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Analysis of Factors Affecting Development of Entrepreneurial Training in Agricultural Scientific-Applied Education Centers in Iran

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ABSTRACT

The goal of this study was to analyze the factors affecting development of entrepreneurial training in Iran's scientific-applied education centers. The statistical population of the study was 19255 students of education centers in all provinces of Iran. Sample size was estimated 355 people using Cochran formula. The current research was based on the survey method. The research tool was a questionnaire and its validity was confirmed by faculty members and experts at the scientific-applied education centers. The reliability of the questionnaire was acquired through calculation of Alpha Cronbach coefficient which was more than 0.77 for different parts of the questionnaire. The results indicated that among each of the technical, legal, management, economic and cultural factors, the technical factors is so important in development of entrepreneurial training and it was ranked as first. According to the results of non-parametric correlation coefficients, all independents variables had relation with dependent variable. The results of ordinal logistic regression indicated that the variables of management factors, economic factors, educators' ability in training, educational procedures, technical factors and legal factors have effect on development of entrepreneurial training.

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INTRODUCTION

Considerable advances, even breakthroughs, have undoubtedly been made during the last decades in our understanding of the relationship between knowledge and growth on one hand, and entrepreneurship and growth on the other. Similarly, more profound insights have also been gained as to how entrepreneurship, innovation and knowledge are interrelated. Yet, a comprehensive understanding is still lacking concerning the interface of all of those variables: knowledge, innovation, entrepreneurship and growth (Braunerhjelm, 2010).

The international development community has recognized that agriculture is an engine of growth and poverty reduction in countries where it is the main occupation of the poor (World Bank, 2007). But the agricultural sector in many developing countries is underperforming, in part because women, who represent a crucial resource in agriculture and the rural economy through their roles as farmers, labourers and entrepreneurs, almost everywhere, face more severe constraints than men in access to productive resources. Efforts by national governments and the international community to achieve their goals for agricultural development, economic growth and food security will be strengthened and accelerated if they build on the contributions that women make and take steps to alleviate these constraints (FAO, 2011). In fact, Women's entrepreneurship is an inevitable part of country's economic development process (Sultana, 2012).

The most important factor of development is human factor in any society and in order to constant and balanced development, training of specialized, efficiency and required force of different parts of the society in educational organizations is presented as a basic and essential fact. Agriculture is considered as one of the important production and economic section at development plans that has just role and importance. Increasingly need to foodstuffs and limitation of production facilities, will cause necessity of agriculture and applying modern and more effective technologies and this matter will be possible through gaining knowledge and improvement and enforcement of human resources skills in this section. In this direction, generally, the state training system and specially the training of agriculture, have the main mechanism. A review to history of training in the section of agriculture indicates that the amount of investment and paying attention to it in different dimensions, have not been in limit and value of training and appropriate to occupational indexes and

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variances, available resources, spread of this section (about 3.5 million operator) and in accordance to the country needs (The Agriculture & Natural Resources Engineering System Organization, 2007).

With regard to population growth during 1979-1989 and that wave reaching to the first decade of 21st century, lack of progress in agricultural economy, immethodical expansion of agricultural higher education, excessive number of agricultural graduates, government policies to downsize its structure, inability of agricultural in self-employment sector (The Agriculture and Natural Resources Engineering System Organization, 2007).

Although considerable efforts of universities and higher education agricultural centers in educating and training of specialist human resources should not be ignored, concentrating on learning theoretical knowledge (Know-How) instead of applied-scientific knowledge, inattention to innovation and initiative abilities of learners, disproportionate text books syllabuses with labor market requirements, inefficient efforts in teaching practical courses, insufficient experienced and skilled lecturers for teaching the latter courses and inefficient graduates from universities and higher education centers in labor market, especially in agricultural section, are of the major problems in this system (Hajimirrahimi, 1999).

