

# RANKING THE FACTORS THAT INFLUENCE ENTREPRENEURSHIP DEVELOPMENT IN DEPARTMENT OF NATURAL RESOURCES AND WATERSHED MANAGEMENT IN SISTAN AND BALUCHESTAN PROVINCE USING THE AHP METHOD

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**Abstract.** Nowadays, due to the fact that business condition has become more competitive, organizations try to be more entrepreneurial and have higher productivity and efficiency. Using Analytic Hierarchy Process, three main factors and for each of them some sub-indices are determined to prioritize the factors and indicators that are related to factors affecting the development of entrepreneurship. The main achieved results include: in terms of structural factor, information technology has the greatest impact on the development of entrepreneurship. In terms of behavioral factors, the characteristics of employees has the greatest impact on the development of entrepreneurship. Finally, some recommendations are presented for research improvement.

**Keywords:** structural factors, behavioral factors, contextual factors, development of entrepreneurship, Department of Natural Resources and Watershed Management

## 1 Introduction

Nowadays, due to the various events that have occurred at the social, cultural and business levels, special attention has been paid to entrepreneurship and entrepreneurs in different countries. Reinforcing organizational entrepreneurship in the current organizations and paving the way for its development is considered as a means for the economic progresses, especially in developing countries. (Hadizadeh Moghaddam, 2010) Entrepreneurship is a concept that has existed since the beginning of human creation. Entrepreneurship can be regarded as the center of work, development and progress in the modern era. Without sufficient attention to "developing an entrepreneurship culture" it is not possible to achieve growth and development indices, which can be achieved through changes in the process of production, efficiency and technical and industrial progress in the economy. In the transition from the traditional to the industrial stages, it is necessary to pay special attention to the capacity of individual entrepreneurs in taking advantage of natural resources and modern technologies, because they employ new methods in the market to prepare themselves for optimum use of tools and attaining high-quality products and services (Dariani, 2011).

Entrepreneurship is the main pillar of economic growth in any country. Entrepreneurship can be strengthened by instilling correct entrepreneurial skills at the training stage. Entrepreneurship is one of the main entrances to economic development. Entrepreneurship can be considered a continuum which shows the intensity of entrepreneurship in an individual or company (Perakash et al., 2015).

Undoubtedly, the development of entrepreneurship involves several factors that should be identified and determined in terms of affectivity. The Department of Natural Resources and Watershed Management in the provinces, as part of the Ministry of Agriculture, play an important role in the development of cities and countries. It is necessary to pay attention to this issue and the entrepreneurship development (ibid).

## 2. Literature Review

### 2.1 Entrepreneurship

Entrepreneurship derives from the French word "Entrepreneur" which means "commitment". According to Webster's Collegiate Dictionary, an entrepreneur is a person who organizes, manages and undertakes the risks of an economic activity. The word entrepreneur was invented in French language long before the emergence of the general concept of entrepreneurship in modern language. In the early sixteenth century those who would lead the military mission were called entrepreneur. Since then this word has been used for other types of risks, though with some limitations. Since about the year 1700, the term entrepreneur has been frequently used to refer to the French government contractors involved in the construction of roads, bridges, ports, and facilities (Cochran, 2012).

Entrepreneurship is the process of discovering new ways to combine resources (Grace and Ihomo, 2013). Morris (1996) has defined the relationship as the relationship between entrepreneurs and the environment and the role of government in building the economic, political, legal, financial and social structures. Reynolds et al. (1999) have defined entrepreneurship as any attempt to create a new business or new risks, such as self-employment, organizing new business or expanding an existing business by an individual, a team or an already established business. Hindel and Rushworth (2002) defined entrepreneurs as having access to and understanding and exploiting the opportunities. Gartner and Carter (2003) defined entrepreneurship as an organizational phenomenon, especially as an organizing process (Harley, 2009). Kerry and Toric (2003) defined entrepreneurship as behavioral characteristics of individuals. Lowry (2003) defined entrepreneurship as an economic system that includes entrepreneurs, legal and institutional arrangements, and government. Stevenson et al. believe that entrepreneurship is the process during which opportunity are observed by individuals (for themselves or for the organizations in which they work) regardless of the resources that are under their control (Harley, 2009).

