

## Identification Educational Barriers to the Development of Entrepreneurial Spirit in Zanjan University Students

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**Abstract:** The main purpose of this study is to identify educational barriers to the development of entrepreneurial spirit in Iranian students. This study was descriptive and quantitative research and included the use of factor analysis as the main data processing method. The total population was all students studying in Zanjan University that 185 students were selected using stratified random sampling. A questionnaire was designed as the tool for collecting data. After data collection, SPSS/16 was used in the statistical analysis. The results of factor analysis showed that the five factors namely educational recourses, motivation in training, teaching methods, foresight, and hardware resources could explain 55.9% of the variation of barriers to the development of entrepreneurial spirit in students.

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### 1. Introduction

Entrepreneurship is a critical part of the process of creative destruction that Joseph Schumpeter (1911) argued is so important for the continued dynamism of the modern economy (Klapper, 2002). Experts believe that the rate of entrepreneurship in future may consider as a criterion for differences among the countries' economies. Those countries that concern entrepreneurship consequently encounter sustainable economic growth but those that do not, will face economic slump and social problems (Niazkar & Arab-Moghaddam, 2011).

In addition, institutions of higher education in particular can contribute more directly to entrepreneurship. America's high technology clusters of entrepreneurial firms correspond to clusters of leading research universities. Since other top research universities lack accompanying clusters of entrepreneurial firms, the particular characteristics of the universities that spawn them are of interest (Digregorio et al., 2004). Generally higher levels of education attainment should be related to more entrepreneurship (Fogel et al., 2006).

Many researches have been conducted into the nature and effectiveness of educational programs that aim to foster entrepreneurship (Anderson & Jack, 2001). It has been found that Entrepreneurship Education plays a role in raising awareness of the nature and importance of entrepreneurship (Hill & Cinneide, 2001), changing attitudes (McVie, 2001) and delivering skills (Leitch & Harrison, 2001). Education positively affects the potential

entrepreneur's perception of job security and attitudes towards status, opportunity for financial gain, job satisfaction, and positive view of economic outlook and awareness of the economic climate. It was also found that after sitting on an entrepreneurship course students' attitudes to whether an entrepreneur was born or made moved from negative (in-born) to neutral (Turnbull et al. 2001).

According to the research by Mok (2005), the role of the university sector in fostering entrepreneurship might be classified in three parts: 1) Universities engaging in commercialization of research results; 2) Universities reforming curricula in fostering entrepreneurship; 3) Other market-driven activities.

The government and the universities need to continue their work together to encourage enterprise. The government is currently providing funds for business incubators that provide space and facilities for new start-ups. The universities are endeavoring to produce entrepreneurial students who will in time pass on to the incubators (Robertson et al., 2004).

Students generally have little or no experience of setting up and running a business. The majority will have spent most of their time, within the educational system, which does little to nurture entrepreneurial activities (Henderson & Robertson, 1999). Typically the education system promotes a large firms culture where the majority of students plan to work for somebody else. This culture leads to students lacking in entrepreneurial aspirations and the

skills necessary to set up and run a business (Henderson & Robertson, 1999).

Several studies have examined barriers to entrepreneurship. Barriers were perceived as firstly are the lack of funds (Turnbull et al., 2001; Lane 2002), aversion to stress, hard work and time commitment (Henderson and Robertson, 1998), the fear of failure, the aversion to risk and lack of an idea (Lane, 2002; Henderson & Robertson, 1998; Scott & Twomney, 1988). A research by Robertson et al. (2004) showed that students hold perceptions about entrepreneurship that are preventing them from considering their own business as a career option.

Morrison (2000) found that there was a significant relationship between entrepreneurship and culture on national and sub-national levels. On national and international levels, the Global Entrepreneurship Monitor (2000-2002) found that social and cultural attitudes in the UK pose the strongest barrier to the growth of entrepreneurship due to the negative attitudes towards wealth creation, self-employment and business failure. According to the study of Vestergaard (2005), there are two main impediments to university entrepreneurship. The first is "Opposing political rationalities in university governance – one seeking to prevent what other promotes" and the second is "Assigning the role of creating science-based spinout companies to senior researchers".