With a look at the background of education in agricultural sector in Iran it can be observed that the amount of investment and paying attention to this issue from different dimensions has never been at expected education dignity level or proportionate to indexes and employment criteria. Furthermore, available resources, private sector to employ the graduates due to traditional structure of production and livelihood exploiting system, Iran has faced an intensive crisis of unemployment for agricultural graduates in 2000s. At present based on available authorized statistics it is estimated that there are 42,500 unemployed agricultural graduates. Iranian agricultural higher education system has to find a comprehensive solution for the employment of graduates expansion of this sector in term of frequency, employees and beneficiaries of this sector (3.5 million Individuals as beneficiaries) were not applicable to the country's demands (Institute of Applied-Scientific Educations, 2002).

If the training system will grow without paying attention to economic structures and merely confirm on education of science, on the basis of international standards, it would practically expand its role and weaken the state development growth. Providing coordination between the universities operation and the needs of markets is one of the important affairs in higher education system. One of the other problems of higher education system in relation to the graduates, is lack of possibility of effective attraction at working markets, non-observance of appropriation between educational field and occupational activity, more attraction of graduates in non-production and passive sections, removing the graduates and attracting them at other industrial countries. Knowledgeable and thoughtful in developing countries have gained to this matter, more than before that unemployment problem as an obstacle in direction of development of these countries, is the main economic-social challenge and one of the most important threats of national safety and development. Also, in our country, especially in the recent decade, one of the most principles of executives and governors' trouble has been to find a solution in the mentioned problem. Specially, in agriculture section that its volume and spread in developing countries is considered a specification in these societies, there are lots of seeking human resource for work, either graduated or not. On the other hand, experiences in different countries of the world such as developed and developing countries, indicate that the best option for preparing the graduates of educational system in order to occupation at self-occupational working market, is training of entrepreneurship, the training that will have update qualification, mobility and specifications. By the view point of importance of current scientific-applied trainings and spread of these types of educations and with consideration to its efficiency at training of skilled human resource, qualification promotion of such trainings are non-avoidable necessities and use of entrepreneurship trainings may be effective in promotion and qualification improvement of educational plans and development of human resources, in such a way that finally the graduates could enjoy of efficient knowledge and technology and professional skills to be able to have entrepreneurship and cause new occupations (Institute of Applied Scientific Educations, 2002). Therefore, the agriculture scientific-applied educations centres as a part of Iran Agriculture Higher Education System may have important role on promotion of people knowledge and providing the required skills and making reality the potential talents among graduates for finding a job, profession and providing a new business (entrepreneurship) in different occupations of agriculture and increase their ability for fulfillment their duties up to a favorite level.

Pawlowski (2004) in its global prospect of higher education for 21st century has described the new universities as: "A place in which the entrepreneurial skills in order to facilitate the graduates' capabilities and promoting them to job producers are developed".

McElwee (2005) pointed that such situation has brought about an increasing demand in agricultural entrepreneurship education in recent years and has been emphasized by researchers and government authorities in different countries.

In another research entitled conceptual framework for the assessment of the efficiency of entrepreneurial education of programs aimed at entrepreneurship, there is a meaningful relationship between entrepreneurial education and the tendency to entrepreneurship. Knowing the fact that entrepreneurial education of programs can change the entrepreneurship purpose, which is to examine the economic relation of entrepreneurship

activity, is fascinating. In this research, the first stage goal is framework development that enables us to explain the programs of entrepreneurial education alongside with the changes in visions and participants' beliefs in the program and then presents the assessment of the impact of entrepreneurial education of programs on participants' goal (Volery and Muller, 2006).

So according to the needs of agriculture sector to skillful and capable graduates, and according to the key role of scientific-applied education centers in strengthening students' entrepreneurial capabilities, it was necessary to analysis of factors affecting development of entrepreneurial training in these centers and that is the main goal of this study.

MATERIALS AND METHODS

The current research is based on the survey method. The total population for this research consists of 19,255 students of agriculture scientific-applied educations centers in Iran. A sample of 355 persons was selected by using the multi-stage stratified sampling method. The data collecting tool in this research was a semi-structured questionnaire. Content and face validity were established by a panel of experts consisting of faculty members at university and some experts in agriculture scientific-applied educations centers. Minor wording and structuring of the questionnaire were made based on the recommendation of the panel of experts. Also to verify the reliability of tool, a pilot study was conducted with 30 students who had not been interviewed before. Computed Cronbach's alpha score was 77%, which indicated that the questionnaire was reliable.