The European Union defines entrepreneurship as the ability of people to create ideas and to turn them into reality. This includes creativity, innovation and risk taking. Meanwhile, the entrepreneurs should be supported to be able to recognize and exploit the opportunities better. Training entrepreneurs is one of the means that enables them to take advantage of opportunities. The best time to start the training is the primary school (Minniti, 2008).

#### 2.1.1 Entrepreneurship Development

Development of entrepreneurship is a complex, long-term and comprehensive process that plays an important role in the growth and economic development of countries. Today, entrepreneurship is the most strategic and important tool for economic development in the developed countries (Rabiyi and Nikraves, 2014).

In the literature of entrepreneurship, the development of entrepreneurship contains 9 levels;

- A. Micro level
- B. Macro level

Micro level includes nine categories of policy making in terms of government investment and programs. The first policy is education that covers the development of entrepreneurship. It includes improving and balancing the curriculum in the higher education and the business environment. The second policy is the structures that include all government programs in terms of business loan development or risky investment, and Internet access. The third policy is entrepreneurship culture that involves all government programs regarding social entrepreneurship and

cultural development for new entrepreneurs, such as creative economic development (Hoffman, 2011).

### 2.1.2 Factors Affecting the Development of Entrepreneurship

#### 1. Organizational Factors

Moghim (2005) divides the factors that influence organizational entrepreneurship into three categories:

A. Entrepreneurial structural factors; including items such as organizational structure, organizational strategy, payroll systems, financial and budgetary systems, information systems, research and development system, control system, and monitoring human resources systems, processes and methods.

B. Entrepreneurial behavioral factors; including issues such as organizational culture, motivating human resources, leadership style, characteristics of staff and managers, human resource training, and human communication system.

D. Entrepreneurial contextual factors; including issues such as relationship with the client, political and legal environment, social and cultural environment, and administrative environment (Moghim, 2004).

#### 2.2 Research Background

Considering the role and significance of entrepreneurship and the brilliant history of entrepreneurs in the development of many countries, and due to several economic problems in our country, promotion and dissemination of the concept of entrepreneurship, and providing an infrastructure to support entrepreneurial culture are of vital importance and necessity. Entrepreneurship is a process that takes place in different environments and places. It involves some changes in the economic system through innovation by people who react to economic opportunities that create individual and social value (Ecole Vanak, 2010).

Entrepreneurship is a process that leads to satisfaction or new demand. Entrepreneurship is the value creation process through formation of a unique set of resources to take advantage of the opportunities.

There are various studies about entrepreneurship development and the factors that influence it. Some of them are presented in the following section:

Marioni and Mirzaneti (2015) studied the development of entrepreneurship in the creative industries in Indonesia. They found out that the development of entrepreneurship in the creative industries can be strengthened through assistance and cooperation of other institutions, and for solving business problems the government policy makers should develop and improve inefficient government bureaucracy, corruption, financing, poor infrastructure, and trained work force. Jelonek (2015) examined the role of innovation in the development of electronic entrepreneurship. The research asserted that customers play the main role in terms of innovation. In addition, the present study confirmed the hypothesis that companies rely heavily on the implementation of electronic entrepreneurship. Thus, strengthening their position in the virtual market is important. Rajae et al. (2011) examined the factors influencing the development of entrepreneurship in agricultural production cooperatives in Zanjan. The research was a descriptive survey study. The results showed that from the standpoint of managers the major factors affecting entrepreneurship in the cooperatives include financial support and tax cuts, granting of bank loans, creating special conditions for entrepreneurs and providing documentation for international entrepreneurship development.

