these two variables since the accomplished correlation is close to one. Moreover, since the correlations are close to one in many cases, it can be acknowledged that there's a complete and positive relation in 0.1% error level besides in 0.05% error level. According to hypothesis and accomplished structural equations of the model, the effect of entrepreneurial activities on entrepreneurial perceptions is 0.40. Consequently, it can be claimed that entrepreneurial activities will have a remarkable progress by increasing people's knowledge through entrepreneurial perception education. The important point in the above model is that, there's a negative relation of fear of failure with entrepreneurial perception. Worthwhile, fear of failure is a serious barrier against entrepreneurship development and the tendency of active members of a country toward entrepreneurship. Fear of failure means fear of losing job and financial reputation, people's brickbat, humiliation and domination of relatives, colleagues and competitors because of failure. In fact, adults of a society do nothing for realization of their business idea because of fear of failure. According to research scope, the outcome result shows this negative relation.

Table 4: Survey research hypothesis

No	Hypothesis	Result
1	Views Index of Entrepreneurial Perceptions has relationship to Views Index of Entrepreneurial Activity	Rejection
2	Latent index of Entrepreneurial Activity has relationship to Views Index of Entrepreneurial Perceptions	Accept
3	Latent index of Entrepreneurial Perceptions has relationship to Views Index of Entrepreneurial Activity	Accept
4	Entrepreneurial Perceptions has effect on entrepreneurial activity	Accept

6. RESULT

In this research by using the standard data from 2011 global entrepreneurship monitor reports, the meaningfulness of relations between entrepreneurial perception and entrepreneurial activities has been surveyed by structural equations model. According to outcome results of statistic tests, it can be claimed that there's a positive and meaningful relation between entrepreneurial perception and entrepreneurial activities. The outcome results of other researchers in other researches approve a relation between these two components. Considering the outcome results of statistic tests in structural equations model, it's being proposed for other authors and researchers to survey the reasons of entrepreneurial fear of failure in their researches and to present appropriate strategies for its resolution according to our country's cultural samples. Also it is proposed to centralize the entrepreneurship education centers to behavioral education in opportunity and market studies in order to better applying of entrepreneurial opportunities perceptions. The researchers and authors can study the relations governing on variables, more widely by developing the introduced components in order to extend their future investigations or they can analyze the content of relations between entrepreneurial and economic components by using the world economic forum reports.

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