Key dependent variable in the study included individual characteristics, management factors, technical factors, cultural factors, economic factors, and educational factors (academic ability of trainers, conformity of educational contents with needs of work market, educational procedures in entrepreneurial training, and ...). The independent variable in this study was development of entrepreneurial training. The collected data were analyzed using the SPSS and Minitab software. For measurement of correlation between the independent variables and the dependent variable correlation coefficients have been utilized and to analyze the effect of dependent variables, ordinal logistics regression was used.

RESULTS AND DISCUSSION

Based on the collected data, 56% of the studied students were male and 44% were female. Findings showed that the average age of the respondents is 23 years old. The most of studied students were single (74.3%) and they were studying in the field of water transmission (12.4%). Also, educational degrees of the responders' fathers was at high school diploma (25.4%) and mothers' educational degrees was under high school diploma (29.6%).

In this study, various factors affecting entrepreneurial training were ranked according to the ordinal coefficient of variation. The results indicated that among each of the technical, legal, management, economic and cultural factors, the technical factors is so important in development of entrepreneurial training and was ranked as first (table 1). The findings of researches by Hajimirrahimi (1999), Kuratko (2003) and Zoltan (2006) confirm these results.

Table 1: Ranking of effective factors in development of entrepreneurial training

Factors	Median	Ordinal Standard Deviation	Ordinal Coefficient of Variation	Rank
Technical Factors	4	0.93	0.23	1
Legal Factors	3	0.74	0.25	2
Management Factors	3	0.80	0.27	3
Economic Factors	3	0.85	0.28	4
Cultural Factors	3	0.91	0.30	5

Very low:1, low:2, moderate:3, High:4, very high:5

The obstacles and limitations of entrepreneurial training from viewpoint of the students also were ranked. The results showed that lack of educational resources in the field of entrepreneurship was in the first priority as the most effective obstacles. Also lack of competition between universities in entrepreneurship training was the last obstacle that was ranked in the final priority. In a study by Varma (2000), many of these obstacles has raised as main barriers to entrepreneurship training (table 2).

Table 2: Ranking of obstacles and limitations of entrepreneurial training

Obstacles and limitations of entrepreneurship training	Median	Ordinal Deviation	Standard	Ordinal Coefficient of Variation	Rank
Lack of educational resources in the field of entrepreneurship	4	0.78		0.20	1
Lack of seminars and congresses about training of entrepreneurship	4	0.80		0.20	2
Lack of technical knowledge about entrepreneurship training plans	4	0.82		0.21	3
Lack of financial resources required for entrepreneurship training	4	0.85		0.21	4
Lack of case studies about business start-up in education centers	4	0.89		0.22	5
Unsuitable place for entrepreneurship training courses	4	0.91		0.23	6
Inappropriate time for entrepreneurship training courses	4	0.91		0.23	7
Administrative formalities in management of entrepreneurship training	4	0.92		0.23	8
Lack of administrators believe to the entrepreneurship training	4	0.93		0.23	9
Lack of facilities and equipment for research about entrepreneurship	4	0.98		0.24	10
Lack of qualified and experienced trainers of entrepreneurship	4	0.98		0.24	11
Disharmony of organizations in the process of entrepreneurship training	4	1.07		0.27	12
Lack of administrators support of entrepreneurship training	3	0.85		0.28	13
Inadequate educational aid for entrepreneurship training	3	0.86		0.29	14
Lack of motivation of learners to participate in entrepreneurship courses	3	0.89		0.30	15
Lack of communication between the education system and work	3	0.96		0.32	16
Low levels of professional capabilities required by trainers	3	1.01		0.34	17
Lack of competition between universities in entrepreneurship training	3	1.04		0.35	18

Very low:1, low:2, moderate:3, High:4, very high:5

The results of Kendal and Spearman correlation coefficient indicated that there is positive and significant relation between some educational factors, management factors, technical factors, economic factors, legal factors, and some individual characteristics with dependent variable of development of entrepreneurial training (table 3).