Hosseini and Bozorgi (2016) examined the factors affecting entrepreneurship on the establishment and development of organizational entrepreneurship opportunities. The results suggested that the structural factors in the General Office of Ports and Maritime of Mazandaran Province had no impact on organizational entrepreneurship opportunities and that there is no relationship between them. The contextual factors in the General Office of Ports and Maritime of Mazandaran Province had an impact on organizational entrepreneurship opportunities, and there is a relationship between them. Behavioral factors in the General Office of Ports and Maritime of Mazandaran Province had an impact on organizational entrepreneurship opportunities and there is a relationship between them. Jamshidi et al (1394) examined the factors affecting the development of entrepreneurship in the agricultural production cooperatives of Minoodasht city. The results showed that the average total score of the entrepreneurship of the studied population is 2.585 with most people (2.58) being in the weak or very weak categories. It was also found that education level, number of shares, previous experience in the field of entrepreneurship, income, and experience in agricultural production cooperatives have a positive impact on entrepreneurship. Ghanbari et al (2015) examined the influential factors on the development of entrepreneurship in rural tourism. The results showed that factors associated with the strengths and weaknesses of development of entrepreneurship in tourism in the studied villages had the highest rating. Being located on the main roads of the country is an asset, lack of a strong culture of entrepreneurship in the local residents and negligence and failure of the authorities are weak points, availability of diverse ways of making money is an advantage, and finally destruction of ancient monuments and historic buildings and changing the usage of the land and landscape in the villages are among the most critical threats. Eftekhari et al (2014) analyzed the factors affecting the development of tourism entrepreneurship. The results showed that from the viewpoint of all 9 groups, the economic factor has the highest average and is more important in the development of entrepreneurship. Hosseininia et al (2015) examined the environmental factors influencing the development of the technological entrepreneurship of electric power industry by using PESTLI technique. The political, economic, social, technological, legal and international factors were studied. The results showed that, with a very high average rating than other factors, economic factors are the most effective dimensions among the factors. Then the ranking of international, legal, executive and political factors are close and finally technological and social factors are the least influential factors.

Therefore, it can be concluded that for Marion and Mirzaneti (2015), Rajae et al (2011), Lerner and Hub (2010), and Hosseininia and Bozorgi (2014) financing, government financial support, and providing financial support are the factors affecting organizational entrepreneurship development.

Rajae et al (2011), Hussein and Bozorgi (2016), and Hosseininia et al (2014) believe that legal factors, bank loans, environmental factors and political factors influence the development of entrepreneurship.

Hosseininia et al (2014), Rajae et al (2011), and Hussein and Bozorgi (1395) believe that environmental and social conditions are the factors that affect the development of entrepreneurship.

The present research and the examined factors to some extent are similar to the studies of Hosseini and Bozorgi (2016). They have studied the effect of the triple factors, while the present study examines the subcomponents of each factor individually.

### 3. Research Methodology

#### 3.1 Research Method

In terms of method, the present study is a descriptive-survey research and in terms of objective is an applied research. Statistical population of the study is 130 people who are all

employees of the Department of Natural Resources and Watershed Management in Sistan Baluchestan Province in 2015. The study used Morgan Table to determine the sample size which included 98 people. Using Analytic Hierarchy Process three main factors and for each of them some sub-indices were

determined to prioritize the factors and indicators that are related to factors affecting the development of entrepreneurship.