Entrepreneurship is the lifeblood of our economy- boosting productivity, creating employment and prosperity and revitalizing our communities. The government tries via the universities change attitudes to enterprise and tackle the difficulties that we know entrepreneurs can face in starting and growing their businesses. The government has taken actions designed to stimulate the growth of new businesses and aid their survival. The identification of barriers to entry is important, together with strategies to minimize their impact. Therefore, the purpose of this study is to identify educational barriers to the development of entrepreneurial spirit in university students. This paper highlights the barriers that student face to improve their entrepreneurial activities and makes it clear in what areas higher education institutions can assist in breaking down the barriers identified.

## 2. Material and Methods

The methodology used in this study involved a combination of descriptive and quantitative research and included the use of factor analysis as the main data processing method. The research population included is engineering students in Zanjan University (N=2554). Using Cochran formula, 185 students were selected through stratified

sampling method. Statistical analysis was done through statistical package for the social sciences (SPSS) version 16.

Questionnaire was designed as the main tool of the study, all questions except the some personal characteristics of students were written as Likert's five-point range. Content and face validity were established by experts consisting of faculty members of university and some experts in the field of entrepreneurship. A pilot study was conducted to determine the reliability of the questionnaire for the study. Computed Cronbach's Alpha score was 81.0%, which indicated that the questionnaire was highly reliable.

To determine the appropriateness of data and measure the homogeneity of variables about factors affecting the development of entrepreneurial spirit in students, the Kaiser-Meyer-Olkin (KMO) and Bartlett's test measures were applied. These statistics show the extent to which the indicators of a construct belong to each other. KMO and Bartlett's test obtained for these variables show that the data are appropriate for factor analysis (table 1). The Kaiser criterion also was utilized to arrive at a specific number of factors to extract. Based on this criterion, only factors with Eigen-values greater than one were retained.

Table 1. KMO measure and Bartlett's test

KMO	Bartlett's test of sphericity	
	Approx. chi	square Sig.
0.821	1.136 * 10 <sup>3</sup>	0.000

## 3. Results

According to the results, the mean age of students who participated in the study was 21.1 years. 61% of them were male and the rest were female. Students were asked to report their job experience: 26.5 % had job experience; the mean of their working experience was 1.5 years. 19% of respondents were married and the rest was single. Less than 12% of them passed a course in entrepreneurship. According to table 2, students also were asked to report their GPA in university and high school, financial affordability, parents' educational degree, and willingness to start a private business.

As shown in table 2, 47.5% of fathers had a bachelor's degree or higher; and 33.5% of mothers had a bachelor's degree and above. Just 19.4% of student described their financial affordability good and very good. Also most of the respondents (65.4%) tended to start a private business for themselves.

Table 2. Demographic profile and personal characteristics of studied students

Variable	Mean	SD	Percent of level				
			1	2	3	4	5
Age	21.1	1.50	—	—	—	—	—
Job experience	1.5	0.66	—	—	—	—	—
University GPA	15.28	1.56	—	—	—	—	—
High School GPA	17.79	1.18	—	—	—	—	—
Gender	—	—	61.1	38.9	—	—	—
Marital status	—	—	18.9	81.1	—	—	—
Entrepreneurship course	—	—	11.9	88.1	—	—	—
Educational degree of father	—	—	9.7	37.8	15.7	24.9	11.9
Educational degree of mother	—	—	5.9	27.6	19.0	34.0	13.5
Financial affordability	—	—	8.6	10.8	31.9	29.2	19.5
Willing to start a private business	—	—	23.8	41.6	25.9	7.0	1.6

In this study, from all 25 variables, 16 variables were significantly loaded into five factors. These factors explained 55.87 percent of total variance in barriers to the development of entrepreneurial spirit in students. According to the Kaiser criterion, five factors with eigen-values over 0.5 were extracted. The eigen-values and percentage of variance explained by each factor are shown in table 3. The percentage of variance explained by each of the five factors is also shown in table 3. Eigen-values drive the variances explained by each factor. Sum of squares of factor's loadings (eigen-values) indicates the relative importance of each factor in accounting for the variance associated with the set of variables being analyzed. According to table 3 eigen-values for factor 1 through 5 are 2.79, 2.67, 2.42, 2.20 and 1.64, respectively.

