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Providing an Optimal Model for the Effectiveness of Entrepreneurship Education on Graduates (Case Study)

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Abstract

Purpose: The purpose of this study was to provide an optimal model for the effectiveness of entrepreneurship education on graduate students in university. **Methodology**: This research was carried out in a mixed method. The statistical population of this research in the qualitative part included experts in the scientific community and academic experts who had executive backgrounds at decision-making levels and the quantitative part all graduates of the management faculty in the Islamic Azad University of Central Tehran branch, which were a total of 1500 graduate students. Using Cochran's equation, 305 subjects were evaluated. The subjects were randomly introduced from the statistical population and selected as the statistical sample. A researcher-made questionnaire was used for collecting data on a five-point scale containing 42 items. Its face and content validity was confirmed by 10 experts and its reliability in a preliminary test with 30 subjects for all variables studied was obtained above 0.7, which was acceptable. For data analysis, descriptive and inferential statistics of structural equation analysis in Smart PLS software and Kolmogorov-Smirnov test in SPSS software were used. **Findings**: The findings showed that the cultural, economic, political, social, educational and demographic factors influenced entrepreneurship education. **Discussion:** Entrepreneurship education is one of the most important categories in the field of education, which serious attention to it causes the economic, educational and social development of students. Therefore, raising entrepreneurs in the country can be considered as a first step in the development of education.

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1. Introduction

Employment and unemployment are among the fundamental economic issues of each country. By increasing employment and reducing unemployment as one of the developmental indicators of societies, the desired status can be achieved. On the other hand, job creation requires entrepreneurship programs, especially in higher education environments. Enhancing entrepreneurship and creating the right platform for its development is considered as an instrument of economic development in countries, especially developing countries, because an entrepreneurial activity of high efficiency leads to economic development, job creation, innovation, competitiveness and … (Abreu and Grinevich, 2013).

In today's world, entrepreneurship development plays an effective role in the economic, social, industrial and political development of each country, and on the other hand, it is considered as the most important solution to the unemployment problem of academic graduates. Since higher education is considered as one of the main infrastructures of development of each country, attention to higher education has been one of the major concerns of decision makers and planners of countries, so that many universities in developed and developing countries have long started using entrepreneurship and in the content of strategies, policies and action plans, special attention has been paid to enhancing the entrepreneurial spirit of university students and graduates (Ahmadi and Omidi Najafabadi, 2015).

During the last century in our country, the growth of the students of theoretical universities has dramatically increased, but their quality has not been consistent with the needs of the labor market, and this has led to one of the major problems of the country as the unemployed theoretical university graduates. In this regard, a study shows that 70% of the unemployed university graduates do not have the necessary skills and some of them with expertise do not have a working and entrepreneurial spirit. Many scholars and researchers in this field believe that there is a direct relationship between lack of the required skills and inappropriate training provided to students (Audretsch et al., 2012).

In recent years, due to some of the problems of higher education such as the impossibility of effective absorption of graduates in the labor market, the lack of appropriateness between the academic disciplines and occupations and the maximum absorption of graduates of theoretical universities in non-productive and ineffective sectors, great attention has been paid to entrepreneurship education due to its special nature and objectives in training skilled and efficient human resources at the specialized levels required by the labor market and various economic and industrial sectors of the country. As such, this has made the role of this education more prominent in comparison with other common education in the country in the field of entrepreneurship and employment (Babaei et al., 2016).

The most important achievements of entrepreneurship in developing countries are job creation, well-being, wealth, and job opportunities. Spread of entrepreneurship culture as one of the essential needs of society requires the emphasis on education in the field of entrepreneurship. All researchers emphasize the role of entrepreneurship as a key factor in improving corporate, regional, and national economic performance (Bains, 2015).

2. literature Review

In their article, Norouzi and Sari Al-Ghalam (2016) first referred to the concepts and foundations of entrepreneurship, and then investigated the general analysis of a series of barriers to academic entrepreneurship and factors slowing entrepreneurship down in universities, and also factors facilitating entrepreneurship in universities. Meanwhile, they mentioned some course of actions that universities and higher education institutions need to take to enter entrepreneurship course and be able to survive in a rapidly changing world. The research method in this paper is mostly library and field studies including structural

and gender issues and other effective factors and suggestions have been used. In this study, we tried to present the most necessary proposed and applied barriers.

As a result of Debackere and Veugelers' (2015) research, various types of formal communication for knowledge sharing have been introduced as follows: Establishing technology-based companies by researchers, collaborative research, definition and implementation of the joint research and development projects by academia and enterprises, developing the intellectual property of scientific institutions through their registration, protection and licensing, as well as collaborative co-operation in education, advanced training for company employees, and the exchange of research staff between companies and research institutes.