3.2. Research Model

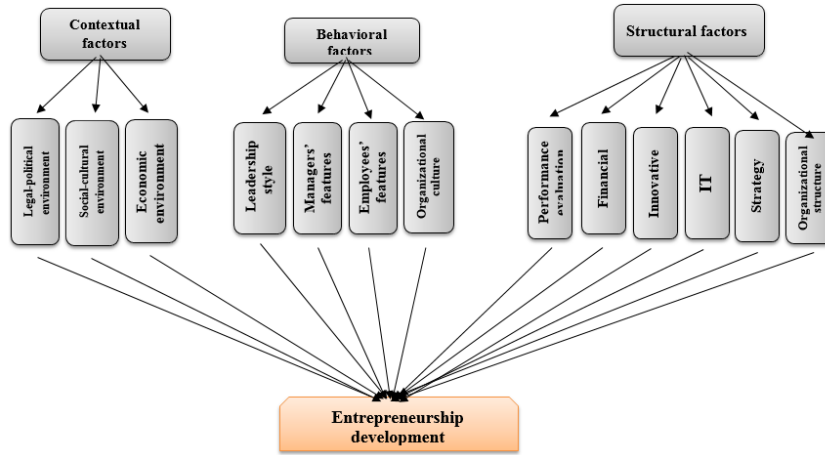


Figure 1: Conceptual Model of the Research

4. Data Analysis

The result of Analytical Hierarchy Process (AHP) for the main factors and research indicators

Using Analytic Hierarchy Process the present study determined three main factors and for each of them some sub-indices to prioritize the factors and indicators that are related to factors affecting the development of entrepreneurship. The integrated paired comparison matrix of 130 decision makers is shown in table (1).

Table 1: Paired comparison matrix of the main research factors

contextual	behavioral	Structural	Indicators
		1	Structural
	1		behavioral
1			contextual

After making the model by Expert Choice software and entering the paired comparisons matrix, the weight of criteria and sub-criteria were obtained which can be seen below. The figure (2) shows prioritizing of the main factors that affect the development of entrepreneurship based on the combination of decision-making methods by using AHP and Expert Choice

software. As shown in Figure 9, technological factor with the relative weight of 0.447 is the most important factor, structural factors with the relative weight of 0.319 is the second priority, and contextual factor with the relative weight of 0.233 is the third priority. The paired comparisons inconsistency rate is 0.3 and since it is less than 0.10, the comparisons are acceptable.



Figure 2: Prioritizing the main factors using the Expert Choice software

Table 2: Prioritizing the main factors that affect the development of entrepreneurship

row	criteria	weight	priority
1	structural	0.319	2
2	behavioral	0.447	1
3	contextual	0.233	3

Calculating the relative weight of structural indicators

Paired comparisons for each of the indicators with respect to structural factors are shown in Table 3 and Fig. 3. Considering

the table and figure, it is clear that communication between all sub-indicators is two-way.

Table 3: The paired comparison matrix of structural indicators

performance evaluation	Financial	innovation	Information Technology	strategy	Organizational structure	structural indicators
					1	Organizational structure
				1		strategy
			1			Information Technology
	1	1				innovation
						Financial
1						performance evaluation



Figure 3: Prioritizing the main indicators according to structural factors

Table 4: Prioritizing the main indicators according to structural factors

row	criteria	weight	priority
1	Organizational structure	0.171	5
2	strategy	0.134	3
3	Information technology	0.212	1
4	innovation	0.142	2
5	financial	0.172	4
6	Performance evaluation	0.170	6

According to the above table and considering the original weight that is obtained, the following components have the highest to lowest importance in the group, respectively: information technology, innovation, strategy, financial, organizational structure and performance evaluation. On the other hand, since the inconsistency rate is 0.08, which is smaller than the standard 0.1, the questionnaire is completed by respondents with high precision.

**Calculating the relative weight of the behavioral indicators**

Paired comparison for each of the indicators according to behavioral factors is provided in Table 5 and Figure 6. Regarding the table and figure, it is clear that there is a two-way communication between all sub-indicators.

Table 5: paired comparisons matrix of behavioral indicators

<b>Behavioral indicators</b>	cultural	Employees' features	Managers' features	Leadership style
cultural	1			
Employees' features		1		
Managers' features			1	
Leadership style				1



Figure 6: Prioritizing the main indicators according to behavioral factors

Table 6: Prioritizing the main indicators according to behavioral factors

row	criteria	weight	priority
1	cultural	0.569	1
2	Characteristics of employees	0.190	2
3	Characteristics of managers	0.178	3
4	Leadership style	0.063	4

According to the above table, in terms of the original weight the following components are of highest to lowest importance in the group, respectively: culture, characteristics of employees, characteristics of managers, and finally leadership style. Since the inconsistency rate is 0.02 which is smaller than the standard value 0.1, the questionnaire was completed by respondents with high precision.