Table 3: Relationship between dependent variables with development of entrepreneurial training

Dependent Variables	Kendal	Sig.	Spearman	Sig.
Educators' ability in entrepreneurship training	0.211**	0.000	0.273**	0.000
Conforming of educational contents with need of work market	0.103*	0.018	0.141*	0.024
Educational procedures in entrepreneurship training	0.121**	0.006	0.157*	0.012
Trainers familiarity with methods of entrepreneurship training	0.131**	0.003	0.178**	0.004
Management factors	0.182**	0.000	0.253**	0.000
Technical factors	0.174**	0.000	0.235**	0.000
Cultural factors	0.111*	0.013	0.156*	0.013
Economic factors	0.255**	0.000	0.338**	0.000
Legal factors	0.201**	0.000	0.265**	0.000
Age	0.112**	0.010	0.154*	0.012
Father's educational degree	0.183**	0.000	0.238**	0.000
Mother's educational degree	0.206**	0.000	0.272**	0.000

**P<0.01 *P<0.05

According to the results of non-parametric correlation coefficients, all independents variables had relation with dependent variable. Therefore, Given that the dependent variable is an ordinal scale, ordinal logistic regression was used to examine the effects of independent variables on entrepreneurial training. The results of regression analysis indicated that the variables of management factors and economic factors have effect in 0.01 significant level and educators' ability in training, educational procedures in entrepreneurship training, technical

factors and legal factors have effect in 0.05 significant level on development of entrepreneurial training (table 4).

Table 4: The results of ordinal logistic regression using Minitab software

Factors	Coefficients	Being Significant Probable	Relation of Chances
α_1	4.589	0.000	-
α_2	6.168	0.000	-
α_3	10.397	0.000	-
α_4	11.008	0.000	-
α_5	14.750	0.000	-
Educators' ability in entrepreneurship training	-0.413	0.047	0.66
Conformity of educational contents with need of work market	-0.065	0.768	0.94
Educational procedures in entrepreneurship training	-0.394	0.030	0.67
Trainers familiarity with methods of entrepreneurship training	-0.058	0.762	0.94
Management Factors	-0.691	0.000	0.50
Technical Factors	-0.397	0.011	0.67
Cultural Factors	-0.200	0.211	0.82
Economic Factors	-0.460	0.007	0.63
Legal Factors	-0.387	0.037	0.68

Goodness of fit test = 0.999 Test probability of significant = 0.000

According to the findings in table 4, the following equation can be written:

$$Y_i = \frac{\exp\{\alpha_i - 0.4138 \text{ Tech} - 0.3941 \text{ mm} - 0.6916 \text{ mang} - 0.3978 \text{ prof} - 0.4606 \text{ Econ} - 0.3873 \text{ ghnon}\}}{1 + \exp\{\alpha_i - 0.4138 \text{ Tech} - 0.3941 \text{ mm} - 0.6916 \text{ mang} - 0.3978 \text{ prof} - 0.4606 \text{ Econ} - 0.3873 \text{ ghnon}\}}$$

Conclusion and Recommendations:

In this study, various factors affecting entrepreneurial training were ranked according to the ordinal coefficient of variation. The results indicated that among all factors, the technical factor is so important in development of entrepreneurial training and was ranked as first. Also according to the results of non-parametric correlation, there is positive and significant relation between some educational factors, management factors, technical factors, economic factors, legal factors, and some individual characteristics with dependent variable of development of entrepreneurial training.

Based on the results of correlation analysis, in setting policies and strategies for the development of entrepreneurial training, with a holistic view, all the mentioned factors should be taken into consideration.

According to the other findings of the study, the following practical solutions for entrepreneurial training in agricultural scientific-applied education centers are recommended:

- Enjoying of entrepreneurs as scientific consultant for agricultural education centers;
- Collaboration with other universities in the field of entrepreneurship training;
- Adding entrepreneurship training to apprenticeships;
- Supporting entrepreneurship and small business training.

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