By reviewing and evaluating the theoretical framework of the research as well as studies on the subject of the present research, we can identify the components and indices of the optimal model of entrepreneurial education for university graduates in the form of the following hypotheses: 1) The cultural factors (knowledge seeking, professional requirements and entrepreneurial culture) affect entrepreneurship education. 2) The economic factors (sale of intellectual property rights arising from academic research, providing laboratory and workshop services, setting up university affiliated companies, conducting research projects outside the university, identifying price structures, identifying market barriers, identifying hazards, identifying distribution channels, identifying trends and competitors, assessing potential profit and identifying capital needs) affect entrepreneurship education. 3) The political factors (selection of organizational structure, government trust in the university, the country's political engagement with the world's major companies, political actions of the government, the country's political situation in the region, environmental change and the support from the authorities) affect entrepreneurship education. 4) The social factors (family history, exposing others to the entrepreneurial activity, past entrepreneurial experience, and environmental and safety features) affect entrepreneurship education. 5) The educational factors (goals and content of educational materials, teaching and learning methods of educational materials and evaluation methods of educational materials) affect entrepreneurship education. 6) The demographic factors (age, gender, educational level, marital status, employment status, income, decision-making power, not being restricted to the available resources, leadership ability, creativity, innovation, risk-taking and learning spirit) affect entrepreneurship education.

3. Methodology

The present study was carried out in two successive qualitative and quantitative stages using mixed exploratory method. The present research was a qualitative study in the first phase (qualitative phase). In this phase, the necessary information was gathered by reviewing and evaluating the studies carried out on the subject of the present research, as well as the deep interview with the experts in the field of entrepreneurship education. Sampling method at this stage was snowball sampling. Then, in order to evaluate and fit the proposed conceptual model, a researcher-made questionnaire was developed based on the indicators and components of the model in the form of a five-point Likert scale. This questionnaire was provided to a larger statistical population compared to the statistical population of experts.

The second stage (quantitative phase) was a quantitative study using structural equation modeling. To this end, the collected data from the researcher-made questionnaire based on the proposed model (derived from the qualitative phase of the study) were evaluated. The statistical population consisted of two groups: the statistical population in the qualitative part were the experts of the scientific community and academic experts, among them 24 samples were considered as the interviewees. The statistical population in the quantitative part included all graduates of the management faculty in the Islamic Azad University of Central Tehran branch. In this research, the statistical population included a total of 1500 graduate students. Using Cochran's equation, 305 subjects were evaluated. The subjects were randomly introduced from the statistical

population and selected as the statistical sample. The demographic characteristics of the statistical sample are represented in Table (1).

Table 1. Demographic characteristics of the statistical sample

Cumulative frequency percentage	Correct frequency percentage	Frequency percentage	Frequency	Group	Variable
10.9	10.9	10.5	32	20-30 years old	Age
58.7	47.8	45.9	140	30-40 years old	
96.6	37.9	36.4	111	40-50 years old	
100	3.4	3.3	10	Over 50 years old	
	100	96.1	293	All people who answered	
		3.9	12	People who did not answer	
33.8	33.8	32.1	98	Female	Gender
100	66.2	63	192	Male	
	100	95.1	290	All people who answered	
		4.9	15	People who did not answer	
15.6	15.6	15.1	46	Associate	Education
69.4	53.7	51.8	158	BA	
100	30.6	29.5	90	MA and higher	
	100	96.4	294	All people who answered	
		3.6	11	People who did not answer	
8.9	8.9	8.9	27	1-5 years old	Working experience
84.8	75.8	75.1	229	5-10 years old	
90.7	6	5.9	18	10-20 years old	
100	9.3	9.2	28	Over 20 years old	
	100	99	302	All people who answered	
		1	3	People who did not answer	
		100	305	Total people	

4. Findings

In this study, Kolmogorov-Smirnov test was used to examine the normality of dependent variable data. Outputs from statistical software on the normal distribution of variables of cultural factors, economic factors, political factors, social factors, educational factors, demographic factors and entrepreneurship education indicate that at a significance level of 5%, the null hypothesis is accepted and data have a normal distribution.