**Calculating the relative weight of contextual indicators**

Paired comparison for each of the indicators based on the contextual indicator is provided in the table (7) and figure (8). Considering the table and figure, it is clear that there is a two-way communication between all sub-indicators.

Table 7: paired comparison matrix of contextual indicators

legal	political	cultural	social	economic	Contextual indicators
				1	economic
			1		social
		1			cultural
	1				political
1					legal



Figure 8: prioritizing the main indicators regarding contextual indicators

Table (8): prioritizing the main indicators regarding contextual indicators

row	criteria	weight	priority
1	economic	0.240	1
2	social	0.232	2
3	cultural	0.179	3
4	political	0.171	5
5	legal	0.178	4

According to the above table, in terms of the original weight the following components are of highest to lowest importance in the group, respectively: economic, social, cultural, legal and political. Since the inconsistency rate is 0.08 which is smaller than the standard value 0.1, the questionnaire was completed by respondents with high precision.

**5. Conclusions and Recommendations**

Nowadays that work and business involve self-entrepreneurship and self-employment, the entrepreneurship and entrepreneurs play a key role in the economic development of different societies. Due to the growing competitive business conditions, organizations are trying to be more entrepreneurial and have higher productivity and efficiency. Entrepreneurship as an important social phenomenon is influenced by several factors. Some experts believe that economic conditions will lead to entrepreneurship. They argue that entrepreneurship is the main force of economic development and brings change and innovation, along with growth and production of services.

Numerous studies have been conducted on the factors affecting the development of entrepreneurship. The studies have investigated different factors.

This study examined the major and minor factors that affect the development of entrepreneurship by using three main components: structural factors, behavioral factors, and contextual factors, as well as their subdivisions. The results are as follows;

In terms of structural factor, the following components are of the most and the least importance in the group, respectively: information technology, innovation, strategy, financial, organizational structure and performance evaluation.

In terms of behavioral factor, the following components are of the most and the least importance in the group, respectively: cultural components, characteristics of employees, characteristics of managers, and leadership style.

In terms of contextual factor, the following components are of the most and the least importance in the group, respectively: economic, social, cultural, legal, and political components.

Considering the results, the following suggestions are provided to improve current research and future studies;

- The study suggests that managers and macroeconomic decision makers use incentives such as low-interest loans, tax breaks, etc. to encourage entrepreneurship among economic agents. Given the great importance of economic criteria, adopting such policies will lead to the promotion of entrepreneurial activities in the region.

- The study suggests that economic authorities and policy makers pave the way for the private sector to actively take part in entrepreneurship. In this regard, strategies such as reducing red tape and unnecessary bureaucracy, recognizing the rights of the legal sector and giving financial incentives can be advantageous.

- The study suggests conducting conferences and meetings in the region in the presence of top entrepreneurs. Holding such seminars on the one hand leads to exchanging experiences and skills and on the other hand encourages entrepreneurial activities in the economic agents.

- The study suggests that senior managers and authorities use Leader-Member Exchange (LMX) leadership style to advance their jobs. In such circumstances, employees will be allowed to freely express their creative and new ideas. This ultimately will

lead to improvement of innovation and entrepreneurship development.

- The study suggests that the organizations use a fair and accurate reward system in accordance with the degree of activity of employees. On the one hand this encourages employees to work more and on the other hand by increasing the perceived organizational justice, increases the organizational commitment and engagement of the employees.

#### Suggestions for future researches

- Investigation of the relationship between improvement of the employees' quality of life and the development and promotion of entrepreneurship
- Investigation and identification of other factors that affect the development of entrepreneurship
- Investigation of the relationship between leadership styles and entrepreneurship development
- Investigation of the factors such as self-esteem, job security etc. on the organizational entrepreneurship.

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