Table 3. Number of extracted factors, eigen-values and variance explained by each factor

Factors	Cumulative % of variance	% of variance	Eigen-value
1	2.792	13.297	13.297
2	2.675	12.739	26.036
3	2.420	11.525	37.561
4	2.201	10.481	48.042
5	1.644	7.828	55.870

The percentage of trace (variance explained by each of the five factors) is also shown in table 3. The traces for factor 1 through 5 are about 13.30, 12.74, 11.52, 10.48 and 7.83 respectively. The total

percentage of the trace indicates how well a particular factor accounts for what all the variables together represent. This index for the present factors shows that 55.87 percent of the total variance is represented by the variables contained in the factor matrix.

Table 4. Variables loaded in the factors using varimax rotated factor analysis

Name of factor	Variables loaded in the factor	Factor loadings
<b>Educational resources</b>	Lack of entrepreneurship in the curriculum of courses	0.781
	Lack of appropriate lesson plans and discontinuity in content related to entrepreneurship	0.691
	Lack of appropriate educational books in the field of entrepreneurship	0.700
<b>Motivation in training</b>	Teachers with lack the ability to motivate and nurture creativity in students	0.617
	Lack of specialized seminars on entrepreneurship at the School	0.660
	Limited practical activities in various courses	0.731
<b>Teaching methods and regulations</b>	Students not participating in course discussions and lack of creativity in them	0.625
	Lack of sufficient attention to the educational rules	0.646
	Quantitative orientation regardless of the quality of education	0.706
	Using traditional methods of training	0.759
<b>Foresight</b>	Using inappropriate training methods into students' interests and abilities	0.588
	Lack of excursions to familiarize students with their future career	0.687
	Graduates learned inappropriate with the labor market needs	0.774
<b>Hardware resources</b>	Not obtain necessary backgrounds for entry into the field of employment	0.684
	Lack of facilities for practical work	0.707
	Lack of educational equipment and teaching aids	0.736

The Varimax rotated factor analysis is shown in table 4. In determining factors, factor loadings greater than 0.50 were considered as to be significant. The classification of the variables into

five factors was displayed in Table 4. The variables were classified in educational resources, motivation in training, teaching methods and regulations, foresight, and hardware resources. As anticipated, the first factor accounts for 13.297 percent of variance and 3 variables were loaded significantly. A relevant name for this on loading's pattern is "educational resources". Eigen-value of this factor is 2.792, which is placed at the first priority among the factors for barriers to the development of entrepreneurial spirit in students (table 4).

The second factor contains 4 variables relating to "motivation in training". The eigen-value for this factor is 2.675 which explain 12.739 percent of the total variance. The name assigned to the third factor is "teaching methods and regulations". This factor with eigen-value of 2.420 explains 11.525 percent of the total variance of barriers to the development of entrepreneurial spirit in students. The fourth factor is associated mostly with the variables related to looking at the future. Thus this factor can be named as "foresight". These variables explain 10.481 percent of total variance. The name assigned to the fifth and last factor is "hardware resources". This factor with eigen-value of 1.644 explains 7.828 percent of the total variance (table 4).

#### 4. Discussions

Entrepreneurship is the key driving force behind economic growth and innovation around the world. Entrepreneurs have the ability to turn new ideas into breakthrough solutions while creating employment and spreading prosperity. Entrepreneurial spirit flourishes in people who value and recognize innovativeness and risk-taking. This feature could be especially helpful in students in their future career. But there are always some obstacles to develop entrepreneurial spirit in students. This study attempted to identify these barriers.

The results of factor analysis indicated that the barriers were categorized into five groups, namely educational resources, Motivation in training, Teaching methods and regulations, Foresight and Hardware resources. The findings revealed these five factors determined about 55.9 percent of variance of barriers to the development of entrepreneurial spirit in students. The findings also show that "educational resources" was found out to be the most important obstacle to the development of entrepreneurial spirit in students. It means that shortage or lack of educational resources could create serious problems in fostering students' entrepreneurial spirit. According to the results, "motivation in training" was placed at the second most important barrier to the development of entrepreneurial spirit in students. Factors "teaching methods", "foresight", and

"hardware resources" are also obstacles to development students' entrepreneurial spirit. So, deal with these five factors and variables associated with them and efforts to overcome these barriers can be effective to promote entrepreneurship in students.

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