Table 2. The results of the Kolmogorov-Smirnov test

Significance level	Test value	symbol	Variable
0.356	0.107	FA	Cultural factors
0.121	0.078	EG	Economic factors
0.232	0.076	SI	Political factors
0.302	0.117	EJ	Social factors
0.101	0.088	AM	Educational factors
0.468	0.064	JS	Demographic factors
0.200	0.037	AK	Entrepreneurship education

In this research, the conceptual model of research was tested using Smart PLS software in two general stages including "model fit assessment" and "hypothesis testing". For factor loadings, the research model was first tested based on factor loading coefficients. The structural equation model of research in the case of standard factor loading estimation is drawn in Figure 1. The results of the test showed that all factor loadings of the indices were above 0.4 and factor loading of the indices was desirable.
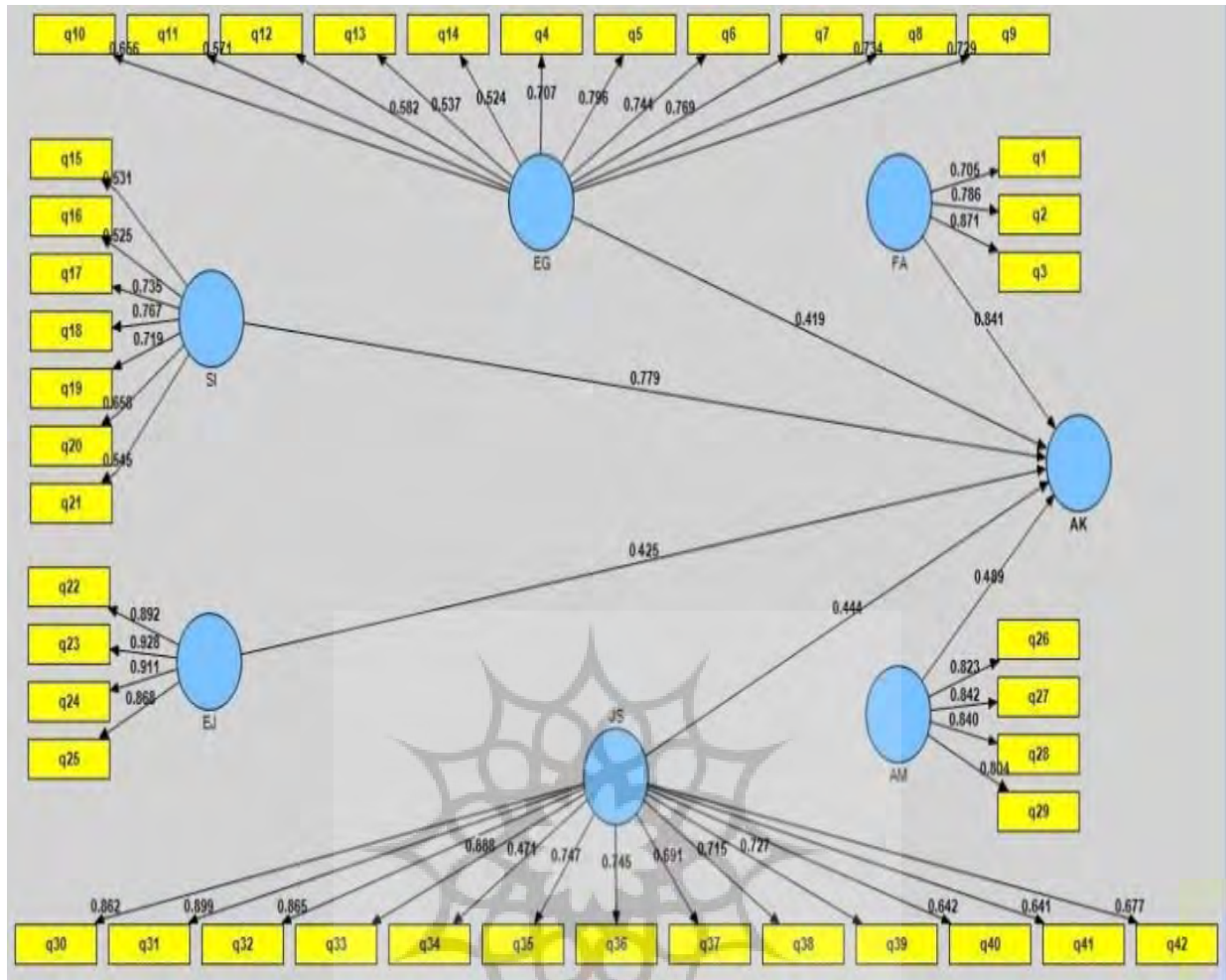
Figure 1. Structural equation model of research in the case of standard factor loading estimation

Cronbach's alpha was calculated for the variables of cultural factors, economic factors, political factors, social factors, educational factors, demographic factors and entrepreneurship education and was reported in Table 3. In this research, the reliability of the questionnaire for independent and dependent variables was obtained at a very acceptable level.

Table 3. Cronbach's alpha coefficients

Cronbach's alpha coefficient	Variable
0.729	Cultural factors
0.877	Economic factors
0.760	Political factors
0.921	Social factors
0.846	Educational factors
0.819	Demographic factors
0.997	Entrepreneurship education

In order to assess the divergent validity of the model, the Fornell and Larcker criterion was used. In the Smart PLS software, this is done by a matrix that its cells contain values of correlation coefficients between variables and the square values of AVE for each variable (Zolfaghari et al., 2011). In the table below, this matrix is shown for variables. The model has a reasonable divergent validity if the numbers in the main diagonal of the matrix are greater than its lower values. As shown in Table 4, all numbers of the main

diameter are greater than the numbers in the lower column, indicating that the divergent (discriminant) validity of the model is acceptable.

Table 4. Divergence validity of model

Entrepreneurship education	Demographic factors	Educational factors	Social factors	Political factors	Economic factors	Cultural factors	
						0.790	Cultural factors
					0.743	0.570	Economic factors
				0.720	-0.051	0.584	Political factors
			0.900	-0.104	0.761	0.556	Social factors
		0.827	-.132	0.478	-0.190	0.265	Educational factors
	0.740	-0.102	0.324	0.023	0.359	0.635	Demographic factors
0.757	0.196	0.123	0.378	0.430	0.349	0.715	Entrepreneurship education

Figure 2 shows the results of the test of the conceptual model of research in the significance state of the t-coefficients. The values calculated on the arrows represent the significance values of the t-coefficients. The results of the T-value reported in the above figure were all greater than 1.96, so it can be concluded that at the 95% significance level all questions were considered for the structural equation model and there was no need to remove any of the questions from the model.
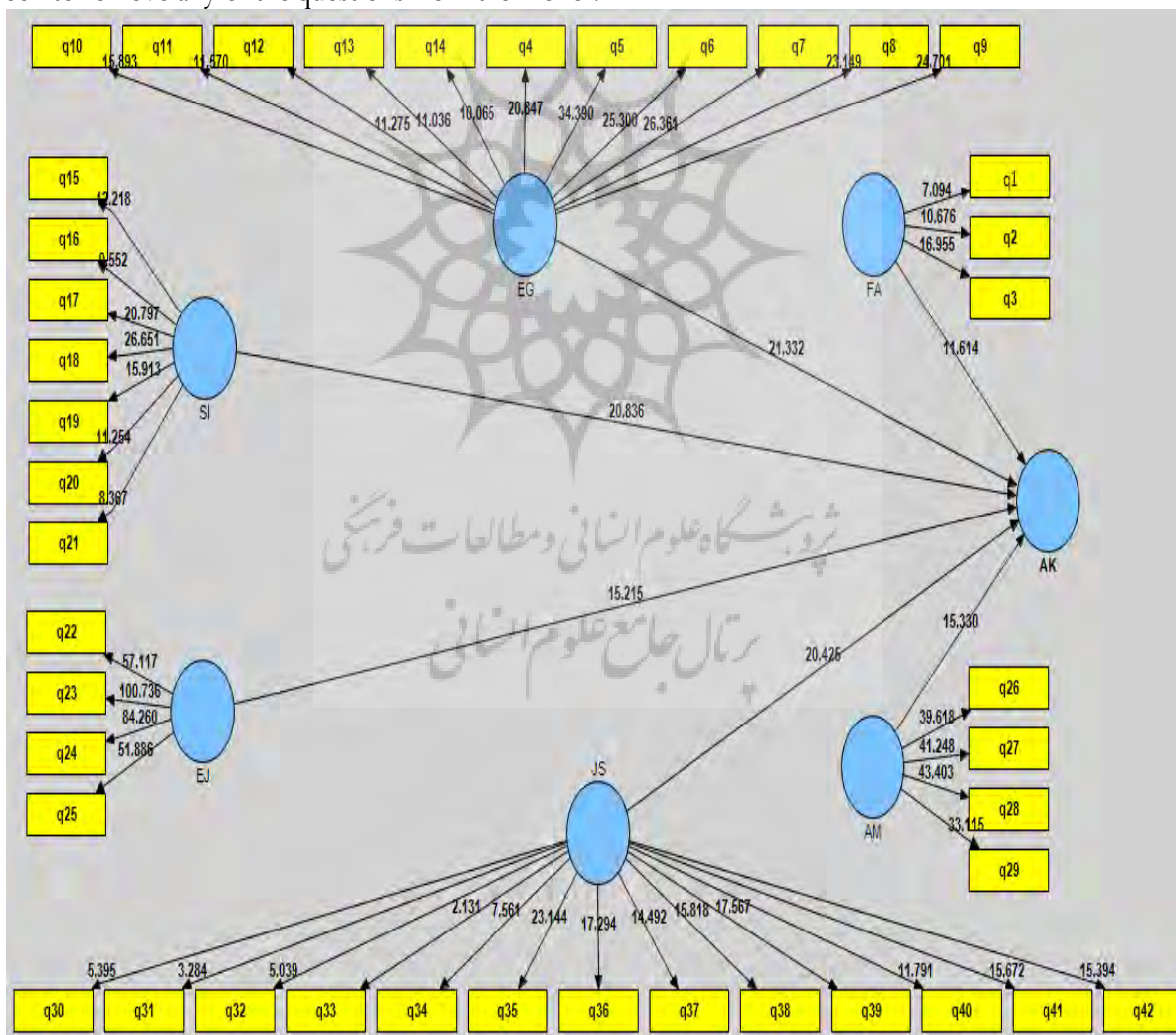

Figure 2. Structural equation model of research in the case of significance coefficients of t-statistic

Table 5 show the value of R2 for the dependent variable derived from Fig. 2. As can be seen, R2 values for entrepreneurship education were 0.997, according to Creswell et al. (2007), having a strong R2 value.

According to the data analysis algorithm in the PLS method, after examining the fit of the measurement, structural and overall models, the research hypotheses are tested by studying the T significance coefficients for each of the paths and the standarized coefficients of the factor loading for the paths. If the value of significance coefficient of each path is above 1.96, the corresponding path is considered significant at 95% confidence level and the related hypothesis is confirmed. The results of factor loading values (Fig. 1) and significance coefficients (Fig. 2) of the conceptual model of the research are represented in Table 6.

Table 6. Factor loading values (Fig. 1) and significance coefficients (Fig. 2) of the conceptual model of research

Hypothesis result	Significance coefficient (Fig. 2)	Factor loading value (Fig. 1)	Path		Hypothesis
			Dependent variable	Independent variable	
Accepting the hypothesis	11.614	0.841	Entrepreneurship education	Cultural factors	First
Accepting the hypothesis	21.333	0.419		Economic factors	Second
Accepting the hypothesis	20.836	0.779		Political factors	Third
Accepting the hypothesis	15.215	0.425		Social factors	Fourth
Accepting the hypothesis	15.330	0.489		Educational factors	Fifth
Accepting the hypothesis	20.426	0.444		Demographic factors	Sixth

5.   Discussion

Entrepreneurship education is an important issue that advanced countries have paid serious attention to it in the process of economic-social development, and the development of entrepreneurship has been a priority in their development programs. Studies show that entrepreneurship development programs in different countries have come to fruition with government policies and support (Salehi Omran and Rostami, 2012).

These policies and supports include the promotion of entrepreneurship spirit and culture, structural reforms and institution-building and the establishment of public-private educational institutions, setting up and managing small business centers, training entrepreneurship through schools, universities and governmental agencies, training entrepreneurship through distance education and media, financial- technical and managerial counseling, and governmental informing. According to the experience of other countries, it can be concluded that promoting entrepreneurship in the country should be considered as an initial step of development, which would not be achieved without the active role of the government (Talebi and Zareyekta, 2008). Although in the third program of socio-economic development of the Islamic Republic of Iran, the issue of entrepreneurship and promotion of entrepreneurship culture has been taken into consideration, however, addressing the issue of entrepreneurship education requires implementation mechanisms and national resolve in the light of cooperation between the government and the private sector (Karami Darabkhani, 2012).

The results showed that cultural, economic, political, social, educational and demographic factors affect entrepreneurial education. The results of this research are consistent with the results reported in the studies

by Abreu & Grinevich (2013), Ahmadi & Omidi Najafabadi (2015), Audretsch et al. (2012), Babaei et al (2016), Bains (2015), Powersa & McDougallb (2015), Pourshariat et al. (2016), Jenkins & Smith (2013), Jacob et al. (2013), Khorsandi et al. (2015), and Debackere & Veugelers (2015). Finally, it is suggested that universities can be effective at educating entrepreneurship by promoting knowledge-seeking, professional requirements, and entrepreneurial culture. They can also affect entrepreneurship education of graduate students by the sale of intellectual property rights arising from academic research, providing laboratory and workshop services, setting up university affiliated companies, conducting research projects outside the university, identifying price structures, identifying market barriers, identifying hazards, identifying distribution channels, identifying trends and competitors, assessing potential profit and identifying capital needs.

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